

## CHAPTER 13

# *Mental Skills Training in Sport*

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Sport psychology has evolved from a fledgling academic discipline narrowly focused on motor behavior research in laboratory settings to a broad, interdisciplinary profession in which psychological services are provided to a range of physical activity participants. The focus of this chapter is on mental skills training with athletes, coaches, and teams, with the objective of assisting sport participants in the development of mental skills to achieve performance success and personal well-being. A comprehensive review of the literature pertaining to mental skills training in sport is undertaken to address the following questions: What has the field of sport psychology learned from almost 3 decades of mental skills training with athletes? How has mental training evolved, and have the objectives of mental training in sport been achieved? What future directions should the field consider to enhance the significance and impact of mental skills training in sport?

The chapter is divided into five sections. First, the historical development of mental training in sport is described. Second, a model of mental skills for athletes and coaches is offered, and third, a framework for understanding mental skills training in sport is presented. Fourth, the uses and effectiveness of mental skills training in sport are reviewed, and finally, suggestions for the future of mental training in sport are provided. The theme of the chapter is that mental skills training has evolved from the decontextualized application of specific techniques to enhance performance (e.g., imagery, self-talk) into a comprehensive intervention process whereby various philosophies, models, strategies, techniques, and consultant styles are utilized in specific social-cultural

contexts to help athletes and coaches achieve significant personal development as well as performance success.

### **HISTORICAL DEVELOPMENT OF MENTAL SKILLS TRAINING IN SPORT**

Published literature indicates that the Soviet Union was the first country to systematically engage in mental skills training with athletes and coaches in the 1950s (Ryba, Stambulova, & Wrisberg, 2005; J. M. Williams & Straub, 2006). Avksenty Puni was a key leader in Soviet sport psychology, and his 1963 article "Psychological Preparation of Athletes for Competition" and other writings (cited in Ryba et al., 2005) formalized perhaps the earliest mental training model, which included self-regulation of arousal, confidence, attentional focusing, distraction control, and goal setting. The Soviet emphasis on mental training with athletes was systematically applied to other Eastern Bloc countries, including East Germany and Romania, during the 1970s and 1980s (Salmela, 1984; J. M. Williams & Straub, 2006).

Although the systematic practice and study of mental training in sport in North America did not emerge until the 1980s, several pioneers began work in mental training prior to this time. Coleman Griffith was hired by the Chicago Cubs professional baseball team in 1938 to improve the performance of the team. The mental training techniques used by Griffith included practice management strategies for enhanced learning and automation of skills, communication

skills for coaches, team dynamics and leadership development, goal setting, confidence building, competitive simulation, a test battery for measuring players' basic physical and "visual" skills, and a recommendation that psychological testing and observation be included in scouting (Green, 2003). Another American mental training pioneer from this historical era was Dorothy Hazeltine Yates, who engaged in mental skills training with boxers and aviators, primarily focusing on a "relaxation set-method" and mental preparation (Kornspan & MacCracken, 2001; Yates, 1943). Like Griffith, Yates (1943) also engaged in controlled experimental investigations of the effectiveness of her mental training interventions, with positive results.

David Tracy was hired as a mental training consultant with the St. Louis Browns professional baseball team in 1950, and his work with the players included relaxation, thought management through self-talk and thought stopping, and hypnosis (Kornspan & MacCracken, 2002). Bruce Ogilvie, a clinical psychologist, began consulting work with athletes in the 1960s (Ogilvie & Tutko, 1966), and another clinical psychologist, Richard Suinn, published one of the first intervention studies that assessed the effectiveness of mental training with athletes. Suinn's (1972) intervention using relaxation, imagery, and behavioral rehearsal improved race performance in a group of elite skiers and led to subsequent mental training work with the U.S. Ski Team (Suinn, 1977).

Mental skills training became a major focus for research and practice in North American sport psychology in the 1980s. Several events are indicative of this professionalization, in which sport psychology moved from an academic research discipline to an interdisciplinary professional field offering services to consumers. These events include the establishment of guidelines and a registry for the provision of sport psychology services by the U.S. Olympic Committee in 1983, the first systematic provision of sport psychology services to the U.S. Olympic Team in 1984 (Suinn, 1985), the hiring of a full-time sport psychologist by the USOC and the formation of the Association for the Advancement of Applied Sport Psychology (AAASP) in 1985, the formation of a division of Exercise and Sport Psychology within the American Psychological Association in 1987, the establishment of two new applied journals (the *Sport Psychologist* in 1987 and the *Journal of Applied Sport Psychology* in 1989), the development of a certification program for sport psychology consultants by AAASP in 1991, and the publication of numerous books devoted to mental training interventions (e.g., Harris & Harris, 1984; Nideffer, 1981; Orlick, 1980, 1986, 1990). Massive debate

occurred during this time period regarding *who* could offer *what types* of psychological services to consumers (Brown, 1982; Clarke, 1984; Danish & Hale, 1981, 1982; Gardner, 1991; Harrison & Feltz, 1979; Heyman, 1982, 1984; Nideffer, DuFresne, Nesvig, & Selder, 1980; Nideffer, Feltz, & Salmela, 1982; Silva, 1989; "U.S. Olympic Committee," 1983) and whether there was adequate scientific evidence to justify mental training interventions in sport ("ABC Nightline News Telecast," 1988; Dishman, 1983; R. E. Smith, 1989).

Today, sport psychology is widely acclaimed as an interdisciplinary field in which professionals across the globe use training from both the sport sciences and psychology to engage in mental skills training that is guided by established training standards and professional competencies (Morris, Alfermann, Lintunen, & Hall, 2003; Tenenbaum, Lidor, Papaioannou, & Samulski, 2003), ethical guidelines for service delivery (Petitpas, Brewer, Rivera, & Van Raalte, 1994), and a rapidly accumulating body of knowledge on which appropriate and effective mental training interventions are developed and implemented (e.g., Andersen, 2000, 2005; L. Hardy, Jones, & Gould, 1996; Lidor & Henschen, 2003; Meyers, Whelan, & Murphy, 1996; Morris, Spittle, & Watt, 2005; S. Murphy, 2005; Vealey, 2005).

## MENTAL SKILLS FOR ATHLETES AND COACHES

What knowledge have we gained in the past 25 years about mental skills that are important for athletes and coaches? The objective of mental training is to assist sport participants in the development of mental skills to achieve performance success and personal well-being. Thus, it seems important to identify key mental skills that are related to performance success and personal well-being to guide the development of mental training interventions. A model of mental skills for athletes and coaches is shown in Figure 13.1. An extension of a previous model (Vealey, 1988), it serves to emphasize that multiple types of mental skills are important for success and well-being in athletes and coaches, including foundation, performance, personal development, and team skills.

