1

Welcome to Sport and Exercise Psychology

After reading this chapter, you should be able to

1. describe what sport and exercise psychology is,
2. understand what sport and exercise psychology specialists do,
3. know what training is required of a sport and exercise psychologist, and
4. understand major developments in the history of sport and exercise psychology.

Julio, the point guard on the high school basketball team, becomes overly nervous in competition. The more critical the situation, the more nervous he becomes and the worse he plays. Your biggest coaching challenge this season will be helping Julio learn to manage stress.

Beth, fitness director for the St. Peter's Hospital Cardiac Rehabilitation Center, runs an aerobic fitness program for recovering patients. She is concerned, however, because some clients don't stick with their exercise programs after they start feeling better.

Kimly majors in kinesiology and knows she wants to pursue some type of health-related career, such as going to graduate school and becoming an orthopedic doctor, physician's assistant, or physical therapist. Although she loves the biological sciences, she wonders what role psychological factors play in preventive medicine, especially as they relate to holistic wellness and using physical activity as medicine.

Patty is the head athletic trainer at Campbell State College. The school's star running back, Tyler Peete, has achieved a 99% physical recovery from knee surgery. The coaches notice, however, that in practices he still favors his formerly injured knee and is hesitant when making cutbacks. Patty knows that Tyler is physically recovered but that he needs to regain his confidence.

Kareem, a sport psychologist and longtime baseball fan, just heard that he has a shot at his dream position as a consultant. The owners of the Chicago Cubs, fed up with the team's lack of cohesion, have asked him to quickly design a training program in psychological skills. If Kareem can construct a strong program in the next week, he will be hired as the team's sport psychology consultant.

If you become a coach, an exercise leader, a health care provider, a physical educator, an athletic trainer, or even a sport psychologist, you also will encounter the kinds of situations that Julio, Beth, Kimly, Patty, and Kareem face. Sport and exercise psychology offers a resource for solving such problems and many other practical concerns. In this chapter you will be introduced to this exciting area of study and will learn how sport and exercise psychology can help you solve practical problems.

Defining Sport and Exercise Psychology

Sport and exercise psychology is the scientific study of people and their behaviors in sport and exercise contexts and the practical application of that knowledge (Gill, Williams, & Reifsteck, 2017). Sport and exercise psychologists identify principles and guidelines that professionals can use to help adults and children participate in and benefit from sport and exercise activities. They do this by examining the ABCs of psychology: affect (one's feelings), behavior (one's actions), and cognitions (one's thoughts) within a dynamic and an ever-changing environment (Gill et al., 2017).

Key Point

Sport and exercise psychology is the scientific study of people and their behaviors in sport and exercise activities and the practical application of that knowledge.

Most people study sport and exercise psychology with two objectives in mind:

1. To understand how psychological factors affect an individual's physical performance
2. To understand how participation in sport and exercise affects a person's psychological development, health, and well-being

They pursue this study by asking the following kinds of questions:

Objective A: understand the effects of psychological factors on physical or motor performance

- How does anxiety affect a basketball player's accuracy in free-throw shooting?
- Does lacking self-confidence influence a child's ability to learn to swim?
- How does a coach's reinforcement and punishment influence a team's cohesion?
- Does imagery training facilitate recovery in injured athletes and exercisers?
- How does a health care provider's communication style influence a patient's adherence to the home rehabilitation exercise schedule and recovery?

Objective B: understand the effects of physical activity participation on psychological development, health, and well-being

- Does running reduce anxiety and depression?
- Do young athletes learn to be overly aggressive from participating in youth sports?
- Does participation in daily physical education classes improve a child's self-esteem?
- Does participation in college athletics enhance personality development?
- Does physical therapy influence a wounded warrior's physical health as well as help him or her create a more optimistic view of the future?

Sport psychology applies to a broad population base. Although some professionals use sport psychology to help elite athletes achieve peak performance, many other sport psychologists are concerned more with children, people who have physical or mental disabilities, seniors, and recreational participants. More and more sport psychologists have focused on the psychological factors involved in exercise and health, developing strategies for encouraging sedentary people to exercise or assessing the effectiveness of exercise as a treatment for depression. To reflect this broadening of interests, the field is now called sport and exercise psychology. Some individuals focus only on the exercise- and health-related aspects of the field.

Key Point

Sport and exercise psychologists seek to understand and help elite athletes, children, people with physical or mental disabilities, seniors, and recreational participants achieve maximum participation, peak performance, personal satisfaction, and development through participation.

Activity 1.1 helps you understand the objectives of sport and exercise psychology.

Specializing in Sport Psychology

Contemporary sport psychologists pursue a variety of careers. They serve three primary roles in their professional activities:

1. Conducting research
2. Teaching
3. Consulting

Research Role

A primary function of participants in any scholarly field is to advance the knowledge in the field by conducting research. Most sport and exercise psychologists in a university conduct research. They might, for example, study what motivates children to be involved in youth sport, how imagery influences proficiency in golf putting, how running for 20 minutes four times a week affects an exerciser's anxiety levels, or what the relationship is between movement education and self-concept among elementary physical education students. Today, sport and exercise psychologists are members of multidisciplinary research teams that study problems such as exercise adherence, the psychology of athletic injuries, how combat athletes (soldiers) can improve performance, and the role of exercise in the treatment of HIV. Sport psychologists then share their findings with colleagues and participants in the field. This sharing produces advances, discussion, and healthy debate at professional meetings and in journals (see "Leading Sport and Exercise Psychology Organizations and Journals").

Activity 1.2 lets you learn more about sport and exercise psychology associations.

Teaching Role

Many sport and exercise psychology specialists teach university courses such as exercise and health psychology, applied sport psychology, and the social psychology of sport. These specialists may also teach courses such as personality psychology or developmental psychology if they work in a psychology department, or courses such as motor learning and control or sport sociology if they work in a kinesiology or sport science program.

Consulting Role

A third role is consulting with individual athletes or athletic teams to develop psychological skills for enhancing competitive performance and training. Olympic committees and some major universities employ full-time sport psychology consultants, and hundreds of other teams and athletes use consultants on a part-time basis for psychological skills training. Some sport psychologists now work with the military to help prepare troops for peak performance, and others work with surgeons to help them perfect their surgical skills. Many sport psychology consultants work with coaches through clinics and workshops.

Some sport and exercise psychologists now work in the fitness industry, designing exercise programs that maximize participation and promote psychological and physical well-being. Some consultants work as adjuncts to support a sports medicine or physical therapy clinic, providing psychological services to injured athletes.

Distinguishing Between Two Specialties

In contemporary sport psychology, a significant distinction exists between two types of specialties: clinical sport psychology and educational sport psychology.

- **Clinical sport psychologists** have extensive training in psychology, so they can detect and treat individuals with emotional disorders (e.g., severe depression, suicidal tendencies). Clinical sport psychologists are licensed by state boards to treat individuals with emotional disorders and have received additional training in sport and exercise psychology and the sport sciences. Clinical sport psychologists are needed because, just as in the population at large, some athletes and exercisers develop severe emotional disorders and require special treatment (Brewer & Petrie, 2014; Proctor & Boan-Lenzo, 2010). Eating disorders and substance abuse are two areas in which a clinical sport psychologist can often help sport and exercise participants.

- **Educational sport psychology specialists** have extensive training in sport and exercise science, physical education, and kinesiology, and they understand the psychology of human movement, particularly as it relates to sport and exercise contexts. These specialists often have taken advanced graduate training in psychology and counseling. They are not trained to treat individuals with emotional disorders, nor are they licensed psychologists.

