CHAPTER

9

Psychological Characteristics of Peak Performance

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Trying to articulate the zone is not easy because it's such an indescribable feeling. That moment doesn't happen often, and when it does happen, you feel like you're playing out of your head! You aren't feeling any tension or any pressure and physically your strokes are just flowing, every ball you hit is going in. Emotionally you're really calm. There's no strain involved. It's a euphoric feeling. The feeling that whatever you touch turns to gold. Whatever you do, whatever decision you make on the court, whatever stroke or shot you try, you know it's going to work.

—Chris Evert, tennis champion

Peak performances are those magic moments when an athlete puts it all together—both physically and mentally. The performance is exceptional, seemingly transcending ordinary levels of play. Privette defined **peak performance** as "an episode of superior functioning" (1983, p. 1361). Competitively, these performances often result in a personal best. They are the ultimate high, the thrilling moment that athletes and coaches work for in their pursuit of excellence. Unfortunately, for many athletes they are relatively rare and seemingly nonvoluntary. But are they truly nonvoluntary? Can athletes be trained so that peak performances occur more frequently? If not to produce a peak performance, can athletes be trained so they consistently play closer to their optimal level? To answer these questions, it is first necessary to know if there are any common characteristics that identify peak performances. If so, is this ideal state similar from one athlete to another or from one sport to another? More important, if common qualities are identified, can they be learned and developed?

It is safe to assume that peak performance is a consequence of both physical and mental factors. Mind and body cannot be separated. A precondition to peak performance is a certain level of physical conditioning and mastery of the necessary physical skills. Obviously, the higher the level of

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physical skill and conditioning, the more potential control the athlete has over his or her performance. Yet one must realize that peak performance is relative to each athlete's present level of ability. Peak performances are most likely to occur when athletes' skills match the demand or challenge of the situation (Csikszentmihalyi, 1990). Absolute skill level is not important; rather, it is important that the athlete has the skills to match the expected level of play. Thus, concern for enhancing peak performance is as relevant to coaches and sport psychology consultants who work with less skilled and youth sport athletes as it is to coaches and sport psychology consultants who work with professional or elite amateur athletes.

Overview of Peak Performance

The focus of this chapter is the mental side of peak performance and how the mind interacts with the body in ultimately producing performance. Most athletes and coaches will acknowledge that at least 40 to 90 percent of success in sports is due to mental factors. The higher the skill level, the more important the mental aspects become. In fact, at the elite competitive level, it is not uncommon to hear that the winner invariably comes down to who is the strongest athlete—mentally—on a given day!

If the mental side of performance is so important to success, then perhaps an ideal internal psychological climate exists during peak performance. Before discussing the research supporting this premise, we must offer a caution. Do not think that the field of sport psychology has found all the answers. There is, however, a growing foundation for understanding ways that athletes can harness the mental side of the game to increase the likelihood of achieving peak performance (Brown & Fletcher, 2017). This chapter and the following chapters in this section reflect the latest state of knowledge and the current thinking and practices of those involved in mental training for peak performance.

Psychological Characteristics During Peak Experiences in Sport

Early research in this area—primarily consisting of interviews asking athletes to describe their greatest moments in sport—indicated that peak performance feels like being in a cocoon, where you are completely detached from the external environment and any potential distractions (Garfield & Bennett, 1984). Others have summarized this peak state as "like playing possessed, yet in complete control" (Loehr, 1984, p. 67). Contemporary researchers find remarkably similar descriptions of peak performance today (e.g., Anderson, Hanrahan, & Mallett, 2014). Across studies, common psychological characteristics associated with peak performances include:

- Total immersion in the activity
- Thoughts focused on the present moment/not distractible
- Feeling in complete control
- Time/space disorientation (usually slowed down)
- Feeling that performance was automatic and effortless/being on "autopilot"
- Control over emotion, thoughts, and arousal
- Highly self-confident/loss of fear—no fear of failure
- Physically and mentally relaxed
- Limited or no recall of the event
- Highly energized
- Fun, enjoyable, and rewarding

Exercise 1

Think back to a time when you had a best-ever performance. Make a list of what you were feeling and thinking and how your body felt. Then think back to a time when you performed very poorly. Write

down what you were feeling and thinking and how your body felt at that time. Compare the two lists and develop a profile of the characteristics of your ideal mind-set for performance.