### Foundation Skills

Foundation skills are intrapersonal resources that are the basic foundation mental skills necessary to achieve success in sport. *Achievement drive* is the urgent, compelling desire to apply effort and persistence to overcome obstacles to accomplish something of worth or importance. Achievement drive also leads to committed behavioral management

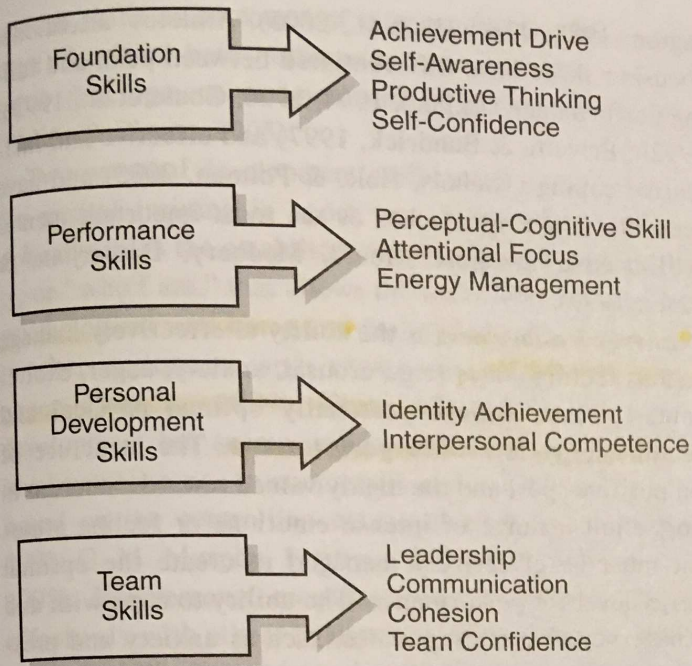


Figure 13.1 Mental skills for athletes and coaches.

to organize and manage daily living in the pursuit of important goals. An overwhelming amount of research has shown that highly successful elite athletes possess strong achievement drives that fuel their daily commitment to pursuing and achieving important goals (Bull, Shambrook, James, & Brooks, 2005; DeFrancesco & Burke, 1997; Durand-Bush & Salmela, 2002; Gould, Dieffenbach, & Moffett, 2002; Greenleaf, Gould, & Dieffenbach, 2001; Jones, Hanton, & Connaughton, 2002; Orlick & Partington, 1988). This skill involves meticulous planning, time management and prioritization, hard and smart training, a willingness to sacrifice and delay gratification, taking personal responsibility for training, designing and following behavioral strategies such as routines, and the ability to set and achieve goals (Durand-Bush & Salmela, 2002; Gould, Dieffenbach, et al., 2002; Gould, Eklund, & Jackson, 1992a, 1992b; Gould, Eklund, & Jackson, 1993; Gould, Finch, & Jackson, 1993; Greenleaf et al., 2001; Holt & Dunn, 2004). Expert athlete performance results from many hours of specific and focused training at a high level (Baker, Côté, & Abernethy, 2003; Durand-Bush & Salmela, 2002), and success in coaching requires a passion to coach, commitment to learning, perseverance in the face of obstacles, and strong planning and organizational skills (Vallée & Bloom, 2005; Vealey, 2005).

*Self-awareness* is the ability to engage in introspection and retrospection to understand one's thoughts, feelings, and behaviors. The ability to engage in honest self-appraisal to enhance self-awareness has been identified as

an important mental skill by elite athletes (Bull et al., 2005; Calmels, d'Arripe-Longueville, Fournier, & Soulard, 2003) and sport psychology consultants (Ravizza, 2006). Self-monitoring and self-evaluation are critical precursors to effective self-regulation and success in sport (Chen & Singer, 1992; Kirschenbaum & Wittrock, 1984).

*Productive thinking* is the ability to manage thoughts to effectively prepare for and respond to life events in a way that facilitates personal success and well-being. Research has substantiated that successful athletes think more productively than less successful athletes. Successful athletes focus more on task-relevant thoughts and are less likely to be distracted (Eklund, 1994, 1996; Gould et al., 1992a, 1992b; Gould, Eklund, et al., 1993; Gould, Dieffenbach, et al., 2002; Greenleaf et al., 2001; Jones et al., 2002; Orlick & Partington, 1988). A unique study by McPherson (2000) examined the thinking of collegiate tennis players by recording their thoughts during and after each point in a tennis match based on the questions "What were you thinking during that point?" and "What are you thinking now?" The elite athletes' thoughts were task-oriented, involved planning strategies, focused on problem solving, and focused confidently on enabling feelings and beliefs about their competence and ability to succeed. The novice athletes' thoughts included more expressions of frustration and emotion and were indicative of low confidence and having negative expectations and a consistent desire to quit.

Successful elite athletes have also been shown to be optimistic, hopeful, and adaptively perfectionistic in setting high personal standards, but not being overly concerned with making mistakes (Gould, Dieffenbach, et al., 2002). Research with professional baseball, professional basketball, and collegiate swimming teams found that optimistic teams performed better than pessimistic teams (Seligman, 1998). Rational thinking and perspective have been shown to be important mental skills for the mental resilience needed to cope with the uncontrollable obstacles and setbacks inherent in competitive sport (Bull et al., 2005; Gould, Eklund, et al., 1993; Gould, Finch, et al., 1993; Greenleaf et al., 2001; Jones et al., 2002; Thelwell, Weston, & Greenlees, 2005). Finally, expert athletes have demonstrated adaptive attributional patterns to explain their performance successes and failures (Cleary & Zimmerman, 2001; Kitsantas & Zimmerman, 2002), which serves to enhance their motivation. Expert coaches demonstrate several forms of productive thinking, including mental rehearsal of competition plans, maintaining a positive focus, and knowing how to occupy their thoughts

in productive ways prior to competition (Bloom, Durand-Bush, & Salmela, 1997).

*Self-confidence* is the belief that one has the internal resources, particularly abilities, to achieve success. International-level elite athletes identified resilient and robust self-confidence, or the unshakable belief in one's ability to achieve, as the most critical mental skill defining mental toughness (Bull et al., 2005; Jones et al., 2002; Thelwell et al., 2005). Self-confidence consistently appears as a key skill possessed by successful elite athletes (DeFrancesco & Burke, 1997; Durand-Bush & Salmela, 2002; Gould, Dieffenbach, et al., 2002; Gould, Greenleaf, Chung, & Guinan, 2002; Kitsantas & Zimmerman, 2002), and fluctuations in confidence account for differences in best and worst performances (Eklund, 1994, 1996; Gould et al., 1992a, 1992b; Greenleaf et al., 2001). Elite field hockey players identified the development and maintenance of self-confidence as one of their biggest needs in terms of mental training (Grove & Hanrahan, 1988).

### Performance Skills

Performance skills are mental abilities critical to the execution of skills during sport performance. *Perceptual-cognitive* skill refers to the cognitive knowledge structure that enables optimal strategic processing of task-relevant information. Although perceptual-cognitive expertise is discussed extensively in Chapter 11, it is included in this chapter as a critical performance skill that must be included in the mental skills model shown in Figure 13.1. Highly skilled athletes demonstrate expertise in tactical/strategic knowledge and perceptual and decision-making skill in sport, including superior recall and recognition of patterns of play, faster detection and recognition, more efficient and appropriate visual search behaviors, and better anticipation of likely events in their specific sports (McPherson & Kernodle, 2002; Tenenbaum, 2002; Tenenbaum & Bar-Eli, 1993; A. M. Williams & Ward, 2003). Also, the ability to generate and use vivid and controllable mental images of performance responses is associated with better sport performance (K. A. Martin, Moritz, & Hall, 1999).

*Attentional focus* is the ability to selectively direct and sustain a focus of attention required for the successful execution of a specific activity. The ability to direct and sustain a nondistractible focus of attention is widely observed in and cited by athletes as a mental skill critical to performance (DeFrancesco & Burke, 1997; Durand-Bush & Salmela, 2002; Gould, Dieffenbach, et al., 2002; Gould, Eklund, & Jackson, 1993; Greenleaf et al., 2001; Jones et al., 2002; Kitsantas & Zimmerman, 2002; Orlick & Part-

ington, 1988; Thelwell et al., 2005). Athletes' attentional focusing skills have differentiated between peak and failing performance (Eklund, 1994, 1996; Gould et al., 1992a, 1992b; Privette & Bundrick, 1997) and effective and ineffective coping (Nichols, Holt, & Polman, 2005) and have been identified by coaches as the most important mental skill needed in sport (Gould, Medbery, Damarjian, & Lauer, 1999).