A good way to think of an educational sport psychology specialist is as a "mental coach" who, through group and individual sessions, educates athletes and exercisers about psychological skills and their development. Anxiety management, confidence development, and improved communication are some of the areas that educational sport psychology specialists address. When an educational sport psychology consultant encounters an athlete with an emotional disorder, he or she refers

Leading Sport and Exercise Psychology Organizations and Journals

Organizations

- *Association for Applied Sport Psychology (AASP)*—The sole purpose of this organization is to promote research and practice in applied sport and exercise psychology.
- *American Psychological Association (APA) Division 47—Exercise and Sport Psychology*—One of almost 50 divisions in the APA (the largest professional psychology organization in the United States), this organization emphasizes both research and practice in sport and exercise psychology.
- *European Federation of Sport Psychology (FEPSAC)*—Begun in 1968, this organization promotes scientific, educational, and professional efforts in Europe.
- *International Society of Sport Psychology (ISSP)*—Begun in 1965, this organization is devoted to promoting research, practice, and the development of sport and exercise psychology throughout the world.
- *North American Society for the Psychology of Sport and Physical Activity (NASPSPA)*—One of the oldest organizations focusing on the psychological aspects of sport and physical activity, this organization focuses on research in motor development, motor learning and control, and social psychology and physical activity.
- *Societe Canadienne d'Apprentissage Psychomoteur et de Psychologie du Sport (SCAPPS)* or *Canadian Society for Psychomotor Learning and Sport Psychology* in English—This organization encourages the exchange of ideas and scientific knowledge related to psychomotor learning and sport psychology and promotes the field in Canada.

Journals

- *Case Studies in Sport and Exercise Psychology*—Begun in 2017, this journal provides detailed case study accounts of the approaches adopted and experience gained by professionals in the field.
- *International Journal of Sport & Exercise Psychology*—This is the official journal of the International Society of Sport Psychology. It is aimed at enhancing theoretical and practical knowledge in the science of physical activity, exercise, and sport.
- *International Journal of Sport Psychology*—Begun in 1970, this journal publishes manuscripts related to psychology of human movement including articles on sport psychology, exercise psychology and sport pedagogy.
- *International Review of Sport and Exercise Psychology*—This journal publishes critical reviews of the research literature in sport and exercise psychology.
- *Journal of Applied Sport Psychology*—Begun in 1989, this is the official journal of the AASP. It publishes applied sport psychology research and professional practice articles.
- *Journal of Clinical Sport Psychology*—This journal, begun in 2007, is designed to promote an understanding of theory, technique, and scientific findings focused on the integrated practice of clinical, counseling, and sport psychology.
- *Journal of Sport Psychology in Action*—This journal does not publish original research. Rather, it is an applied journal that promotes the application of scientific knowledge to the practice of sport, exercise, and health psychology.
- *Journal of Sport and Exercise Psychology*—Begun in 1979, it is one of the oldest and most respected research journals in the field and publishes basic and applied sport and exercise psychology research studies.
- *Sport, Exercise and Performance Psychology*—Started in 2012, this is the official journal of Exercise and Sport Psychology Division 47 of the American Psychological Association. It publishes papers that focus on sport, exercise, and performance psychology.
- *Psychology of Sport and Exercise*—Begun in 2000, this journal provides a forum for scholarly reports in sport and exercise psychology broadly defined.
- *The Sport Psychologist*—This journal, begun in 1987, publishes both applied research and professional practice articles that facilitate the delivery of psychological services to coaches and athletes.
- *Sport and Exercise Psychology Review*—This journal publishes articles on all aspects of sport psychology.

the athlete to either a licensed clinical psychologist or, preferably, a clinical sport psychologist for treatment.

Key Point

Clinical sport and exercise psychologists treat athletes and exercisers who have severe emotional disorders. Educational sport psychology specialists are "mental coaches" who educate athletes and exercisers about psychological skills and their development.

Both clinical and educational sport and exercise psychology specialists must have a thorough knowledge of both psychology and exercise and sport science (figure 1.1). In 1991, the AASP began a certified consultant program. To qualify for certification as sport and exercise consultants, people must have advanced training in both psychology and the sport sciences. In 2016, the organization also voted to add a certification examination that must be passed by anyone hoping to become a certified consultant. These requirements are designed to protect the public from unqualified individuals professing to be sport and exercise psychologists.

Activity 1.3 lets you interview a sport or exercise psychology professional.

Reviewing the History of Sport and Exercise Psychology

Today, sport and exercise psychology is more popular than ever before. It is a mistake, however, to think that this field has developed only recently. Modern sport psychology dates back to the 1880s (Kornspan, 2012), and references to psychology can be traced back to the ancient Olympic Games (Kremer & Moran, 2008). The history of sport psychology mirrors the history of other fields such as psychology, physical education, and kinesiology. In addition, the field has been influenced by larger sociocultural developments such as growth of the Olympic movement, women's liberation efforts, and the popularity of professional sport (Gould & Voelker, 2014).

The history of sport psychology falls into six periods, which are highlighted here along with specific individuals and events from each period. These various periods have distinct characteristics and yet are interrelated. Together they contributed to the field's development and growing stature.

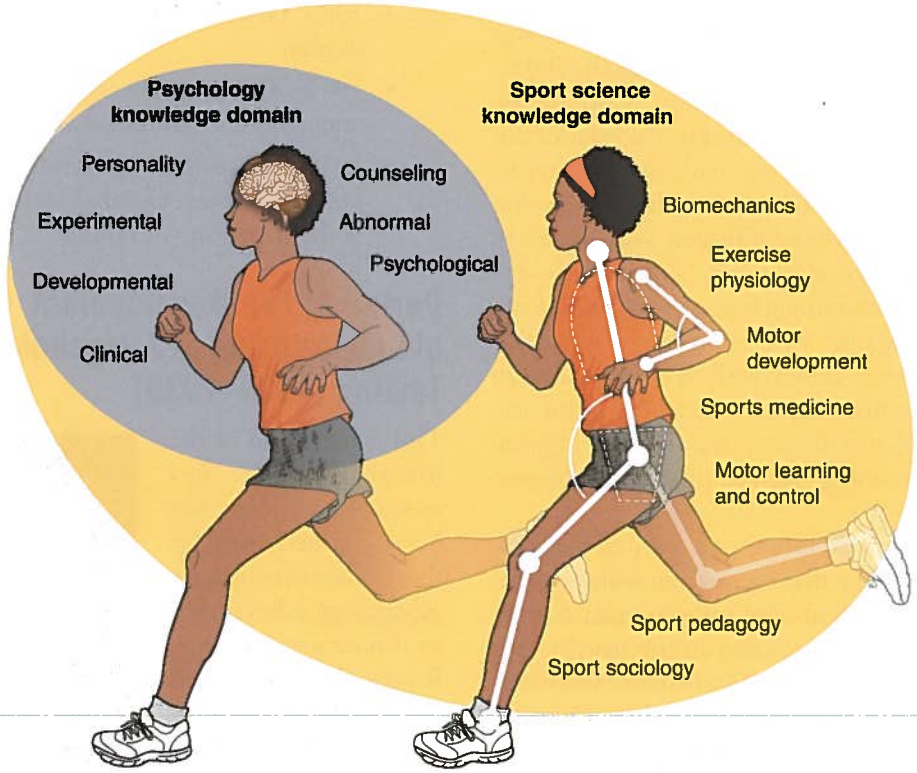


FIGURE 1.1 The relationship of knowledge in the sport science and psychology domains to the field of sport and exercise psychology.