Flow and Clutch States

Often associated with peak performance is the psychological construct *flow,* defined as "the state in which people are so involved in an activity that nothing else seems to matter" (Csikszentmihalyi, 1990, p. 4). Csikszentmihalyi (2002) describes this psychological state as intrinsically rewarding and harmonious, where everything comes together and clicks into place, even during extreme challenges. Although an abundance of studies have demonstrated a relationship between flow and peak athletic performances (see Swann, Keegan, Piggott, & Crust, 2012), flow is not analogous to peak performance. One may be in flow and not necessarily be having a peak performance; however, when an athlete experiences peak performance, she or he appears to be in flow. Others have theorized that flow may be a precursor to, or the psychological process underlying, peak performance (Jackson, 1996).

In its original conception, nine dimensions of flow are described (Csikszentmihalyi, 1990; Jackson, 2000):

- The challenge of the situation matches the skills of the athlete, and these challenges and skills are at a personal high level.
- Awareness and action merge; the athlete "ceases to be aware of herself as separate from her action" (Jackson, 2000, p. 142).
- Goals are clear.
- Unambiguous feedback indicates that what is being done is correct.
- Total and complete concentration on the task at hand occurs.
- There is a paradox of control, or the sense of being in complete control without actively attempting to be in control (also described as effortless and without fear of failure).
- There is a loss of self-consciousness whereby one is aware of performing but is not concerned with self-evaluation.
- Time seems to speed up or slow down.
- The experience is autotelic—the activity is enjoyable, and participation becomes its own reward.

Although this nine-dimension conceptualization of flow has been widely accepted and used to develop popular questionnaires in sport (Koehn, Morris, & Watt, 2013) and exercise (Karageorghis, Jones, & Stuart, 2008), researchers have raised concerns in more recent critiques of this conceptual model. Swann and colleagues (Swann, Piggott, Schweickle, & Vella, 2018) assert the original nine-dimension model implicitly has been accepted as true despite not being vigorously tested in ways that could do anything other than support the model. Further, the nine-dimension model conflates what now are recognized as two distinct psychological states related to peak performance: flow and *clutch*.

In their *Integrated Model of Flow and Clutch States,* Swann et al. (2017a) introduce clutch as a psychological state that, alongside flow, is associated with peak performance. Defined as "any performance increment or superior performance that occurs under pressure situations" (Otten, 2009 p. 584), clutch states differ from flow states in that they involve deliberate focus, heightened awareness of situational demands, and intense effort (Swann et al., 2017b). Both clutch and flow states are marked by enjoyment, enhanced motivation, perceived control, altered perceptions of time, complete absorption, and confidence (Swann et al., 2017a).

In a study on peak performance, golfers described flow states as "letting it happen," while clutch states occur by "making it happen" (Swann, Keegan, Crust, Piggot, 2016). Swann and colleagues (2018) further assert that although clutch and

flow share overlapping characteristics, individuals cannot simultaneously experience both states. This integrated model is new, and more research is needed on the concept of clutch.

Researchers also have examined factors that may facilitate or disrupt flow. In a review of flow studies, Swann et al. (2012) summarized the factors that facilitated the likelihood of achieving flow as having an appropriate focus, optimal mental and physical preparation, optimal motivation, optimal arousal, positive thoughts, positive emotions, confidence, positive feedback, good team play and interaction, and optimal environmental and situational conditions. The factors that prevented flow were the exact opposite (e.g., having an inappropriate focus, lack of motivation, or negative thoughts). Further, Chavez (2008) examined what happens when an athlete is pulled out of flow. The majority of athletes in this study believed that restoring flow is possible and can be facilitated by positive thinking, a task mind-set, relaxing, clearing one's mind, and building confidence.

Exercise 2

Think of a time when you were in flow in sport. Remember what it was like to feel that way. Now also pay attention to the circumstances surrounding that performance: what were your goals and expectations going into the event; how were your coaches and teammates acting; did you notice the fans, the weather, the playing conditions? Compare this experience to a time when you were not able to focus and could not mentally get into the game. How do your experiences compare with those described in this chapter?