*Energy management* is the ability to effectively manage various feeling states (e.g., arousal, anxiety, anger, excitement, fear) to achieve personally optimal physical and mental energy levels for performance. The structure of competitive sport and the highly valued rewards inherent in sport elicit a range of intense emotions or feeling states that must be effectively managed to create the optimal energy level for performance. The ability to cope with and manage negative feeling states, such as anxiety and pressure, is a key mental skill possessed by elite athletes (Bull et al., 2005; Gould, Dieffenbach, et al., 2002; Gould, Eklund, et al., 1993; Jones et al., 2002; Thelwell et al., 2005). Athletes have identified "normal nervousness" and optimal emotional arousal as associated with high-level performances and inappropriate or negative emotional states as associated with low levels of performance (Eklund, 1994, 1996; Gould et al., 1992a, 1992b). A key component of mental toughness as identified by elite athletes is the ability to push back the boundaries of physical and emotional pain to maintain effective performance under distress (Jones et al., 2002). Successful expert coaches have the ability to remain composed and manage their energy levels during and after competition to remain effective (Bloom et al., 1997; Vallée & Bloom, 2005). Elite coaches have also identified emotional control and management of nervousness and tension as the biggest mental training need for their athletes (Grove & Hanrahan, 1988).

### Personal Development Skills

Personal development skills are mental skills that represent significant maturational markers of personal development and that allow for high-level psychological functioning through clarity of self-concept, feelings of well-being, and a sense of relatedness to others. Life skills (Danish & Nellen, 1997; Danish, Petitpas, & Hale, 1992) that are athlete-centered (P. S. Miller & Kerr, 2002) and child-centered (Weiss, 1991), life engagement (Newburg, Kimiecik, Durand-Buch, & Doell, 2002), philosophical counseling (Corlett, 1996), and sociocultural (Brustad & Ritter-Taylor, 1997; Ryba & Wright, 2005) approaches to mental training interventions all focus on personal devel-

opment skills as outcomes of interest. Successful coaches have identified both performance enhancement and personal development as important objectives for coaches (Vallée & Bloom, 2005).

Two personal development skills seem to be important for mental training in sport (see Figure 13.1). *Identity achievement* is the establishment of a clear sense of identity, or "who I am," that allows the individual to experience psychological well-being and feelings of self-worth, usually after exploration and introspection about life experiences (Marcia, 1994). This skill requires long-term development but seems important for athletes because it involves resistance to conformity and subcultural pressure based on the controlling nature of elite sport (Coakley, 1992; G. M. Murphy, Petitpas, & Brewer, 1996; Sparkes, 1998). *Interpersonal competence* is the ability to interact effectively with others by demonstrating effective communication skills. Interpersonal competence was identified as an important mental skill for elite athletes in terms of providing and using social support (Holt & Dunn, 2004).

### Team Skills

The final category of mental skills shown in Figure 13.1 is team skills. Team skills are collective qualities of the team that are instrumental to an effective team environment and overall team success. *Team confidence* is the belief that the team has the collective resources, or team abilities, to achieve team success. Team confidence is a better predictor of team success than the aggregate of individual levels of confidence for all team members (Feltz & Lirgg, 1998; Gould, Greenleaf, et al., 2002). *Cohesion* is the team's ability to stick together and remain united in the pursuit of its goals, which is an important predictor of team performance (Carron, Colman, Wheeler, & Stevens, 2002; Greenleaf et al., 2001). *Communication* is the process of interpersonal interaction within the team that facilitates team success and athletes' well-being. *Leadership* is the ability of individuals (coaches and athletes) to influence others on the team to think and act in ways that facilitate team success and the quality of the team's social psychological environment. Successful Olympic teams have been shown to possess coaches who instilled confidence and trust in their athletes and who coped well with crisis situations, whereas unsuccessful Olympic teams had coaches who failed to develop trust and effective communication and who were inconsistent in their behaviors in pressure situations (Gould, Guinan, Greenleaf, Medbery, & Peterson, 1999).

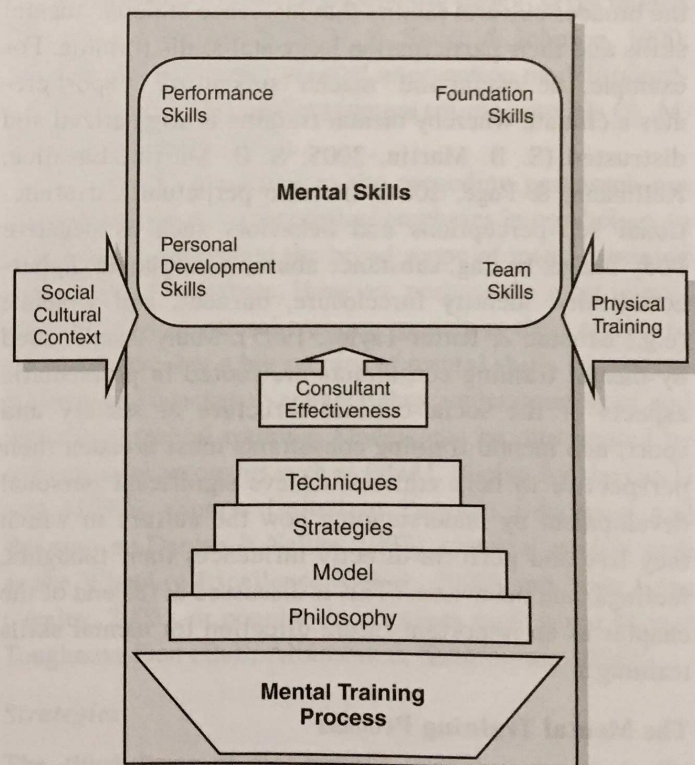
The mental skills model shown in Figure 13.1 is not meant to definitively identify and categorize mental skills

needed in sport. The point of the model is to clarify the objectives for mental training programs by emphasizing that mental skill foundations, personal development abilities, and team skills, along with performance skills, are key mental training targets for sport psychology consultants. As discussed in the next section, the mental training process includes many different approaches that consultants may adopt as they target specific mental skills or sets of skills for enhancement.

### A FRAMEWORK FOR UNDERSTANDING MENTAL SKILLS TRAINING IN SPORT

A framework for understanding mental skills training in sport is shown in Figure 13.2. The targets for mental training are foundation, performance, personal development, and team skills. The process of mental training includes the philosophy, model, strategies, and techniques that define the consultant's approach to enhancing mental skills. This process is mediated by the interpersonal and technical effectiveness of the consultant.

The two arrows on each side of the framework represent the influence of physical training and the social-cultural influences of sport and society on the mental



**Figure 13.2** A framework for understanding mental skills training in sport.

training process. Mental skills in athletes are obviously developed and enhanced through high-quality physical training regimens designed by innovative master coaches (e.g., Dorrance & Averbuch, 2002; Gould, Hodge, Peterson, & Giannini, 1989; Krzyzewski, 2000). However, many coaches need guidance and training to learn specific ways that they can integrate mental training into their physical training sessions with athletes (Gould, Damarjian, & Medbery, 1999), and the mental training literature should begin to address this important need (e.g., Vealey, 2005). In addition, mental training consultants must understand the specific physical training requirements for the athletes with whom they are working, and they must be able to readily and creatively integrate mental and physical training into one integrative process. Sinclair and Sinclair (1994) provide an excellent “mental management” model that embeds mental skills training in the process of learning physical skills, using the premise that mental skills are more easily taught, learned, and remembered if they are developed along with physical skills.