Period 1: Early Years (1893–1920)


NORMAN TRIPLETT

In North America, sport psychology began in the 1890s. For example, Norman Triplett, a psychologist from Indiana University and a bicycle racing enthusiast, wanted to understand why cyclists sometimes rode faster when they raced in groups or pairs than when they rode alone (Triplett, 1898). First, he verified that his initial observations were correct by studying cycling racing records. To test his hunch further, he also conducted an experiment in which young children were to reel in fishing line as fast as they could. Triplett found that children reeled in more line when they worked in the presence of another child. This experiment allowed him to make more reliable predictions about when bicycle racers would have better performances.

Another early pioneer was E.W. Scripture, a Yale psychologist who was interested in taking a more scientific data-based approach to the study of psychology, as much of the psychology in these early years was introspective and philosophical (see Kornspan, 2007a, for an in-depth examination of his work). Scripture saw sport as an excellent way to demonstrate the value of this "new" scientific psychology, and with his students he conducted a number of laboratory studies on reaction and muscle movement times of fencers and runners as well as transfer of physical training. Scripture also discussed early research examining how sport might develop character in participants. Most interesting was the fact that Scripture worked closely with William Anderson of Yale, one of the first physical educators in America. This demonstrates that those in the fields of physical education and psychology worked together to develop sport psychology.

While Triplett and Scripture were part of the "new psychology" movement that focused on using experimental laboratory methods and measurement to gain knowledge, others were interested in the field from a more philosophical perspective. Most notable was Pierre de Coubertin, the founder of the modern Olympic Games (Kornspan, 2007b). Coubertin wrote extensively on the psychological aspects of sport and organized two early Olympic Congresses that focused on psychology as it could be related to sport in this time period.

In these early years, psychologists, physical educators, and other interested parties were only beginning to explore psychological aspects of sport and motor skill learning. They measured athletes' reaction times, studied how people learn sport skills, and discussed the role of sport in personality and character development, but they did little to apply these studies. Moreover, people dabbled in sport psychology, but no one specialized in the field.

Highlights of Period 1

- 1893: E.W. Scripture conducts data-based studies of athletes at Yale, examining reaction and movement times as well as transfer of physical training.
- 1897: Norman Triplett conducts the first social psychology and sport psychology experiment, studying the effects of others on cyclists' performances.
- 1897: Second Olympic Congress debates psychological effect of sport on youths.
- 1899: E.W. Scripture of Yale describes personality traits that he believes can be fostered via sport participation.
- 1903: Third Olympic Congress focuses on sport psychology.
- 1903: G.T.W. Patrick discusses the psychology of play.
- 1914: R. Cummins assesses motor reactions, attention, and abilities as they pertain to sport.
- 1918: As a student, Coleman Griffith conducts informal studies of football and basketball players at the University of Illinois.

Period 2: The Development of Laboratories and Psychological Testing (1921–1938)


COLEMAN GRIFFITH

This time period in the history of sport and exercise psychology has been characterized by the development of sport psychology laboratories in Germany, Japan, Russia, and the United States and increased psychological testing (Kornspan, 2012). Coleman Griffith was the first North American to

devote a significant portion of his career to sport psychology, and today he is regarded as the father of American sport psychology (Kroll & Lewis, 1970). A University of Illinois psychologist who also worked in the department of physical welfare (physical education and athletics), Griffith developed the first laboratory in sport psychology, helped initiate one of the first coaching schools in America, and wrote two classic books, *Psychology of Coaching* and *Psychology of Athletics.* He also conducted a series of studies on the Chicago Cubs baseball team and developed psychological profiles of legendary players such as Dizzy Dean. He corresponded with Notre Dame football coach Knute Rockne about how best to psych teams up and questioned Hall of Famer Red Grange about his thoughts while running the football. Ahead of his time, Griffith worked in relative isolation, but his high-quality research and deep commitment to improving practices remain an excellent model for sport and exercise psychologists. During this time period, psychologists also began to test athletes, assessing such things as reaction times, concentration, personality, and aggression. For example, baseball immortal Babe Ruth was brought to the Columbia University Psychological Laboratory to be tested (Fuchs, 2009).

Highlights of Period 2

- 1920: Robert Schulte directs a psychological laboratory at the German High School for Physical Education.
- 1920: The first sport psychology department is begun by P.A. Rudik in Moscow at the State Institute of Physical Culture.
- 1921: Schulte publishes *Body and Mind in Sport.*
- 1921–1931: Griffith publishes 25 research articles about sport psychology.
- 1925: Schulte publishes *Aptitude and Performance Testing for Sport.*
- 1925: University of Illinois research-in-athletics laboratory is established; Griffith is appointed director.
- 1926: Griffith publishes *Psychology of Coaching.*
- 1928: Griffith publishes *Psychology of Athletics.*

Period 3: Preparation for the Future (1939–1965)

Franklin Henry at the University of California, Berkeley, was largely responsible for the field's scientific development. He devoted his career to the scholarly study of the psychological aspects of sport and motor skill acquisition. Most important, Henry trained many other energetic physical educators who later became university professors and initiated systematic research programs. Some of his students became administrators who reshaped curriculums and developed sport and exercise science or the field of kinesiology as we know it today.

FRANKLIN HENRY

Other investigators from 1939 to 1965, such as Warren Johnson and Arthur Slatter-Hammel, helped lay the groundwork for future study of sport psychology and helped create the academic discipline of exercise and sport science. In addition, under the direction of Alfred Hubbard, the Sport Psychology Laboratory at the University of Illinois was reinstituted and a variety of students conducted studies in the laboratory during this time period (Kornspan, 2013). Applied work in sport psychology was still limited. However, by the end of the era this was beginning to change.

One individual doing applied work during this era was Dorothy Hazeltine Yates, one of the first women in the United States to both practice sport psychology and conduct research. Yates consulted with university boxers, teaching them how to use relaxation and positive affirmations to manage emotions and enhance performance (Kornspan & MacCracken, 2001). Yates developed the technique, called the relaxation-set method, during World War II when she consulted with a college boxing team with considerable success. She later taught a psychology course exclusively for athletes and aviators. Like many of today's sport psychologists, Yates was interested in scientifically determining whether her interventions were effective, and she published an experimental test of her technique with boxers (Yates, 1943). Although she did her work in relative isolation, Yates' research on practice orientation was especially impressive.

Another individual doing applied work was David Tracy, who was hired to work with the St. Louis Browns, a professional baseball team (Kornspan & MacCracken, 2001). His work was widely publicized and is credited with bringing attention to sport psychology (Kornspan, 2009).

Helping set the stage for applied work that would begin to emerge in later historical periods was John Lawther, a professor and basketball coach from Pennsylvania

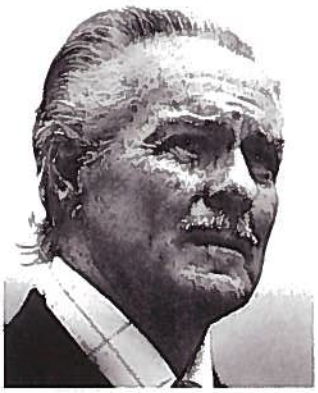
State University. Not only did he write one of the first applied books in the area, *Psychology of Coaching,* but Lawther also emphasized the importance of linking research and practice. He also was influential in graduate education, in supervising doctoral students who went on to become leaders in the field, and in developing sport psychology organizations (Kornspan, 2015).

Highlights of Period 3

- 1938: Franklin Henry assumes a position in the department of physical education at the University of California, Berkeley, and establishes a graduate program in the psychology of physical activity.
- 1943: Dorothy Yates works with college boxers and studies the effects of her relaxation-training intervention.
- 1949: Warren Johnson assesses precompetitive emotions of athletes.
- 1951: John Lawther writes *Psychology of Coaching.*
- 1951: The Sport Psychology Laboratory at the University of Illinois is reinstituted.
- 1965: First World Congress of Sport Psychology is held in Rome.