When considering the characteristics of flow and the factors that facilitate or disrupt it, it seems that using psychological skills may enhance the likelihood of experiencing flow. Several intervention studies have examined strategies for training athletes to achieve flow (see Norsworthy, Gorczynski, & Jackson, 2017). Empirically supported methods include imagery (e.g., Koehn et al., 2013), hypnosis (e.g., Pates & Cowan, 2013), asynchronous music (e.g., Pates, Karageorghis, Fryer, & Maynard, 2003), pre-performance routines (e.g., Pates, Cowen, & Karageorhis, 2012), and mindfulness (which can include meditation and breathing exercises with an emphasis on awareness of body sensations, thoughts, and emotions) (e.g., Scott-Hamilton, Schutte, & Brown, 2016). Taken as a whole, findings suggest that athletes can learn prerequisite skills that may enhance the likeliness of experiencing flow. Athletes who learn to be confident, focus their attention on the task at hand, control their anxiety, and have appropriate and challenging goals may experience flow and peak performance more often.

The Individualized Zone of Optimal Functioning

Another approach to examining psychological states during successful athletic performance focuses on performance-related emotions (Hanin, 2000a). The Individualized Zone of Optimal Functioning (IZOF) model (Hanin, 2000b) attempts to identify emotional patterns associated with individual athletes' successful performances with the goal of teaching athletes to recreate these patterns. Optimal performance states, which are unique to individual athletes, can include both positive and negative emotions. This model includes four groups of emotional states: positive performance enhancing, positive performance impairing, negative performance enhancing, and negative performance impairing. For example, elite Finnish athletes described feeling energetic as a positive performance-enhancing emotion, whereas easygoing was considered a positive emotion that was performance impairing (Hanin, 2000c). Tense and dissatisfied were described as negative performance-enhancing emotions, whereas

feeling tired was considered negative and performance impairing. To discover individuals' IZOFs, athletes complete an assessment, such as the Individualized Profiling of Psychobiosocial States (Ruiz, Hanin, & Robazza, 2016), identifying emotions related to their successful and unsuccessful performances and establishing a range of optimal and dysfunctional emotions. As Figure 9-1 shows, both positive and negative emotions considered performance-enhancing comprise the optimal zone, and performance-impairing emotions comprise the dysfunctional zones.