A critical point that needs much more attention by the field of sport psychology and mental training consultants is that the process of mental skills development and training occurs within a social-cultural context. This includes the unique subcultures of various types of sport, as well as the broader cultural factors that influence athletes' mental skills and their participation in mental skills training. For example, the insular and “macho” subculture of sport creates a climate whereby mental training is stigmatized and distrusted (S. B. Martin, 2005; S. B. Martin, Lavalley, Kellmann, & Page, 2004) and also perpetuates dysfunctional self-perceptions and behaviors such as negative body image, hazing, substance abuse, homophobia, hyperconformity, identity foreclosure, burnout, and violence (e.g., Brustad & Ritter-Taylor, 1997). Many issues faced by mental training consultants are rooted in problematic aspects of the social-cultural structure of society and sport, and mental training consultants must broaden their perspective to help athletes achieve significant personal development by understanding how the culture in which they live and perform directly influences their thoughts, feelings, and behaviors. (This is discussed at the end of the chapter as an important future direction for mental skills training.)

### The Mental Training Process

The mental training process shown at the bottom of Figure 13.2 is a complex, multilayer, integrative approach to

developing mental skills in athletes. Indeed, mental skill training has matured from early interventions that focused on the random application of mental training techniques, such as imagery and goal setting, to programmatic intervention models that utilize specific mental training strategies and techniques within a coherent guiding intervention model.

### Philosophy

The mental training process begins with the consultant's *philosophy*, or his or her set of ideas and beliefs about the nature of mental skills and mental training, usually including program objectives and the respective roles of the consultant, athlete, and coach in the process. Poczwadowski, Sherman, and Ravizza (2004) have conceptualized a hierarchical structure of professional philosophy for sport psychology service delivery, which is very similar to the hierarchical layers of the mental training process shown in Figure 13.2. Multiple examples of mental training consultant philosophies, and resulting mental training models, strategies, and techniques, were published in three special issues of the *Sport Psychologist* on delivering services to Olympic athletes (December 1989 issue), professional athletes (December 1990 issue), and special populations (December 1991 issue).

The main philosophical differences in mental skills training in sport have been educational versus clinical approaches, program-centered versus athlete-centered approaches, and performance enhancement versus personal development approaches. The educational approach is based on the philosophy that athletes possess the mental skills needed for success in sport, but that they often need assistance in optimizing these skills, systematically training them to hold up under increasing competitive pressure, and developing additional skills required to successfully navigate the competitive demands of sport (e.g., Danish, Petitpas, & Hale, 1995; Orlick, 2000; Ravizza & Hanson, 1994; Vealey, 2005). The clinical approach focuses on psychopathology or dysfunctional personality processes and behaviors, with the objective of providing remedial therapeutic assistance to athletes (Gardner & Moore, 2006; Marchant & Gibbs, 2004; Ward, Sandstedt, Cox, & Beck, 2005). Consultants embracing the clinical philosophy of remedial therapeutic assistance require training and licensure as psychologists.

Program-centered approaches to mental skills training use a preplanned sequence of intervention activities designed by the professional consultant; athlete-centered

approaches take a more interactive, needs-based approach to interventions. L. Hardy and Parfitt (1994) evaluated their participation in two philosophically different mental training programs. The first program used a program-centered prescriptive approach in which consultants served as the experts to formally assess athletes' mental skills and needs using inventories, interviews, and observation, and then provided written reports and tutorials to athletes and coaches, prescribing the mental training activities for athletes based on their individual profiles. The second program scrapped the "consultant as expert" formal prescriptive approach of assessment and reports and focused on the needs of athletes and coaches from their perspective. A key philosophical tenet of this athlete-centered approach was that the consultants, athletes, and coaches were all equal in terms of knowledge and expertise. Consultants focused on being available to meeting athletes' and coaches' needs when requested and responded to the valuable insights and experiences that athletes and coaches brought to the consulting relationship using a collaborative, problem-solving intervention philosophy.

L. Hardy and Parfitt (1994) admitted that the athlete-centered program was more difficult for them as consultants in that they had to serve in unforeseen and multiple roles, yet their effectiveness as consultants was evaluated more positively by athletes in the athlete-centered program. However, this is not to say that one philosophy is better than another, as intervention philosophies should be carefully developed with regard to program objectives, the social-cultural context, and consultant skills and training. Program-centered philosophical approaches that delineate pragmatic intervention models and user-friendly strategies should not be denigrated, because these canned programs provide specific and innovative ways that athletes and coaches can incorporate mental training into their lives without the direct involvement of a sport psychology consultant (e.g., Moore & Stevenson, 1994; Singer, 1988; Vealey, 2005).

The third philosophical issue in mental skills training is whether the objective of interventions should target performance enhancement or personal development in athletes. Clearly, these two objectives are not mutually exclusive and are often noted as important companion objectives of mental skills training (e.g., P. S. Miller & Kerr, 2002; Vealey, 1988, 2005; J. M. Williams, 2006). Research examining the effectiveness of mental skills training is slowly moving beyond performance as the only outcome of interest to examine intervention effects on

other important outcomes such as successful life transition (Lavalley, 2005), the quality of sport experiences (Lindsay, Maynard, & Thomas, 2005; Newburg et al., 2002), life skills (Danish & Nellen, 1997), and sociomoral growth of children (S. C. Miller, Bredemeier, & Shields, 1997).

### Model

The second layer in the mental training process, emanating from philosophy, is one's *model* of intervention, or the overarching thematic framework from which specific mental training strategies and techniques are developed and utilized. The mental skills training literature abounds with the description of many models of intervention. These include systems models for team, organizational, and family interventions (Hellstedt, 1995; Zimmerman, Protinsky, & Zimmerman, 1994), self-regulatory or cognitive-behavioral models (Boutcher & Rotella, 1987; Hanin, 2000; Kirschenbaum & Wittrock, 1984; Moore & Stevenson, 1994; Singer, 1988), behavioral management models (G. L. Martin & Toogood, 1997; S. B. Martin, Thompson, & McKnight, 1998; Tkachuk, Leslie-Toogood, & Martin, 2003), educational mental skills models (Orlick, 2000; Vealey, 1988, 2005), developmental models (Danish & Hale, 1981; Danish & Nellen, 1997; Danish et al., 1992; M. Greenspan & Andersen, 1995; Weiss, 1995), sport-specific mental skills models (Ravizza & Hanson, 1994; R. E. Smith & Johnson, 1990; Thomas & Over, 1994), clinical intervention models (Gardner & Moore, 2004), and perceptual training models (A. M. Williams & Ward, 2003).

The models identified in the preceding paragraph are categorized based on theoretical emphases in psychology to help readers appreciate the broad scope of mental training models in the literature. However, perhaps the most important function of mental training models is their ability to creatively present a big picture of mental skills training to athletes and coaches to enhance their understanding of and interest in mental training. Models can be represented by motivational acronyms such as GOAL (Going for the Goal) and SUPER (Sports United to Promote Education and Recreation; Danish & Nellen, 1997), pictorial models such as the Wheel of Excellence (Orlick, 2000) and Inner Edge (Vealey, 2005), or popular descriptions such as the Mental Toughness Plan (Bull, Albinson, & Shambrook, 1996).