Period 4: Establishment of Academic Sport Psychology (1966–1977)

By the mid-1960s, physical education had become an academic discipline (now called kinesiology or exercise and sport science) and sport psychology had become a separate component in this discipline, distinct from motor learning. Motor learning specialists focused on how people acquire motor skills (not necessarily sport skills) and on conditions of practice, feedback, and timing. In contrast, sport psychologists studied how psychological factors—anxiety, self-esteem, and personality—influence sport and motor skill performance and how participation in sport and physical education influences psychological development (e.g., personality, aggression).



BRUCE OGILVIE

Applied sport psychology consultants also began working with athletes and teams. Bruce Ogilvie of San Jose State University was one of the first to do so, and he is often called the father of North American applied sport psychology. John Lawther wrote his book *Sport Psychology* and continued to influence the field with his research to practice orientation by teaching at universities around the country after his retirement from Pennsylvania State University. Concurrent with the increased interest in the field, the first sport psychology societies were established in North America.

Highlights of Period 4

- 1966: Clinical psychologists Bruce Ogilvie and Thomas Tutko write *Problem Athletes and How to Handle Them* and begin to consult with athletes and teams.
- 1967: Bryant Cratty of UCLA writes *Psychology of Physical Activity.*
- 1967: First annual NASPSPA conference is held.
- 1972: John Lawther publishes *Sport Psychology.*
- 1974: Proceedings of the NASPSPA conference are published for the first time.

Period 5: Multidisciplinary Science and Practice in Sport and Exercise Psychology (1978–1999)

From the mid-1970s to 1999, tremendous growth in sport and exercise psychology took place both in North America and internationally. The field became more accepted and respected by the public. Interest in applied issues characterized this period, as did the growth and development of exercise psychology as a specialty area for researchers and practitioners. Sport and exercise psychology also separated from the related exercise and sport science specializations of motor learning and control and motor development and emerged as a subdiscipline in its own right. More and better research was conducted, and this research was met with increased respect and acceptance in related fields such as psychology. Alternative forms of qualitative and interpretive research emerged and became better accepted as the period came to a close. Specialty journals and conferences in the area were developed, and numerous books were published. Both students and professionals with backgrounds in general psychology entered the field in greater numbers. Training in the field took a more multidisciplinary perspective as students took more counseling- and psychology-related course work. The field wrestled with a variety of

professional practice issues such as defining training standards for those in the area, developing ethical standards, establishing licensure, and developing full-time positions for the increasing number of individuals entering the field.

DOROTHY HARRIS

In this period, Dorothy Harris, a professor at Pennsylvania State University, advanced the cause of both women and sport psychology by helping to establish the PSU graduate program in sport psychology. Her accomplishments included being the first American and the first female member of the International Society of Sport Psychology, the first woman to be awarded a Fulbright Fellowship in sport psychology, and the first female president of the North American Society of Sport Psychology and Physical Activity. Harris broke ground for future women to follow at a time when few women were professors in the field.

Highlights of Period 5

- 1979: *Journal of Sport Psychology* (now called *Sport and Exercise Psychology*) is established.
- 1980: The U.S. Olympic Committee develops the Sport Psychology Advisory Board.
- 1984: American television coverage of the Olympic Games emphasizes sport psychology.
- 1985: The U.S. Olympic Committee hires its first full-time sport psychologist.
- 1986: The first applied scholarly journal, *The Sport Psychologist,* is established.
- 1986: AASP is established.
- 1987: APA Division 47 (Exercise and Sport Psychology) is developed.
- 1988: The U.S. Olympic team is accompanied by an officially recognized sport psychologist for the first time.
- 1989: *Journal of Applied Sport Psychology* begins.
- 1991: AASP establishes the "certified consultant" designation.

Period 6: Contemporary Sport and Exercise Psychology (2000–Present)

Today sport and exercise psychology is a vibrant and exciting field with a bright future. However, several serious issues must be addressed. Later, in chapter 2, you will learn about contemporary sport and exercise psychology in detail, but some of the key developments are highlighted here.

Highlights of Period 6

- 2000: The journal *Psychology of Sport and Exercise* is developed and published in Europe.
- 2003: APA Division 47 focuses on sport psychology as a specialized proficiency area.
- 2017: The International Society of Sport Psychology Conference in Seville, Spain, has more than 1,000 participants from 70 countries.
- Concerns emerge about the best ways to prepare and educate students.
- Exercise psychology flourishes, especially in university environments, driven by external funding possibilities and its utility in facilitating wellness and holding down health care costs.
- Strong, diverse, and sustained research programs are evident around the world.
- Interest in applied sport psychology continues to increase.

Focusing on Sport and Exercise Psychology Around the World

Sport and exercise psychology thrives worldwide. Sport psychology specialists work in more than 70 countries. Most of these specialists live in North America and Europe; major increases in activity have also occurred in Latin America, Asia, and Africa in the past decade.

AVKSENTY PUNI

Sport psychologists in Japan, Russia, and Germany began working at about the time Coleman Griffith began his work at the University of Illinois. The pioneering work of Russian sport psychologist Avksenty Puni has

Women in Sport and Exercise Psychology

When one looks at the history of sport and exercise psychology, the absence of women is striking. This is not uncommon in the history of many sciences, and multiple factors account for this absence. Historically, women were not given the same opportunities as their male counterparts, and women who were involved often had to overcome prejudices and other major obstacles to professional advancement. Also, women's contributions have often been underreported in scientific history.

Kornspan and MacCracken (2001) identified the important research, teaching, and intervention work Dorothy Hazeltine Yates completed in the 1940s, and the work of Dorothy Harris has also been acknowledged. Vealey (2006), in providing a comprehensive history of the evolution of sport and exercise psychology, also uncovered previously ignored contributions of female pioneers in the field. Finally, Krane and Whaley (2010) and Whaley and Krane (2012) conducted a study of eight U.S. women who greatly influenced the development of the field over the past 30 years: Joan Duda, Deb Feltz, Diane Gill, Penny McCullagh, Carole Oglesby, Tara Scanlan, Maureen Weiss, and Jean Williams. These women shared a number of characteristics (e.g., driven, humble, competent, passionate about the field) and helped shape the field by mentoring countless male and female students, producing top-notch lines of research, and providing caring, competent leadership (Krane & Whaley, 2010). They also faced numerous challenges in their trailblazing efforts, such as overcoming department politics and sexism (Krane & Whaley, 2010). However, their "quiet competence" prevailed, and these outstanding women contributed greatly to the history of U.S. sport and exercise psychology.

Contributions of women to sport and exercise psychology are not limited to the United States. Women from around the world, such as Russian Natalia Stambulova, German-born Dorothea Alfermann, and Spaniard Gloria Balague, have made important contributions to the field for multiple decades. Most notable is Ema Geron of Bulgaria, who published books in the area and played a major leadership role in the formation of the European Federation of Sport Psychology. She was the first president of the organization, serving from 1969 to 1973.