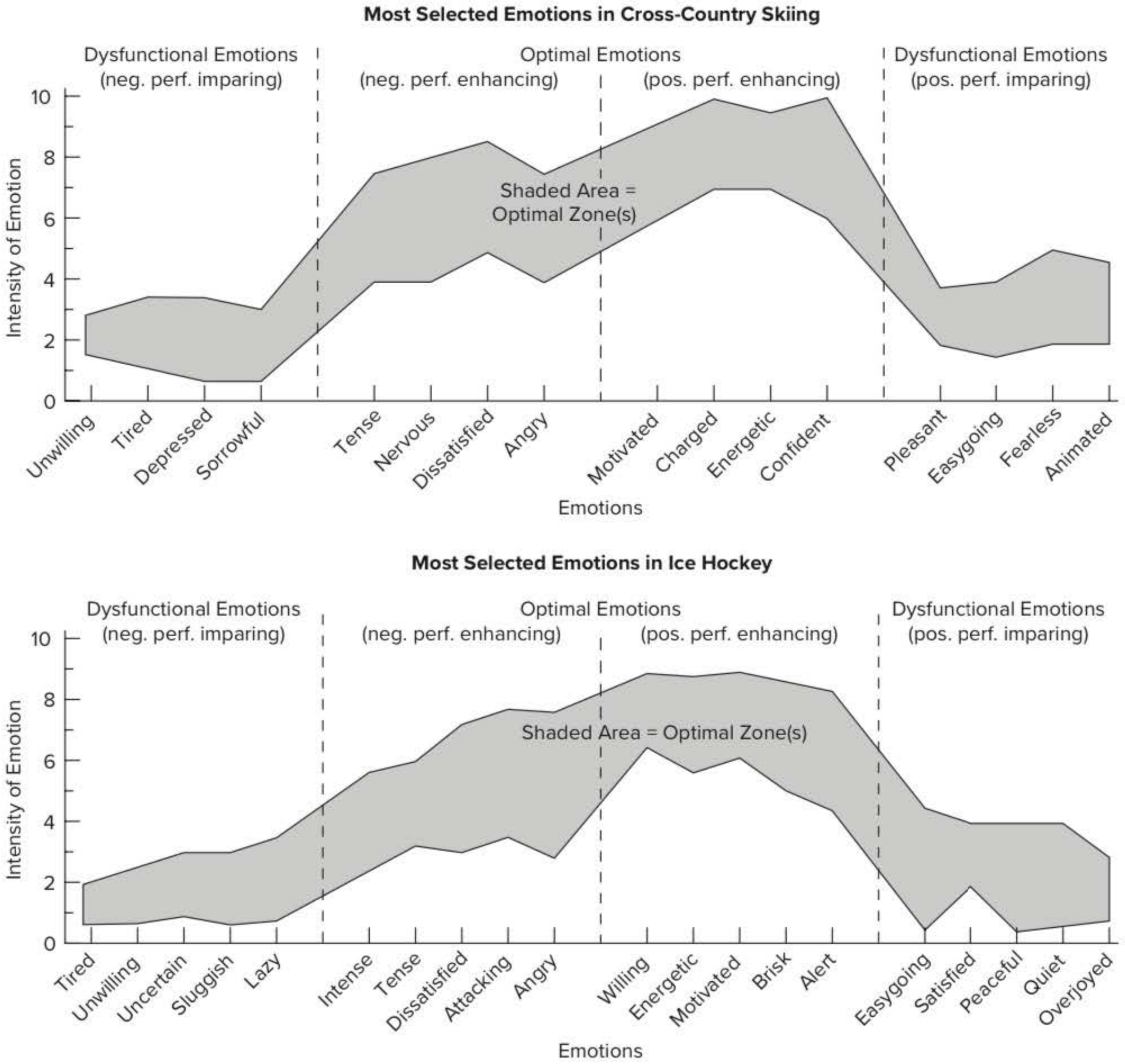

Figure 9-1 IZOF-based-emotion iceberg profiles in cross-country skiing and ice hockey

Source: Hanin, Y. L. (2000c). Successful and poor performance and emotions. In Y. L. Hanin (Ed.), *Emotions in sport* (p. 185). Champaign, IL: Human Kinetics.

Athletes whose emotional states are within their IZOF are more successful than athletes with emotional profiles out of their IZOF (Hanin, 2000c). Pellizzari, Bertollo, and Robazza (2011) found that gymnasts' emotions within their optimal zones were associated with good performances, whereas poor performances were associated with emotions in dysfunctional zones. Similarly, upon recall of best and worst performances by elite figure skaters and gymnasts, high intensity of optimal-pleasant emotions was related to best performances, whereas high intensity of dysfunctional emotions was associated with poor performance (Robazza, Bortoli, & Hanin, 2006).

This research supports the conclusion that performance-enhancing and performance-impairing IZOFs can be identified for individual athletes. Interestingly, these patterns of optimal and dysfunctional emotions differed not only across athletes but also across contexts. Elite Finnish cross-country skiers identified different IZOF for races, intensive training, and technical training (Hanin & Syrja, 1997). Teaching athletes to regulate their emotional state within their performance- enhancing zones may increase the likelihood of peak performance or assist athletes to perform more consistently. For example, athletes can carefully select pre-performance music to assist in regulating their emotional states (Middleton, Ruiz, & Robazza, 2017).

The IZOF approach can include the "metaphor self-generation method" in which athletes develop a personally meaningful, symbolic image "that allows for understanding something unknown (or difficult to describe)" (Hanin & Stambulova, 2002, p. 397). Individual metaphor profiles revealed that when considering their best performances, athletes' metaphors were action oriented and symbolized strength, power, and skill (e.g., "a tiger ready to pounce"). Not surprisingly, when considering worst performances, athletes generated converse images reflecting weakness and lack of readiness (e.g., "a cow on the ice," "a sinking boat"). Notably, it was not unusual for athletes to describe negative images and unpleasant feelings pre-event even when describing best-ever performance. However, these negative feelings and images changed to productive feelings and images during the event. Additionally, Ruiz and Hanin (2004) found these symbolic images remained relatively stable over a five-month period, yet they also evolved and reflected new experiences. Ruiz and Hanin concluded that metaphors can both increase awareness of competitive emotions and be used to change dysfunctional images and beliefs.

Exercise 3

Develop a metaphor that represents your athletic ability. Pick one skill and think about the movements and what they feel like. Then consider what symbolizes those movements. The image only needs to make sense to you. It can be an animal, something in nature, a machine, or anything else that feels right. It should remind you of what it feels like to perform really well.

Psychological Attributes and Skills of Successful and Less Successful Athletes

Although it is interesting to understand the psychological characteristics associated with peak performances, it may be considered even more important to know how athletes achieve these psychological states. Hence, a substantial amount of research has examined the psychological skills that successful athletes use, often by comparing more and less successful athletes, with the goal of learning why some individuals outperform others.