### Strategies

The third layer of the mental training process is the strategies that logically emanate from one's intervention

philosophy and model. These are the organizational plans of action that operationalize how the intervention specifically works, typically using sequential steps, multiple phases, or the practical packaging of mental training techniques into a coherent, integrative program. Example strategies in the mental skills training literature include the Five-Step Strategy (Singer, 1988), the four-phase psychological skill program for close-skill performance enhancement (Boutcher & Rotella, 1987), P<sup>3</sup> Thinking and goal mapping (Vealey, 2005), centering (Nideffer & Sagal, 2006), competition focus plans (Orlick, 1986), the five-step approach to mental training using biofeedback (Blumenstein, Bar-Eli, & Tenenbaum, 2002), and visuo-motor behavioral rehearsal (Suinn, 1993). Assessment strategies are an important part of this layer of the mental training process, as consultants decide how and when to assess the mental skill training needs of athletes (Vealey & Garner-Holman, 1998). The overall assessment strategy then leads to the use of specific assessment techniques, such as observation, interviews, questionnaires, and psychophysiological measures. Although the majority of AAASP-certified consultants use some type of written survey in mental training with athletes (O'Connor, 2004), these instruments are used sparingly, and interviews and observations are used most frequently to assess athletes (Vealey & Garner-Holman, 1998).

### Techniques

The final layer of the mental training process is the techniques, or specific procedures or methods used in a mental training strategy. These methods are the familiar tools known to all mental training consultants, including imagery, relaxation, goal setting, self-talk, biofeedback training, performance profiling, and behavior management techniques. The traditional four mental training techniques of imagery, goal setting, thought management, and physical relaxation/arousal regulation have been most widely used by consultants (Gould, Murphy, Tammien, & May, 1991; Sullivan & Nashman, 1998; Vealey, 1988), although other techniques, such as performance profiling (Jones, 1993), have emerged, and variations on the traditional four techniques have proliferated (Sullivan & Nashman, 1998). These specific techniques have been the focus of most of the intervention research in sport psychology, yet they represent only the final layer in the mental training process. Although it is important to test the effectiveness of specific mental training techniques, the field has matured to the point where future research and professional practice initiatives are needed to study how to most effectively utilize

specific techniques within particular strategies and models and as targeted toward specific mental skill development.

### Summary of the Mental Training Process

In summary, the mental training process is made up of layers that unfold as part of a comprehensive mental training approach. Mental skills training starts with the philosophical foundations embraced and valued by the consultant, and then unfolds into the conceptualization of an intervention model with appropriate and useful strategies and techniques. There are many ways to conceptualize the multilayer mental training process (e.g., Poczwadowski et al., 2004), but what is important is that it involves a comprehensive process as opposed to starting at the bottom and simply applying mental training techniques without an overall framework to guide the intervention. Examples of layers of the mental training process from four approaches are presented in Table 13.1, with each program moving from a broad philosophy and model to strategies that incorporate many different types of specific mental training techniques in unique ways.

### Consultant Effectiveness

Athletes and coaches often use mental training strategies and techniques on their own without the use of a mental training consultant. However, when mental training is coordinated by consultants, the interpersonal and technical skills of the consultants are critical in the effectiveness of the mental training process (as shown in Figure 13.2). Research has shown that athletes and coaches rate interpersonal skills, particularly listening skills, being able to relate to athletes and coaches, and being open, flexible, and trustworthy, as consultant characteristics critical for success (Dunn & Holt, 2003; Gould et al., 1991; Orlick & Partington, 1987; Partington & Orlick, 1987). A study of the verbal interactions between an eminent mental training consultant and athletes found that the consultant spent over 60% of the time listening and facilitating the interactions so that athletes would spend the majority of the time expressing themselves (Lloyd & Trudel, 1999).

Technical competence displayed by effective mental training consultants includes the ability to relevantly apply concepts to create concrete, useful strategies for athletes and coaches, the ability to adapt mental training strategies and techniques to fit specific personalities and situations, understanding competitive demands and timing of services in relation to competition preparation, and serving as facilitators to enhance communication and help resolve conflict within teams (Orlick & Partington, 1987; Partington &



Table 13.1 Examples of the Mental Skills Training Process

Authors	Philosophy	Model	Strategies	Techniques
Vealey, 2005	Help athletes attain optimal development, experiences, and performance; coaches serve as educational mental trainers.	Getting the Inner Edge, foundations to mental training toolbox to big three mental skills.	P <sup>3</sup> Thinking Goal Mapping Energy Management Special Recipes sample programs.	Self-monitoring, thought-stopping self-talk, imagery, physical relaxation, goal setting, behavior management.
Martin, Thompson, and McKnight, 1998	Goal is to teach athletes to teach/manage themselves; focus is on education and mental health (not illness).	Integrative psychoeducational approach; combines reality therapy and behavioral counseling.	Problem-focused process: 1. Identify problem category. 2. Identify problem type. 3. Determine problem cause. 4. Select problem solution.	Goal setting, goal attainment scaling, self-management plans, self-talk.
Danish & Nellen, 1997; Danish, Petitpas, and Hale, 1992	Optimization, not remediation; teacher/skill trainer, not therapist; problems as imbalances that precede personal growth; developmental-educational focus.	Live development intervention; life skills, GOAL (Going for the Goal), SUPER (Sports United to Promote Education and Recreation).	Ten 1-hour skill-based workshops, peer teaching and modeling, STAR (stop and chill out, think of choices, anticipate consequences of choices, respond effectively).	Goal setting, skits for mastery modeling, imagery, self-talk, physical relaxation, behavior management.
Singer, 1988	Direct instruction of mental strategies can enhance learning and performance by activating appropriate cognitive processes.	Information-processing metastrategy for self-paced sport skills.	Five-step strategy: 1. Readyng. 2. Imaging. 3. Focusing. 4. Executing. 5. Evaluating.	Self-talk, imagery, focus plans, centering, physical relaxation.

Orlick, 1987; Tod & Andersen, 2005). Overall, effective mental training requires interpersonally and technically skilled consultants who are able to personally and professionally fit mental training programs to meet the special needs of athletes, coaches, teams, and organizations.

### EFFECTIVENESS AND USE OF MENTAL SKILLS TRAINING IN SPORT

How effective is mental training in sport? Comprehensive reviews of the mental training literature have supported the effectiveness of mental training in enhancing the performance of athletes (M. J. Greenspan & Feltz, 1989; Meyers et al., 1996; Vealey, 1994). These reviews examined published research reports using either group or single-subject research designs. In these early reviews, the needs for appropriate controls, manipulation checks, maintenance data, and specific descriptions of interventional mental training research conducted today is more sophisticated as a result of these previous review articles.

Another question related to mental skills training is how much athletes and coaches use mental training strategies

and techniques. Research indicates that successful elite athletes (Durand-Bush & Salmela, 2002; Gould, Eklund, et al., 1993; Gould, Finch, et al., 1993) and coaches (Bloom et al., 1997) use mental training techniques and strategies to help them achieve success in sport. However, Heishman and Bunker (1989) found that although 81% of elite athletes from various countries rated mental preparation as very important, only 44% made frequent use of mental preparation strategies and techniques. In addition, athletes tend to use mental training techniques more in competition than in practice (Frey, Laguna, & Ravizza, 2003). Overall, this research indicates that athletes believe in the efficacy of mental training, but most fail to use it systematically as part of their physical training regimen.