One thing is clear: Although they may not be given the credit they deserve, women have greatly contributed to the development of sport psychology and exercise psychology and are helping drive major advances in the field today.

recently been disseminated to English-speaking audiences and provides a fascinating glimpse of this individual's 50-year career (Ryba, Stambulova, & Wrisberg, 2005; Stambulova, Wrisberg, & Ryba, 2006). Puni's theorizing on psychological preparation for athletic competition focusing on realistic goals, uncompromising effort, optimal emotional arousal, high tolerance for distractions and stress, and self-regulation was groundbreaking and far ahead of what was being done in North America at the time. His work demonstrates the importance of looking outside one's borders for sport psychology

FERRUCCIO ANTONELLI

The ISSP was established in 1965 to promote and disseminate information about sport psychology throughout the world. The ISSP has sponsored 14 World Congresses of Sport Psychology—focusing on such topics as human performance, personality, motor learning, wellness and exercise, and coaching psychology—that have been instrumental in promoting awareness of and interest in the field. The ISSP has also sponsored *International Journal of Sport and Exercise Psychology.*

Credit for much of the international development of sport psychology goes to Italian sport psychologist Ferruccio Antonelli, who was both the first president of the ISSP and the first editor of *International Journal of Sport Psychology.* Sport and exercise psychology is now well recognized throughout the world as both an academic area of concentration and a profession. The prospect of continued growth remains bright.

LEARNING AIDS

SUMMARY

1. **Describe what sport and exercise psychology is.**
Sport and exercise psychology is the scientific study of the behavior of people engaged in sport and exercise activities and the application of the knowledge gained. Researchers in the field have two major objectives: (1) to understand how psychological factors affect a person's motor performance and (2) to understand how participating in physical activity affects a person's psychological development. Despite enormous growth in recent years, sport psychology dates back to the early 1900s and is best understood within the framework of its six distinct historical periods.
2. **Understand what sport and exercise psychology specialists do.**
Contemporary sport and exercise psychologists engage in different roles, including conducting research, teaching, and consulting with athletes and exercisers.
3. **Know what training is required of a sport and exercise psychologist.**
Not all sport and exercise psychology specialists are trained in the same way. Clinical sport and exercise psychologists are trained specifically in psychology to treat athletes and exercisers with severe emotional disorders, such as substance abuse or anorexia. Educational sport psychology specialists receive training in exercise and sport science and related fields; they serve as mental coaches, educating athletes and exercisers about psychological skills and their development. They are not trained to assist people with severe emotional disorders.
4. **Understand major developments in the history of sport and exercise psychology.**
Sport and exercise psychology has a long and rich history dating back more than 100 years. Its history falls into six periods. The first period, the early years (1893–1920), is characterized by isolated studies. During the second period (1921–1938), sport psychology laboratories and psychological testing took place at a number of locations around the world. In the United States, Coleman Griffith became the first American to specialize in the area. The third period, preparation for the future (1939–1965), is characterized by the field's scientific development attributable to the educational efforts of Franklin Henry. During the establishment of the academic discipline (1966–1977), sport and exercise psychology became a valued component of the academic discipline of physical education. The fifth period, multidisciplinary science and practice (1978–1999), is characterized by tremendous growth as the field became more accepted and respected by the public. Interest in applied issues and the growth and development of exercise psychology were evident. Training in the field took a more multidisciplinary perspective, and the field wrestled with a variety of professional practice issues. The final period of contemporary sport and exercise psychology (2000–present) has been distinguished by continued growth worldwide, considerable diverse research, and interest in application and consulting. Exercise psychology flourishes.

KEY TERMS

sport and exercise psychology
clinical sport psychologists
educational sport psychology specialists

REVIEW QUESTIONS

1. What is sport and exercise psychology, and what are its two general objectives?
2. Describe the major accomplishments of the six periods in the history of sport and exercise psychology. What contributions did Coleman Griffith and Franklin Henry make to sport and exercise psychology?
3. Describe three roles of sport and exercise psychology specialists.
4. Distinguish between clinical and educational sport psychology. Why is this distinction important?
5. Why do contemporary sport psychologists need to take a global perspective?

CRITICAL THINKING QUESTIONS

1. Why is it important to understand the history of sport and exercise psychology?
2. Consider your professional goals (e.g., to become a physical therapist, coach, exercise physiologist) and identify how the field of sport psychology might affect what you want to do.
3. Why is it important for sport psychologists to understand global developments in the field?

2

Science and Professional Practice of Sport and Exercise Psychology

After reading this chapter, you should be able to

1. distinguish between scientific and professional practice knowledge,
2. integrate experiential and scientific knowledge,
3. compare and contrast orientations to the field, and
4. describe career opportunities and future directions in the field.

Not a week seems to go by that a news story does not appear saying that the latest scientific study indicates that eating certain foods causes cancer, that a new weight-loss method is effective, that former professional football players have suffered permanent brain injury from repeated hits during their careers, that exercise is an effective treatment for depression, or that parent and coach pressure leads to unhealthy stress and burnout in young athletes. However, while some of the results reported in these stories stand the test of time, others are contradicted just a year or two later. This occurs because the limits in the design of the original scientific study were not understood or the results were disseminated before they could be replicated. Sound scientific methods and understanding of science are necessary to accurately interpret the strengths and limitations of new research. Science can also be used to counter coaching or physical training myths that we adhere to simply because we have always done things a certain way or to correct erroneous information. For example, many parents tell their children they should not swim right after eating, but research has proven that waiting is not necessary. Similarly, it is often assumed that the five best players will make the best basketball team, but as we will learn in chapter 9 on group and team dynamics and cohesion, this is not the case. It is important that we make decisions based on good science and not just hearsay or tradition.

Whether scientific results stand the test of time or not or help debunk long-standing myths, one thing is clear. Today, because of the volume of scientific research being conducted, research results affect our lives more than ever before, and therefore we need to better understand it, both its strengths and limitations. As a sport and exercise science professional, you will need to understand the scientific foundation of your field so that you can better help the athletes, exercisers, and patients you serve. Others of you might want to become a sport and exercise psychology scientist yourself and experience the joy of discovering new knowledge and moving the field forward. Whether you want to conduct research or pursue a professional career in sport and exercise psychology or another sport- or health-related field, you will need to understand sport and exercise psychology both as a science and as a profession.

Bridging Science and Practice

Reading a sport and exercise psychology textbook and actually working professionally with exercisers and athletes are very different activities. To understand the relationship between the two you must be able to integrate scientifically derived textbook knowledge with practical professional experience. In fact, the American Psychological Association stresses the importance of evidence-based practice (where practitioners integrate the best available research with their own expertise when working in applied settings) for all aspects of psychology, including sport and exercise psychology (Anderson, 2006). We will help you develop the skills to do this so you can better use sport and exercise psychology knowledge in the field.

Scientifically Derived Knowledge

Sport and exercise psychology is above all a science. Hence, it is important that you understand how scientifically derived knowledge comes about and how it works; that is, you need to understand the **scientific method**. Science is dynamic—something that scientists do (Kerlinger, 1973). Science is not simply an accumulation of facts discovered through detailed observations, but rather is a process, or method, of learning about the world through the systematic, controlled, empirical, and critical filtering of knowledge acquired through experience. When we apply science to psychology, the goals are to describe, explain, predict, and allow control of behavior.

Let's take an example. Dr. Jennifer Jones, a sport psychology researcher, wants to study how movement education affects children's self-esteem. Dr. Jones first defines self-esteem and movement education and determines what age groups and particular children she wants to study. She then explains why she expects movement education and self-esteem to be related (e.g., the children would get recognition and praise for learning new skills). Dr. Jones' research is really about prediction and control: She wants to show that using movement education in similar conditions will consistently affect children's self-esteem in the same way. To test such things, researchers have developed general guidelines for scientific research:

- The scientific method dictates a **systematic approach** to studying a question. It involves standardizing the conditions; for example, one might assess the children's self-esteem under identical conditions with a carefully designed measure.
- The scientific method involves **control** of conditions. Key variables, or elements in the research (e.g., movement education or changes in self-esteem), are the focus of study, and other variables are controlled (e.g., the same person doing the teaching) so they do not influence the primary relationship.
- The scientific method is **empirical**, which means it is based on observation. Objective evidence must support beliefs, and this evidence must be open to outside evaluation and observation.
- The scientific method is **critical**, meaning that it involves rigorous evaluation by the researcher and other scientists. Critical analysis of ideas and work helps ensure that conclusions are reliable.