Researchers have developed a variety of scales that measure psychological skills used by athletes. The earliest questionnaire, developed by Mahoney and Avener (1977), assessed confidence, concentration, anxiety, self-talk, and imagery. Using this scale, or modifications of it, studies revealed more successful athletes had high self-confidence and few self-doubts, used imagery more often, and controlled their anxiety better than the less successful athletes (e.g., Gould, Weiss, & Weinberg, 1981).

Subsequently developed questionnaires focused on assessing the use of psychological skills. These scales included the Psychological Skills Inventory for Sport (PSIS; Mahoney, Gabriel, Perkins, 1987), the Test of Performance Strategies (TOPS; Thomas, Murphy, & Hardy, 1999), and the Ottawa Mental Skill Assessment Tool (Durand-Bush, Salmela, & Green-Demers, 2001). While each of these questionnaires measures slightly different aspects of mental preparation and psychological skill use, findings from studies using them are remarkably similar. It seems that regardless of how it is measured, elite and successful athletes consistently report using the following psychological skills, which likely contribute to their high-level performances (e.g., Hayslip, Petrie, MacIntire, & Jones, 2010):

- Imagery
- Attentional focusing
- Maintaining concentration
- Controlling anxiety and activation
- Positive self-talk
- Goal-setting

Employing a different methodological approach, qualitative researchers examining peak performance have interviewed athletes to obtain detailed descriptions of their perceptions and experiences. Across studies with Olympic and other elite athletes (e.g., Anderson et al., 2014; Gould, Dieffenbach, & Moffett, 2002; Legg, Mackie, & Park, 2005), a consistent pattern emerged of what Orlick and Partington (1988) called "mental links to excellence." These athletes described

- Total commitment
- Clearly defined goals
- High confidence
- A positive attitude
- Control of arousal levels and a facilitative interpretation of anxiety
- Daily imagery practice
- Well-developed concentration and focusing skills
- Well-honed practice and competition plans
- Distraction control strategies
- Postcompetition evaluation and continual refinement of their mental approach
- Emphasis on quality rather than quantity of practice
- Use of competition simulation

Adding to the previous findings, Fletcher and Sarkar (2012) interviewed Olympic gold medalists about their resilience. These champions were conscientious, innovative, open to new experiences, emotionally stable, and optimistic. These findings are consistent with Gould, Dieffenbach et al.'s (2002) interviews with Olympic champions. In addition, Gould, Dieffenbach et al. found that the gold medalists had high levels of dispositional hope (i.e., a sense of control in setting and achieving goals), high productive perfectionism (i.e., personal standards), and low unproductive perfectionism (i.e., concerns about mistakes, parental criticism and expectations, doubts). The champion athletes in both studies possessed what Gould and colleagues called "sport intelligence," which included analyzing skills and performances, being innovative, making good decisions, being proactive, and taking responsibility for their actions.

Perhaps one of the most salient differences between more and less successful performances is the extent to which athletes adhere to their mental preparation plans and precompetition routines and how well practiced and internalized their coping strategies were. Overall, successful athletes have highly developed techniques for coping with distractions, which reduce the impact of negative unforeseen events or allow them to interpret these occurrences positively (Anderson et al., 2014). Coping strategies often included using positive thinking; a narrow, specific focus of attention; and changing their environment (e.g., avoiding potential irritants, moving away

from others) (e.g., Gould & Maynard, 2009). The less successful athletes departed from their normal routines, abandoned competitive plans when under pressure, lost competitive focus, and did not rigorously adhere to their mental preparation plans.

Across all these quantitative and qualitative studies, there appear to be some commonalities in the psychological characteristics of more successful athletes. For successful athletes, the most consistent finding is that they are highly confident. They also tended to be "psyched up" rather than "psyched out" by demanding competitive situations, such as the Olympics or World Championships. Overall, the psychological characteristics and mental skill use associated with successful elite athletic performance include the following:

- High self-confidence
- Total commitment
- A strong performance focus
- The ability to cope well with stress and distractions
- Good attention-focusing and refocusing skills
- Ability to rebound from mistakes
- An optimistic, positive attitude
- High personal standards
- Well-developed precompetition and competitive plans
- The ability to control emotions and remain appropriately activated
- A view of anxiety as beneficial
- Use of performance goals
- Use of imagery

Exercise 4

Think of a typical time when you were in a clutch or zone of optimal functioning state. Take in the circumstances, the situation, and what it felt like mentally and physically. Now think about what mental skills assisted you in achieving that state and performance. Make a list of these mental skills and mental states.