Several personal characteristics have been shown to influence the use of mental training by athletes. Obviously, self-motivation is a big factor in predicting adherence to mental training (Bull, 1991), and type of motivation influences use of mental training as well. Harwood, Cumming, and Fletcher (2004) found that high task/moderate ego-oriented athletes (in terms of achievement goal orientations) used more imagery, goal setting, and positive self-talk as compared to low task/high ego- and moderate

task/low ego-oriented athletes. This research indicates that athletes who define success as mastering skills and improving incorporate mental training as part of their skill development more than athletes who focus more on comparison with others. Mental training is also used to a greater degree by international-caliber athletes as compared to national-caliber athletes (Calmels et al., 2003). International-caliber athletes used a wider range and more elaborate and complex mental strategies and techniques than national-caliber athletes. But interestingly, the national-caliber athletes who engaged in mental skills training with consultants developed and used strategies as complex as the international-caliber athletes. Research has substantiated that mental training programs increase the importance that athletes place on using mental training techniques and strategies, as well as their intentions to use these techniques and strategies (Brewer & Shillinglaw, 1992; Gould, Petlichkoff, Hodge, & Simons, 1990; Grove, Norton, Van Raalte, & Brewer, 1999).

### Effectiveness and Use of Imagery in Mental Training

Imagery, or the mental creation or re-creation of sensory experiences in the mind, is the most popular mental training technique used by athletes as well as the most widely studied technique in the mental training literature (Morris et al., 2005). Of 235 Canadian athletes who participated in the 1984 Olympic Games, 99% reported using imagery (Orlick & Partington, 1988). These athletes estimated that during training they engaged in systematic imagery at least once a day, 4 days per week, for about 12 minutes each time. At the Olympic site, some reported engaging in imagery for 2 to 3 hours in preparation for their events. Coaches have indicated that they use imagery more than any other mental training technique and felt that imagery was the most useful technique that they used with their athletes (Bloom et al., 1997; Hall & Rodgers, 1989). Overall, more successful elite athletes use imagery more extensively and more systematically and have better imagery skill than less successful athletes (Calmels et al., 2003; Cumming & Hall, 2002; Hall, Rodgers, & Barr, 1990; Salmon, Hall, & Haslam, 1994). All athletes have the potential to increase their imagery abilities through systematic practice (Evans, Jones, & Mullen, 2004; Orlick & Partington, 1988; Rodgers, Hall, & Buckolz, 1991), with increases in imagery ability enhancing the effectiveness of imagery training (Isaac, 1992).

Athletes use imagery for many different reasons, including skill learning and practice, strategy development and

rehearsal, competition preparation, including familiarization with venues and mental warm-ups, mental skill development and refinement, and coping with various sport stressors or obstacles, such as injuries, heavy training, and distractions (Morris et al., 2005; White & Hardy, 1998). An important consideration in using imagery is the imagery perspective (internal or external) adopted by athletes, although research has shown that performance may be enhanced using either perspective. Research on this topic indicates that the type of task athletes are engaging in should dictate the imagery perspective that will best facilitate the effectiveness of imagery on enhancing performance (e.g., L. Hardy & Callow, 1999).

Imagery training is effective in enhancing athletes' performance on sport skills (Feltz & Landers, 1983; K. A. Martin et al., 1999; Morris et al., 2005). Often termed "mental practice," this involves practicing imagery over a period of time in an intermittent learning style similar to a distributed physical practice schedule. Research has also shown that preparatory imagery, or using imagery immediately before performance, can improve performance on strength tasks, muscular endurance tasks, and golf putting (Vealey & Greenleaf, 2006). Imagery has been shown to be effective in enhancing self-confidence (Callow, Hardy, & Hall, 2001; Evans et al., 2004; Garza & Feltz, 1998; Hale & Whitehouse, 1998; McKenzie & Howe, 1997; Short et al., 2002), motivation (K. A. Martin & Hall, 1995), attentional control (Calmels, Berthoumieux, & d'Arripe-Longueville, 2004), and visual search abilities (Jordet, 2005) of athletes during competition. Specific types of imagery were effective in changing athletes' perceptions of anxiety from harmful and negative to facilitative and challenging (Evans et al., 2004; Hale & Whitehouse, 1998; Page, Sime, & Nordell, 1999).

Explanations for how imagery facilitates the performance and self-perceptions of athletes include cognitive, psychological state, and neurophysiological explanations (Morris et al., 2005). Cognitive explanations focus on information processing and how information is acquired, stored, retrieved, and used in the brain. Bioinformational theory has been a popular cognitive theoretical explanation for how imagery enhances sport performance, due to its intuitive appeal and pragmatic implications for using imagery to create "mental blueprints for perfect responses" (Vealey, 2005). Athlete performance has been improved to a greater degree through imagery that emphasizes productive responses, as opposed to imagery that focuses just on stimulus characteristics of the situation (D. Smith & Collins, 2004; D. Smith, Holmes, Whitemore, Collins, &

Devenport, 2001). Also, response-oriented imagery has created more "priming" responses in the brain, as measured by electroencephalographic activity when compared to stimulus-oriented imagery (D. Smith & Collins, 2004).

Psychological state explanations focus on the motivational function of imagery, in helping athletes feel more confident, optimally aroused, and clearly focused for competition. Neurophysiological explanations focus on the premise of functional equivalence, meaning that imagery and actual movement recruit common structures and processes in the brain, with the only difference being that during imagery the performance skill is not executed (Finke, 1980; Holmes & Collins, 2001; Jeannerod, 1994). In an imagery training program designed to improve golf putting, performance was enhanced more by mental practice using audiotapes and videotapes than by mental practice using written scripts that were read by the golfers (D. Smith & Holmes, 2004). The interpretation of this finding was that imagery training using the audio- and videotapes engaged more functionally equivalent neural processes in relation to the actual execution of putting as compared to written scripts.

Imagery is a technique that is incorporated into many different mental training strategies and models. These include the applied model of imagery use in sport (K. A. Martin et al., 1999; Paivio, 1985), the PETTLEP model (Holmes & Collins, 2001), the three-level model of sport imagery (S. M. Murphy & Martin, 2002), and the sport imagery ability model (Watt, Morris, & Andersen, 2004). Specific mental training strategies incorporating imagery include visuomotor behavior rehearsal (Suinn, 1984), the Five-Step Strategy (Singer, 1988), and the AIM strategy (Korn, 1994). Because the technique of imagery has been shown to effectively enhance performance, research efforts should begin to examine how effective imagery is for athletes as packaged in different ways using specific strategies or models of intervention.

### Effectiveness and Use of Goal Setting in Mental Training

Another technique popularly used in mental training interventions is goal setting. Research with elite, collegiate, and adolescent athletes has confirmed that almost all athletes set goals, but most of them rate goals as only moderately effective in enhancing their performance (Burton, Weinberg, Yukelson, & Weigand, 1998; Weinberg, Burke, & Jackson, 1997; Weinberg, Burton, Yukelson, & Weigand, 1993, 2000). This finding emphasizes the important point that goals by themselves do nothing to enhance athletes'

performance. A goal is simply a target, or a specific standard or accomplishment that one strives to attain. Goals must be incorporated into a systematic mental training program that enables athletes to plan, set, focus on, evaluate, and manage their behavior and thoughts in relation to their goals (Burton, 1989; Burton, Naylor, & Holliday, 2001; Gould, 2006; Vealey, 2005). When used systematically, goal setting works because it focuses attention on specific task demands, increases effort and intensity, encourages persistence when adversity is encountered, and promotes the development of strategies and problem solving to move toward goal achievement (Locke & Latham, 1990).