Theory

A scientist's ultimate goal is a **theory**, or a set of interrelated facts that present a systematic view of some phenomenon in order to describe, explain, and predict its future occurrences. Theory allows scientists to organize and explain large numbers of facts in a pattern that helps others understand them. Consistent with the notion of evidenced-based practice, theory and the scientifically validated principles should also be used to guide practice. As noted psychologist Kurt Lewin (1951, p.169) said many years ago ". . . there is nothing more practical than a good theory."

One example is the **social facilitation theory** (Zajonc, 1965). After Norman Triplett's first reel-winding experiment with children (see "Reviewing the History of Sport and Exercise Psychology" in chapter 1), psychologists studied how the presence of an audience affects performance, but their results were inconsistent. Sometimes people performed better in front of an audience and other times they performed worse. Zajonc saw a pattern in the seemingly random results and formulated a theory. He noticed that when people performed simple tasks or jobs they knew well, having an audience influenced their performance positively. However, when people performed unfamiliar or complex tasks, having an audience harmed performance. In his social facilitation theory, Zajonc contended that an audience creates arousal in the performer, which hurts performance on difficult tasks that have not been learned (or learned well) and helps performance on well-learned tasks.

Key Point

A theory is a set of interrelated facts presenting a systematic view of some phenomenon in order to describe, explain, and predict its future occurrences.

Zajonc's theory increased our understanding of how audiences influence performance at many levels (e.g., students, professionals) and in many situations (e.g., sport, exercise). He consolidated many seemingly random instances into a theory basic enough for performers, coaches, and teachers to remember and to apply in a variety of circumstances. As the saying goes, nothing is more practical than a good theory!

Of course, not all theories are equally useful. Some are in the early stages of development and others have already passed the test of time. Some theories have a limited scope and others have a broad range of application. Some involve few variables and others involve a complex matrix of variables and behaviors.

WWW Activity 2.1 has you design your own research study and experiment in sport and exercise psychology.

Studies Versus Experiments

An important way in which scientists build, support, or refute theory is by conducting studies and experiments. In a **study**, an investigator observes or assesses factors without changing the environment in any way. For example, a study comparing the effectiveness of goal setting, imagery, and self-talk in improving athletic performance might use a written questionnaire given to a sample of high school cross country runners just before a race. The researchers could compare techniques used by the 20 fastest runners with those used by the 20 slowest runners. The researchers would not change or manipulate any factors, but rather would simply observe whether faster runners reported using particular mental skills (e.g., imagery). The researchers would not know whether the goal setting, imagery, and self-talk caused some runners to go faster or whether running faster stirred the runners to set more goals. Studies have limited ability to identify what scientists call causal (cause and effect) relationships between factors.

Key Point

Determining causal relationships is the main advantage that conducting experiments has over conducting studies.

An **experiment** differs from a study in that the investigator manipulates the variables along with observing them and then examines how changes in one variable affect changes in others. Runners might be divided into two equal groups. One, called the **experimental group**, would receive training in how to set goals and use imagery and positive self-talk. The other, called the **control group**, would not receive psychological skills training. Then, if the experimental group outperformed the control group (with other factors that might affect the relationship being controlled), the reason, or cause, for this would be known. A causal relationship would have been demonstrated.

WWW Activity 2.2 asks you to abstract a sport and exercise psychology research study.

Any method of obtaining knowledge has strengths and limitations. The scientific method is no different in this regard. The major strength of scientifically derived knowledge is that it is reliable; that is, the methodology is systematic and controlled and scientific findings are consistent or repeatable. Also, the scientists are trained to be as objective as possible. One of their goals is to collect **unbiased data**—data or facts that speak for themselves and are not influenced by the scientist's personal feelings.

On the negative side, the scientific method is slow and conservative because reliability must be judged by others. It also takes time to be systematic and controlled—more time than most practitioners have. A breakthrough in science usually comes after years of research. For this reason, it's not always practical to insist that science guide all elements of practice.

Sometimes scientific knowledge is **reductionistic**. That is, because it is too complex to study all the variables of a situation simultaneously, the researcher may select isolated variables that are of the most critical interest. When a problem is reduced to smaller, manageable parts, however, our understanding of the whole picture may be compromised or diminished.

Another limitation of science is its overemphasis on **internal validity**. That is, science favors the extent to which the results of an investigation can be attributed to the treatment used. A study is usually judged by how well the scientists conform to the rules of scientific methodology and how systematic and controlled they were in conducting the study. Too much emphasis on internal validity can cause scientists to overlook external validity, or whether the issue has true significance or utility in the real world. If a theory has no **external validity**, its internal validity doesn't count for much. Finally, scientific knowledge tends to be conservative.

Professional Practice Knowledge

Professional practice knowledge refers to knowledge gained through experience. Perhaps, for example, you spend a lot of time helping exercisers, athletes, and physical education students enhance their performance and well-being, and in the process you pick up a good deal of practical understanding or information. Professional practice knowledge comes from many sources and ways of knowing, including these:

- Scientific method
- Systematic observation
- Single case study
- Shared public experience
- Introspection (examining your thoughts or feelings)
- Intuition (immediate understanding of knowledge in the absence of a conscious, rational process)

Although exercise leaders, coaches, and certified athletic trainers ordinarily do not use the scientific method, they do use theoretically derived sport and exercise principles to guide their practice.

For example, volleyball coach Theresa Hebert works with the high school team. She develops her coaching skills in a variety of ways. Before the season begins, she reflects (uses **introspection**) on how she wants to coach this year. During team tryouts she uses **systematic observation** of the new players as they serve, hit, and scrimmage. Last season, she remembers, the team captain—a star setter—struggled, so Coach Hebert wants to learn as much about her as possible to help her more this year. To do this, the coach talks with other players, teachers, and the setter's parents. In essence, the coach conducts a **case study**. When she and her assistant coaches compare notes on their scouting of the next opponent, **shared public experience** occurs. Coach Hebert often uses **intuition** also—for example, she decides to start Sarah over Rhonda today, the two players having similar ability, because it feels right to her. Of course, these methods are not equally reliable; however, in combination they lead to effective coaching. Like her players, Coach Hebert sometimes makes mistakes. But these errors or miscalculations also become sources of information.

Professional practice knowledge is guided trial-and-error learning. Whether you become a physical therapist, coach, teacher, exercise leader, or certified athletic trainer, you will use your knowledge to develop strategies and then evaluate their effectiveness. With experience, an exercise and sport science professional becomes more proficient and more knowledgeable in practical ways.

Professional practice knowledge has major strengths and limitations. This practical knowledge is usually more holistic than scientifically derived knowledge, reflecting the complex interplay of many factors—psychological, physical, technical, strategic, and social. And unlike science, professional practice knowledge tends to absorb novel or innovative practices. Coaches, teachers, exercise leaders, and trainers enjoy using new techniques. Another plus is that professionals can use practical theories immediately because they do not have to wait for the theories to be scientifically verified.

On the downside, professional practice can produce fewer and less precise explanations than science can. Professional practice is more affected by bias than is science and thus is less objective. Practical knowledge tends to be less reliable and definitive than scientifically based knowledge. Often a teacher knows a method works but does not know why. This can be a problem if the teacher wants to use the method in a new situation or revise it to help a particular student. Table 2.1 summarizes the strengths and limitations of both scientifically derived knowledge and professional practice knowledge.