Another interesting theme that has emerged from studies with elite performers links peak performance with being creative, engaging in self-reflection, developing perspective, and having balance in one's life (Fletcher & Sarkar, 2012; Gould, Dieffenbach et al., 2002). Comparable to Gould and colleagues' notion of sport intelligence, optimal performance appears to be related to training smart. Developing talent, according to Csikszentmihalyi, Rathunde, and Whalen (1993), involves viewing difficult situations as challenging and enjoying the hardships inherent in perfecting skills. Being creative and reflective may allow athletes to view challenges more like a puzzle to complete rather than as a difficult situation. Research with talented teenagers found creativity is associated with enjoyable flow experiences, and enjoyment is one of the primary determinants of developing talent (Csikszentmihalyi et al., 1993). Part of enjoying sport excellence and being mentally tough is having balance in one's life. This theme suggests that a broader view of psychological influences on peak performance may be appropriate.

Exercise 5

Think about your training routine. How much time and effort do you put into it? Map out a typical week of training, including practice, strength and conditioning, mental skills training, time with sport medicine, and any other training obligations. Now identify times during the week when you are creative, self-reflective, and develop perspective. Would you describe your routine as training smart and having balance in one's life? If not, what changes would allow you to train smart and with balance?

A Profile of Mental Toughness

It seems that throughout this chapter we have been discussing what may be termed *mental toughness.* When discussing what it takes to be successful in sport, athletes often express that to have consistently strong athletic performances, they need to be mentally tough. Based on interviews with elite athletes, coaches, and sport psychology consultants, Jones, Hanton, and Connaughton (2007) described mental toughness as an unshakable belief that one can achieve their goals, regardless of obstacles or setbacks. In his recent review, Gucciardi (2017) further conceptualized mental toughness as a "state-like psychological resource that is purposeful, flexible, and efficient in nature for the enactment and maintenance of goal-directed pursuits" (p. 18). Athletes high in mental toughness also score high on confidence, constancy (i.e., dedication and dependability), control, determination, imagery, positive cognition, self-belief, and self-esteem (Zeiger & Zeiger, 2018). Based on extant research it seems that, during competitions, mentally tough athletes

- Have an "unshakable belief" (they know they can do anything they set their minds to do)
- Stay focused
- Regulate performance (increase effort as necessary)
- Cope well with pressure
- Are aware of, and control, their thoughts and feelings
- Control the environment (i.e., are not affected by things out of their control)

Postcompetition, mentally tough athletes cope with both failure and success. They learn from their failures and use them to motivate themselves toward future success.

Given its link to peak performance, researchers have focused on how mental toughness is fostered. Connaughton, Hanton, and Jones (2010) interviewed super-elites (Olympic or World Champion athletes) and coaches and sport psychology consultants who worked with them, focusing on the development and maintenance of mental toughness. As they summarized, mental toughness development programs "should initially concentrate on skill mastery, enjoyment, competitiveness, a disciplined and structured training regimen, and finally, building a belief of superiority" (p. 191). These findings have been complemented by research in which coaches provided their perceptions of developing mental toughness. Coaches believed that they could play an important role in helping athletes develop mental toughness through hard physical practice, fostering climates that promoted mental toughness, building confidence, and encouraging mental skill development (Driska, Kamphoff, & Armentrout, 2012; Weinberg, Butt, & Culp, 2011), but there are notable challenges for coaches to be the primary source of delivery, such as a lack of time in practices (Mahoney, Ntoumanis, Gucciardi, Mallett, & Stebbings, 2016). Nevertheless, interviews with expert applied sport psychology consultants led Weinberg, Freysinger, and Mellano (2018) to conclude that coaches *can* build mental toughness in their athletes but must be systematic, thoughtful, and reflective in doing so. Specifically, these researchers forwarded a model that encourages coaches to create adverse situations in practice while teaching mental skills to overcome the adversity. Similarly, researchers have described how a behavioral-focused coaching framework can be adapted to develop mental toughness in their players, demonstrating that coaches can indeed play a key role in athlete mental toughness (Anthony, Gordon, Gucciardi, & Dawson, 2018). These studies point to the importance of coaches and sport psychology consultants in helping athletes develop mental toughness.