When compared to no goals or do-your-best goals, specific goal setting enhances athletes' performance (Burton & Naylor, 2002; Kylo & Landers, 1995). Besides examining the overall effectiveness of goal setting, research has also examined what types of goals are most effective in what types of situations. The important distinction between outcome, performance, and process goals indicates that mental skills are enhanced when athletes focus on the right goals at the right time (Kingston & Hardy, 1997). Because outcome goals are uncontrollable, yet attractive and exciting, they are useful in enhancing motivation for the exhausting physical and mental preparation needed to achieve typical outcomes goals, such as winning championships or medals. Performance goals are more flexible and controllable for athletes, which allows them to continually raise and lower goal difficulty levels to remain challenged and successful in their pursuit of exciting outcome goals. Process goals are used in immediate situations to enable athletes to focus on specific task demands in productive ways, such as occupying their minds with key verbal cues that lock in optimal performance images and plans. This distinction in goal focus should be an important part of any intervention that uses goal setting as a mental training technique. Other attributes of effective goal setting are the use of specific, difficult, and measurable goals, an emphasis on desired behavioral outcomes as opposed to a focus on problem statements, the use of short- and long-term goals, and a congruency between individual and team goals (Burton et al., 2001).

The technique of goal setting has been incorporated into several intervention models for sport. Burton and colleagues (2001) devised a seven-phase model from which goal setting may be implemented with athletes. These steps include setting goals, identifying obstacles, securing a commitment, developing an action plan, gaining feedback on goal attainment, evaluating goal attainment, and reinforcing goal attainment. Vealey (2005) has proposed a four-phase model

of goal mapping, defined as a systematic approach to acting and thinking in purposeful ways to achieve specific accomplishments and personal fulfillment. Personal and team goal maps are developed that include milestone, challenge, and focus goals, as well as goal achievement strategies and a progress log. Gould (2006) offers a three-phase goal-setting system for coaches, including planning, meeting, and follow-up/evaluation phases. Goal setting is a primary technique used with the life development intervention model and Going for the Goal strategy (Danish & Nellen, 1997), which includes such phases as setting goals, making your goal reachable, making a goal ladder, roadblocks to reaching goals, overcoming roadblocks, and rebounds and rewards. Again, as shown in Figure 13.2, research should begin to examine the effectiveness of comprehensive mental training programs that incorporate various mental training techniques, as opposed to simply studying the effectiveness of one isolated technique on athletes' performance. For example, a life development intervention was shown to be effective in enhancing the career transition adjustment for recently retired professional soccer players (Lavalley, 2005).

### Effectiveness and Use of Self-Talk in Mental Training

A third mental training technique studied in sport psychology is self-talk, or the verbal dialogue in which athletes interpret their feelings and perceptions, evaluate themselves, and give themselves instructions or reinforcement (Hackfort & Schwenkmezger, 1993). Eighty percent of U.S. Olympic wrestlers used thought management strategies such as positive thinking, coping thoughts, blocking distractions, and perspective taking (Gould, Eklund, et al., 1993), and rational thinking and self-talk were two common coping strategies used by U.S. national champion figure skaters (Gould, Finch, et al., 1993). Highly skilled athletes use self-talk in a more planned and consistent manner than less skilled athletes, who tend to think reactively (J. Hardy, Hall, & Hardy, 2004; McPherson, 2000).

Researchers have found that planned self-talk enhances skill acquisition and performance in sport (J. Hardy, Gamme, & Hall, 2001; Johnson, Hrycaiko, Johnson, & Halas, 2004; Landin & Hebert, 1999; A. Miller & Donohue, 2003; Ming & Martin, 1996; Perkos, Theodorakis, & Chroni, 2002; Rushall, Hall, Roux, Sasseville, & Rushall, 1988; Wrisberg & Anshel, 1997). Research indicates that different types of self-talk (e.g., instructional versus motivational) may be effective in enhancing different types of sport performance (e.g., precision versus power tasks); thus,

future research should pursue the specificity or matching of type of self-talk with type of task (Hatzigeorgiadis, Theodorakis, & Zourbanos, 2004).

Planned, productive self-talk is also effective for using strategy, psyching up for emotion and effort, relaxation and calming down, attentional focusing, maintaining confidence, and self-evaluation/self-reinforcement (e.g., J. Hardy et al., 2001; Landin & Hebert, 1999; Mallett & Hanrahan, 1997; Zinsser, Bunker, & Williams, 2006). Several other mental training techniques are associated with self-talk, including thought stopping, thought replacement, countering, reframing, and cognitive restructuring (e.g., Zinsser et al., 2006). Many of these techniques are used in multimodal mental training interventions or in specific mental training strategies such as P<sup>3</sup> Thinking (Vealey, 2005), rational-emotive education (Elko & Ostrow, 1991), and energy management (Hanton & Jones, 1999).

### Effectiveness and Use of Physical Relaxation Techniques in Mental Training

Because the stressors inherent in sport often create physical tension in athletes, physical relaxation techniques may be useful to help athletes manage their physical energy levels to allow them to perform their best. Research concurs that successful elite athletes regularly use relaxation techniques to manage their physical energy (Durand-Bush & Salmela, 2002; Gould, Eklund, et al., 1993; Gould, Finch, et al., 1993). Most mental training programs incorporate relaxation as one of several techniques within a multimodal approach; thus, it is difficult to ascertain the specific effectiveness of physical relaxation as a mental training technique.

Research has been directed to test the "matching hypothesis" from multidimensional anxiety theory that suggests that effective anxiety management requires a match between the type of intervention strategy/technique used and the type of anxiety experienced by the athletes (cognitive or somatic). Physical relaxation strategies specifically targeted for athletes experiencing somatic anxiety were more effective than cognitive relaxation strategies in reducing this type of anxiety (Maynard & Cotton, 1993; Maynard, Hemmings, & Warwick-Evans, 1995; Maynard, MacDonald, & Warwick-Evans, 1997), although the physical relaxation intervention did not enhance the athletes' performance. Annesi (1998) developed a specific precompetitive anxiety regulation intervention for elite tennis players based on the individual zones of optimal functioning model. Physical and cognitive energy management strategies were used to help athletes

remain within their individual optimal zones, which served to enhance their performance. The technique of flotation REST (restricted environmental stimulation technique) has been shown to be effective in reducing muscle tension and perceived exertion and enhancing performance on fine motor tasks (Norlander, Bergman, & Archer, 1999; Suedfeld, Collier, & Hartnett, 1993). Flotation REST involves athletes immersing themselves in a water tank filled with saltwater of an extremely high salt concentration, with the objective of inducing a deep state of relaxation by reducing external stimuli and preserving warmth.

### Effectiveness of Multimodal Mental Skills Training

A plethora of research studies have examined the effects of multimodal mental training interventions on athletes' performance and mental skills. Multimodal interventions combine several mental training techniques into an integrated strategy that targets specific psychobehavioral outcomes of interest, such as performance improvement or mental skill enhancement. Multimodal interventions have enhanced athletes' attentional focus (Kerr & Leith, 1993), self-confidence (Prapavessis, Grove, McNair, & Cable, 1992; Savoy, 1997), motivation (Beauchamp, Halliwell, Fournier, & Koestner, 1996; Holm, Beckwith, Ehde, & Tinius, 1996), energy management (Crocker, Alderman, & Smith, 1988; Hanton & Jones, 1999; Holm et al., 1996; Kerr & Goss, 1996; Kerr & Leith, 1993; Kirschenbaum, Owens, & O'Connor, 1998; Mamassis & Doganis, 2004; Prapavessis et al., 1992; Savoy, 1993, 1997; Thomas & Fogarty, 1997), anger management (Brunelle, Janelle, & Tennant, 1999), productive thinking (Crocker et al., 1988; Kirschenbaum et al., 1998), and performance (Bakker & Kayser, 1994; Beauchamp et al., 1996; Daw & Burton, 1994; Gros Lambert, Candau, Grappe, Dugue, & Rouillon, 2003; Hanton & Jones, 1999; Kendall, Hrycaiko, Martin, & Kendall, 1990; Kerr & Leith, 1993; Kirschenbaum et al., 1998; G. L. Martin & Toogood, 1997; Patrick & Hrycaiko, 1998; Prapavessis et al., 1992; Savoy, 1993, 1997; Thelwell & Greenlees, 2003; Thomas & Fogarty, 1997; Wrisberg & Anshel, 1989; Zhang, Ma, Orlick, & Zitzelsberger, 1992).