TABLE 2.1 Strengths and Limitations of Scientifically Derived Knowledge and Professional Practice Knowledge

Source of knowledge	Strengths	Limitations
Scientifically derived	Highly reliable	Reductionistic, conservative, often slow to evolve
	Systematic and controlled	Lack of focus on external validity (practicality)
	Objective and unbiased	
Professional practice	Holistic	Less reliable
	Innovative	Lack of explanations
	Immediate	Greater susceptibility to bias

Integration of Scientific and Professional Practice Knowledge

The gap you may sense between reading a textbook and pursuing professional activities is part of a larger division between scientific and professional practice knowledge. Yet bridging this gap is paramount because the combination of the two kinds of knowledge is what makes for effective applied practice.

There are several causes for this gap (Gowan, Botterill, & Blimkie, 1979; Gould, 2016). Until recently, few opportunities existed to transfer results of research to professionals working in the field: physical educators, coaches, exercise leaders, athletes, exercisers, and trainers. Second, some sport and exercise psychologists were overly optimistic about using research to revolutionize the practice of teaching sport and physical activity skills. Although basic laboratory research was conducted in the 1960s and 1970s, little connection was then made to actual field situations (external validity).

Scientists have discussed this issue and have identified models to help them better think about how their research can make a bigger difference. For example, Glasgow, Vogt, and Boles (1999) developed the **RE-AIM model** that outlines five factors that interact to affect knowledge transfer (figure 2.1):

- Reach—who the program affects, the degree to which the program affects the target audience
- Efficacy—positive and negative outcomes of the program
- Adoption—who actually uses the completed program
- Implementation—assessment of whether the program is delivered as specified
- Maintenance—sustaining the program over time

It is suggested that researchers measure the effects of their studies relative to these five factors.

Bridging the research-to-practice gap is not the sole responsibility of researchers. Practitioners must make an active effort to integrate their worlds.

Taking an Active Approach to Sport and Exercise Psychology

To effectively use sport and exercise psychology in the field requires actively developing knowledge. The practitioner must blend the scientific knowledge of sport and exercise psychology with professional practice knowledge. Reading a book such as this, taking a course in sport and exercise psychology, or working (as a teacher, coach, or exercise leader) is simply not enough. You must actively integrate scientific knowledge with your professional experiences and temper these with your own insights and intuition.

To take an active approach means applying the scientific principles identified in subsequent chapters of this book to your practice environments. Relate these principles to your own experiences as an athlete, exerciser, and kinesiology student. In essence, use the gym, the pool, or the athletic field as a mini-experimental situation in which you test your sport and exercise psychology thoughts and understanding of principles. Evaluate how effective these ideas are and in what situations they seem to work the best. Modify and update them when needed by keeping current on the latest scientific findings in sport and exercise psychology.

In using this active approach, however, you must have realistic expectations of the research findings in sport and exercise psychology. Most research findings are judged to be significant based on probability. Hence, these findings won't hold true 100% of the time. They should work or accurately explain behavior the majority of the time. When they do not seem to predict behavior adequately, analyze the situation to identify possible explanations for why the principle does or does not work and, if the findings are theoretically based, consider the key components of the theory behind the original predictions. See whether you need to consider overriding personal or situational factors at work in your practice environment.

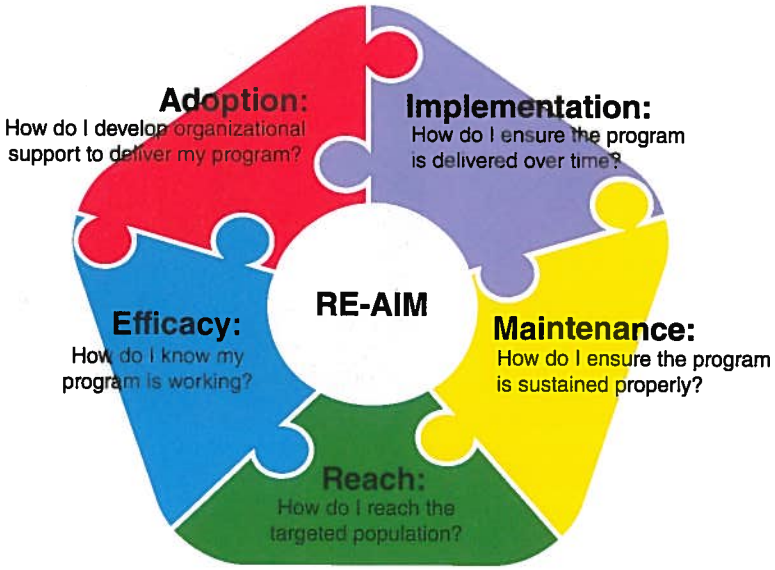


FIGURE 2.1 RE-AIM model.

Recognizing Sport and Exercise Psychology As an Art

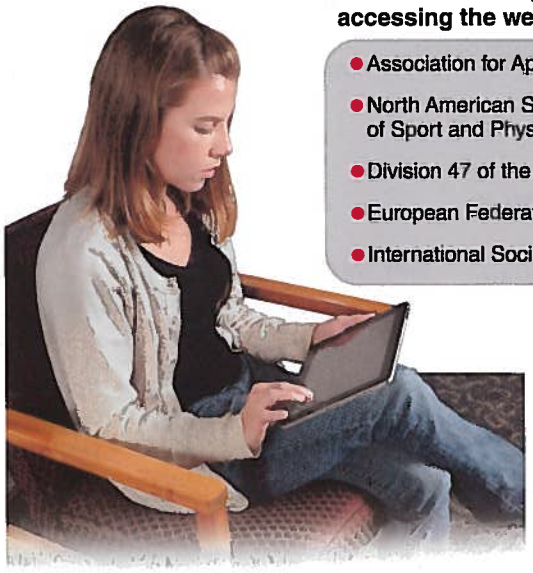
Psychology is a social science. It is different from physics: Whereas inanimate objects do not change much over time, human beings do. Humans involved in sport and exercise also think and manipulate their environment, which makes behavior more difficult (but not impossible) to predict. Coach "Doc" Counsilman (Kimiecik & Gould, 1987), legendary Olympic swim coach and key proponent of a scientific approach to coaching, best summed up the need to consider individuality when he indicated that coaches coach by using general principles—the science of coaching. The art of coaching enters as they recognize when and in what situations to individualize these general principles. This same science-to-practice guiding principle holds true in sport and exercise psychology. Interestingly, some investigators (Brown, Gould, & Foster, 2005) have begun to study contextual intelligence (the ability of individuals to understand and read the contexts in which they work) and its development, which has implications for better understanding how we learn the art of professional practice.

Key Point

The science of coaching focuses on the use of general principles. The art of coaching is recognizing when and how to individualize these general principles.

Choosing From Many Sport and Exercise Psychology Orientations

Some coaches believe that teams win games through outstanding defense, other coaches believe that teams win through a wide-open offensive system, and still others believe that wins come through a structured and controlled game plan. Like coaches, sport psychologists differ in how they view successful interventions. Contemporary sport and exercise psychologists may choose from many orientations to the field, three of the most prevalent being psychophysiological, social–psychological, and cognitive–behavioral approaches.