support network (Gould, Dieffenbach et al., 2002; Gould & Maynard, 2009). Families provided social and emotional support and encouragement, guided athletes through good and bad experiences, promoted autonomy, and voiced their belief in the athlete's ability to succeed and encouraged a "can-do" attitude. Another issue affecting athletes' ability to perform optimally is organizational stress, or concerns that arise because of the management of teams. Five primary sources of organizational stress have been identified: goals and athletic development, logistics and operations (e.g., daily training), team and culture (e.g., attitudes and behavior within team), coaching, and selection (e.g., being chosen to compete) (Arnold, Fletcher, & Daniels, 2016).

In their review of Olympic preparation, Gould and Maynard (2009) identified the following social and situational factors that can influence athlete performance: team confidence, team cohesion and harmony, team residency program (i.e., spending dedicated time training together), support of friends and family, good coach–athlete relationships, media training, having experienced support personnel, and having plans for coping with travel concerns and equipment problems. In all, it seems that team and environmental factors affect the likelihood of peak performance.

Conclusion: What It Takes to "Make It"

There seems to be a fairly strong consensus that to become a successful elite athlete takes commitment, dedication, mental toughness, and the ability to pursue a dream in a rational manner. When asked, coaches, scouts, and athletes state the importance of psychological states and mental skill use. Top coaches and scouts in the National Hockey League used words such as desire, determination, attitude, heart, and self-motivation when asked what determines who does and does not make it at the professional level (Orlick, 2007). Olympic coaches felt that to be successful, athletes needed confidence, social support, and cohesive teams, as well as to be able to maintain their composure, be prepared to cope with distractions, and have a sound competitive plan (Gould, Greenleaf et al., 2002).

Similarly, that mental preparation is important for success was a consistent theme across studies of Olympic athletes (Gould & Maynard, 2009). The Canadian Olympians in Orlick and Partington's (1988) study believed that through psychological skills training they improved their performance level and learned to perform more consistently at their best. Many of the Olympic athletes interviewed by Orlick and Partington stated that they could have obtained their best performances much sooner had they strengthened their mental skills earlier in their athletic careers. All of these attributes may be developed or enhanced by using psychological skills.

At this point, a word of caution is needed regarding the interpretation of the research summarized in this chapter. Much of the evidence presented was either descriptive or correlational. What this means is that it generated descriptions of successful athletic experiences or identified relationships between psychological skills and peak performances. Based on this type of research, we cannot make any conclusions about cause-and-effect relationships—we cannot say certain mental states cause peak performances; we can note only that they are related. When considering the question, "Are the psychological differences between successful and less successful athletes critical to performance differences?" there seems to be a lot of evidence suggesting that psychological characteristics are associated with peak performances. Still, we do not know if athletes first learned the psychological skills necessary to achieve an ideal mental state or if they developed these characteristics by being consistently successful. It also is plausible that athletes with certain psychological strengths are drawn to elite-level sport. We may never know what causes an ideal mental state. However, given the weight of the evidence presented, it seems safe to assume that (a) elite athletes have consistent psychological profiles when they compete at elite levels, (b) they use psychological skills in pursuit of their athletic goals, and (c) these skills can be learned and developed.

Exercise 6

Reflect on a recent performance during an athletic competition. Identify the skills you did well. What can you do to try to improve further upon these skills? Now identify two to three mistakes that you made. What would you do differently or what can you do in practice to avoid making that mistake again? Consider these as lessons learned and make a plan to improve future performances. Name three things you can do to become more mentally tough.

Often used interchangeably with mental toughness are the terms grit and resilience. Both of these concepts seem to overlap with mental toughness. In fact, grit was characterized as "old wine in a new bottle," suggesting that it is indistinguishable from concepts such as mental toughness and resilience (Credé, Tynan, & Harms, 2017). Fletcher and Sarkar (2013) explain resilience as the ability to make positive adaptions following adversity.[1] Interviews with high achievers from a variety of performance domains yielded six themes of resilient qualities pertaining to peak performance:

- Positive and proactive personality (i.e., a disposition toward taking constructive action)
- Ability to learn from past experience (successes and struggles)
- Sense of control
- Flexibility and adaptability
- Balance and perspective
- Perceived social support (Sarkar & Fletcher, 2014)

Other work shows that Olympic gold medalists viewed adversity they faced (e.g., injuries, significant failures, death of family member) as instrumental to their success because they turned the adversity into sources of motivation and personal growth (Sarkar, Fletcher, & Brown, 2015). That is, for some athletes, overcoming adversity is an important component of building resiliency.