Hypnosis, as a multimodal intervention strategy incorporating imagery, relaxation, and self-talk triggers, has been shown to be effective in enhancing basketball shooting performance (Pates, Cummings, & Maynard, 2002; Pates, Maynard, & Westbury, 2001) and golf putting (Pates, Oliver, & Maynard, 2001). Another multimodal intervention strategy is the use of biofeedback with other mental training techniques such as physical relaxation and

imagery. These strategies have been shown to enhance athletes' abilities to manage their physiological energy as well as to enhance performance (Blumenstein, Bar-Eli, & Tenenbaum, 1995; Landers et al., 1991; Petruzzello, Landers, & Salazar, 1991).

### SUGGESTIONS FOR THE FUTURE OF MENTAL SKILLS TRAINING IN SPORT

Despite significant advances and a growing knowledge base, mental skills training in sport must continue to evolve in socially significant ways. As discussed, mental training in sport must begin to address issues that arise with athletes and coaches due to their inclusion in a specific social-cultural context. Coakley (1992) has criticized mental training in sport as "psychodoping," or the use of mental training strategies and techniques that "dope" athletes into blindly accepting the social-structural conditions that negatively affect them. Coakley offers evidence for the overriding influence of the oppressive and controlling sport structure as a key causal factor in burnout in adolescent athletes. Interventions using a cultural praxis approach (Ryba & Wright, 2005) would help athletes understand their identities in problematic subcultures that spawn negative self-perceptions and unhealthy behaviors.

Brustad and Ritter-Taylor (1997) stated that the social-cultural context serves as the backdrop against which all thoughts, feelings, and behaviors of athletes and coaches take on meaning. They provide excellent suggestions that could enhance the social relevance of mental training by focusing on the underserved mental skills in athletes, such as identity development and achievement and self-awareness related to membership in specific subcultures, and team skills such as leadership processes and enhanced team functioning. As stated by mental training consultant Gloria Balague (1999, p. 89), "Regardless of the techniques (e.g., relaxation, imagery) I may be using in [mental training] work with athletes, understanding the larger issues of their identities and value systems and what sport and competition mean to them in their lives plays a central role in determining the quality and effectiveness of services that I deliver." Balague provides a provocative discussion about understanding the context within which athletes exist and the need to help athletes achieve balance within the problematic "imbalanced" world of elite sport. Philosophical counseling (Raabe, 2001), a fairly new approach that focuses on helping individuals come to a better philosophical understanding of themselves in relation to their personal context, seems to be a fruitful approach for mental training

consultants to consider when working with athletes in mental skills training in sport.

Although performance success will always be a primary outcome of interest for mental training interventions in sport, an expanded mental skills model was presented in this chapter (see Figure 13.1) to call attention to the need to focus on foundation, personal development, and team skills. The life skills model for mental training has been adopted to focus on the development of personal development skills in sport participants (Lavalley, 2005; Papacharisis, Goudas, Danish, & Theodorakis, 2005; Petitpas, Van Raalte, Cornelius, & Presbrey, 2004), and additional programs are emerging that focus on psychosocial development in young athletes (Petitpas, Cornelius, Van Raalte, & Jones, 2005). By broadening the focus of mental training to enhance important foundation and personal development skills, the social relevance and credibility of sport psychology will also be enhanced. Mental skills training will not simply be a sophist-oriented (Corlett, 1996), decontextualized intervention in sport, as defined by the professionalized performance by a small minority of elite athletes. Rather, mental skills training represents a broad spectrum of programs and interventions specifically targeted toward certain populations in certain contexts (e.g., college athletes, children entering organized sport programs, older adults involved in sport, at-risk youth athletes) that integrates mental and physical skill development for performance success and personal well-being.

Although cohesion is a popular research topic and team building is a popular intervention topic, the development of specific team skills has received very little attention in the mental training literature, with most of the focus on team building but without specific outcomes (e.g., team confidence, leadership, communication, cohesion) that could be targeted beyond the abstract notion of building a team. Two team intervention programs to enhance cohesion did not produce clear results (Cogan & Petrie, 1995; Prapavessis, Carron, & Spink, 1996), and additional research is needed on team interventions. A communication skills training program for interactive teams was evaluated positively by athletes (Sullivan, 1993), and other team interventions, such as using performance profiling (Dale & Wrisberg, 1996) and teaching assertiveness skills (Connelly & Rotella, 1991), have been reported. A special issue of the *Journal of Applied Sport Psychology* (March 1997) provided several examples of team building, yet research is needed to examine the effects of mental training interventions on specifically targeted team skills. Eccles and Tenenbaum (2004) provide a comprehensive conceptual framework for

team communication and coordination that could serve as a model for team interventions.

Another suggested direction for mental skills training is the development of models, approaches, and/or programs that address transitions, or key events representing significant change, for athletes and coaches. These may include mental skills models for entry into new sport structures (e.g., high school, college, professional sport), departure from sport such as retirement, role changes, and participation interruptions (e.g., injury, ineligibility, transfer; Danish, Owens, Green, & Brunelle, 1997), and life crisis events (Buchko, 2005; Vernacchia, Reardon, & Templin, 1997). Finally, technology should continue to be developed and utilized to enhance the delivery of mental skills training to athletes and coaches. Current approaches include Internet Web-based interventions (Farres & Stodel, 2003; Zizzi & Perna, 2002) and innovative uses of video technology (Ives, Straub, & Shelley, 2002; Omodei, McClennan, & Whitford, 1998). Technological advancements seem particularly important for the future of perceptual training of athletes, where the transfer of positive training effects from laboratory settings to the field has been problematic (Jordet, 2005; Singer et al., 1994; A. M. Williams & Grant, 1999; A. M. Williams, Ward, & Chapman, 2003).

## CONCLUSION

Mental training in sport has significantly evolved in the past 30 years as the knowledge base has expanded with a plethora of books describing the practice of mental training as well as journal articles focusing on mental skills, mental training interventions, and professional practice issues. Overall, mental training has been found to be effective in enhancing the performance success and mental skills in athletes. The external validity of intervention research has been enhanced by focusing on behavior in competitive contexts, using athlete-centered approaches in which mental training is individualized based on the needs and abilities of athletes and utilizing idiographic designs to assess intervention effects with individual athletes. Multiple models and programs are available in the literature to help athletes, coaches, and consultants integrate mental and physical training in specific sport environments in creative and user-friendly ways. Professional development resources are available for mental training consultants to enhance their interpersonal and technical skills and to increase their awareness of and commitment to ethical practice.

A mental skills model and a mental skills training framework were presented in this chapter to provide an

organizational structure within which the literature on mental skills training in sport was reviewed. Of course, additional models and frameworks may be developed, but the intent has been to stimulate critical thinking about this important service delivery component of sport psychology. The evolution of mental skills training in the past 30 years is impressive, as the knowledge base has grown and mental training practice has become more sophisticated. However, greater sophistication means greater complexity; thus, the challenge remains for sport psychology professionals to continue to creatively grow mental skills training in productive and socially relevant new directions.

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ISBN 978-0-471-72611-4  
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