[1] See Gucciardi (2017) for a complete discussion on the commonalities and key differences between resilience and mental toughness.

Team, Coach, Family, and Organizational Influences on Peak Performance

To this point, we have emphasized factors within athletes that help or hinder peak performance. Another consideration is the effect that other people may have on high-level athletic performance, such as teammates, coaches, family members, and administrators. Pertaining to team performance, much focus has been on team building, given the positive correlation between performance and team cohesion (see Filho, Dobersek, Gershgoren, Becker, & Tenenbaum, 2014). Olympic athletes believe that team cohesion is critical to their success (Gould, Greenleaf, Chung, & Guinan, 2002). In particular, having a positive team leader and strong team chemistry were considered helpful, while lacking trust and confidence in one's teammates interfered with optimal performance.

Coaches also can be quite influential on athletes. Ideally, coaches help athletes learn the psychological, physical, and tactical skills needed to be successful. However, coaches may unintentionally interfere with success. U.S. Olympic athletes identified that coaches with strong commitment and those who implemented a clear performance plan assisted successful performances (Gould, Greenleaf et al., 2002). Conversely, the following coach attributes hindered team success:

- Inability to deal with crises
- Unrealistic expectations
- Overcoaching and excessive interactions with team members
- Inability to make decisive and fair decisions
- Inability to "keep it simple"

Research also highlights the critical role that parents and family members played in elite athletes'

Summary

This chapter began with the questions "Is there an ideal body–mind state associated with peak performance?" and "If so, is this ideal state similar from one athlete to another or from one sport to another?" Across a wide range of sources, a certain psychological profile appears to be linked with successful athletic performance. Although there are individual variations, in most cases this general profile is depicted by the characteristics listed in Table 9-1. This ideal performance state does not just happen. Top-level athletes have learned to create and maintain this state so that their talents and physical skills thrive. Additionally, successful athletes have strong support networks that include their families, friends, teammates, and coaches. Having high team cohesion, good communication and relationships with coaches, and minimal organizational stress also are associated with elite performances.

Psychological skills are learned through knowledge and practice, just as physical skills and competitive strategies are learned. Some gifted athletes may perfect these mental states on their own, but most need to be taught specific training techniques. The remaining chapters in this section of the book provide techniques for creating and maintaining desirable mental and physiological states. Just as improving physical skills, strategies, and conditioning increases the likelihood of peak performance, learning to control psychological readiness and the ideal mental climate for peak performance also enhance performance.

Table 9-1 **Mental Links to Peak Performance**

Psychological Profile of Successful Elite Athletes	Mental Skills Associated with Peak Performances
• High self-confidence and expectations of success • Self-regulation of arousal (energized yet relaxed) • Feeling in control • Total concentration • Keen focus on the present task • Viewing difficult situations as exciting and challenging • Productive perfectionism (i.e., have high standards, yet flexibility to learn from mistakes) • Positive attitude and thoughts about performance • Strong determination and commitment	• Setting goals • Imagery • Developing competition plans • Practicing coping skills so they become automatic • Employing competitive simulation • Thought control strategies • Arousal management techniques • Attention control • Developing refocusing skills and plans

Study Questions

1. Compare and contrast flow and clutch states. Then describe how these relate to, but are distinct from, peak performance.
2. Summarize the psychological states typically associated with peak performances.
3. What factors will enhance and hinder flow experiences?
4. What is the IZOF model and how does it relate to peak performance?
5. Describe several metaphors you associate with successful and less successful performances.
6. What are the primary psychological characteristics that distinguish between more and less successful athletic performances?
7. Summarize the major psychological characteristics of elite athletes.
8. What are the primary psychological skills that elite athletes use? What is the association between these skills and peak performance?
9. Describe mental toughness and its relationship to performance.
10. Describe how athletes' relationships with their teammates may influence optimal performance.
11. What are things that coaches may do that will interfere with peak performance?
12. What is organizational stress and how might it influence athletes' performances?
13. If you were a coach or administrator, how would you minimize the problems faced by Olympic athletes who did not achieve their goals?

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