Learn more about sport and exercise psychology by accessing the websites of these organizations:

- Association for Applied Sport Psychology
- North American Society for the Psychology of Sport and Physical Activity
- Division 47 of the American Psychology Association
- European Federation of Sport Physchology
- International Society for Sport Psychology

Psychophysiological Orientation

Sport and exercise psychologists with a **psychophysiological orientation** believe that the best way to study behavior during sport and exercise is to examine the physiological processes of the brain and their influences on physical activity. These psychologists typically assess heart rate, brain wave activity, and muscle action potentials, determining relationships between these psychophysiological measures and sport and exercise behavior. For example in a classic study, biofeedback techniques were used to train elite marksmen to fire between heartbeats to improve accuracy (Landers, 1985). A number of researchers are examining the effects of physical activity, especially aerobic exercise, on brain functioning using electroencephalograms and neuroimaging measures (Hillman, Erickson, & Kramer, 2008). Results are exciting because they show that physical activity has a number of positive effects on brain functioning. Additionally, with the advent of mobile technology, an area of sport neuroscience is emerging that examines brain–behavior links such as differences in brain wave activity between expert and novice performers, brain wave patterns associated with athlete preshot routines in sports like golf, and effectiveness of neurofeedback on athletic performance (Park, Fairweather, & Donaldson, 2015).

Key Point

Psychophysiological sport and exercise psychologists study behavior through its underlying psychophysiological processes occurring in the brain.

Social–Psychological Orientation

Using a **social–psychological orientation**, sport and exercise psychologists assume that behavior is determined by a complex interaction between the environment (especially the social environment) and the personal makeup of the athlete or exerciser. Those taking the social–psychological approach often examine how an individual's social environment influences her behavior and how the behavior influences the social–psychological environment. For example, sport psychologists with a social–psychological orientation might examine how a leader's style and strategies foster group cohesion and influence participation in an exercise program (Carron & Spink, 1993).

Key Point

People with a social–psychological orientation focus on how behavior is determined by a complex interaction between the environment and one's personal makeup.

Cognitive–Behavioral Orientation

Psychologists adopting a **cognitive–behavioral orientation** emphasize the athlete's or exerciser's cognitions or thoughts and behaviors and believe that thought is central in determining behavior. Cognitive–behavioral sport psychologists might, for instance, develop self-report measures to assess self-confidence, anxiety, goal orientations, imagery, and intrinsic motivation. The psychologists then would see how these assessments are linked to changes in an athlete's or an exerciser's behavior. For example, groups of junior tennis players who were either burned out or not burned out were surveyed using a battery of psychological assessments. Burned-out tennis players, compared with non-burned-out players, were found to have less motivation. They also reported being more withdrawn, had more perfectionist personality tendencies, and used different strategies for coping with stress (Gould, Tuffey, Udry, & Loehr, 1996). Thus, links between the athletes' thoughts and behaviors and the athletes' burnout status were examined.

Understanding Present and Future Trends

Now that you have learned about the scientific base and professional practice orientations of sport and exercise psychology, you need to understand the significant current and future trends in the area. We briefly discuss these trends.

Consulting and Service Opportunities

Consulting and service opportunities are more plentiful than ever, and more sport psychologists are helping athletes and coaches achieve their goals. Exercise psychology has opened new service opportunities for helping people enjoy the benefits of exercise. For these reasons, applied sport and exercise psychology will continue to grow in the years to come (Murphy, 2005). In addition, with sport psychology as its core, performance psychology—in which sport psychology principles are applied to other high-performance areas such as business, the performing arts, medicine, and the military—has emerged as an area of interest (Hays, 2009).

Ethical Standards for Sport and Exercise Psychologists

Sport psychology organizations such as the Association for Applied Sport Psychology and the Canadian Society for Psychomotor Learning and Sport Psychology have developed ethical guidelines for their members to follow. These guidelines are based on the more general ethical standards of the American Psychological Association (2002), and at their core is the general philosophy that sport psychology consultants should respect the dignity and worth of individuals and honor the preservation and protection of fundamental human rights. The essence of this philosophy is that the athlete's or exerciser's welfare must be foremost in one's mind.

The AASP ethical guidelines outline six areas (general principles):

Competence

Sport psychologists strive to maintain the highest standards of competence in their work and recognize their limits of expertise. If a sport psychologist has little knowledge of team building and group dynamics, for example, it would be unethical to lead others to believe that he does have this knowledge or to work with a team.

Integrity

Sport and exercise psychologists demonstrate high integrity in science, teaching, and consulting. They do not falsely advertise, and they clarify their roles (e.g., inform athletes that they will be involved in team selection) with teams and organizations.

Professional and scientific responsibility

Sport and exercise psychologists always place the best interests of their clients first. For instance, it would be unethical to study aggression in sport by purposefully instructing one group of subjects to start fights with the opposing team (even if much could be learned from doing so). Those conducting research are also responsible for safeguarding the public from unethical professionals. If a sport psychologist witnesses another professional making false claims (e.g., that someone can eat all he or she wants and burn off all the extra fat via imagery), the sport psychologist is ethically bound to point out the misinformation and to professionally confront the offender or report him to a professional organization.

Respect for people's rights and dignity

Sport psychologists respect the fundamental rights (e.g., privacy and confidentiality) of the people with whom they work. They do not publicly identify persons they consult with unless they have permission to do so. They show no bias on the basis of such factors as race, sex, and socioeconomic status.

Concern for welfare of others

Sport psychologists seek to contribute to the welfare of those with whom they work. Hence, an athlete's psychological and physical well-being always comes before winning.

Social responsibility

Sport and exercise psychologists contribute to knowledge and human welfare while always protecting participants' interests. An exercise psychologist, for instance, would not offer an exercise program designed to reduce depression to one group of experimental participants without making the same program available to subjects in the control group at the end of the experiment. Offering the treatment only to the experimental group would not be socially responsible and, indeed, would be unethical.

Counseling and Clinical Training

Today, the education of sport psychologists places significant emphasis on counseling and clinical training (Peterson, Brown, McCann, & Murphy, 2012). People who want to assume a role in sport and exercise consulting will have to understand not only sport and exercise science but also aspects of counseling and clinical psychology. To meet this need, graduate programs have been developed in counseling and clinical psychology, with an emphasis in sport and exercise psychology.

Ethics and Competence Issues

As tremendous growth has occurred in sport and exercise consulting, ethics and competence issues have emerged (Murphy, 1995; Silva, 2001). For example, unqualified people might call themselves sport psychologists, and unethical individuals might promise more to coaches, athletes, and exercise professionals than they can deliver. That is, someone with no training in the area might claim to be a sport psychologist and promise that buying her imagery app will make an 80% free-throw shooter out of a 20% shooter. In response to this issue, the AASP has developed a certification program for sport and exercise psychology consultants, and in 2006 the APA recognized sport psychology as a proficiency in psychology. Ethical standards for sport psychology specialists have also been developed (see "Ethical Standards for Sport and Exercise Psychologists"). Physical education, sport, and exercise leaders should become informed consumers who can discriminate between legitimate, useful information and fads or gimmicks. They must also be familiar with ethical standards in the area.

Specialization

Specializations and new subspecialties are developing. Knowledge in sport psychology has exploded. Today's sport psychologists cannot be experts in every area that you will read about in this text. This has led to the separation of sport psychology as defined here and motor learning or motor control (the acquisition and control of skilled movements as a result of practice) as separate sport science areas. Exercise psychology is the most visible growth area. However, other new specializations that are attracting considerable interest include youth life skills development through sport (see chapter 12) and the psychology of performance excellence (applying sport psychology performance-enhancement principles to other settings such as music, arts, and business [see Hays, 2009]). We expect this trend toward specialization to continue.

Tension Between Academic and Applied Sport Psychology

Tension continues to exist between practitioners of academic and applied sport psychology. This textbook is based on the philosophy that sport psychology will best develop with an equal emphasis on research and professional practice. However, some tension exists between academic (research) and applied sport psychology consultants, each group believing that the other's activities are less crucial to the development of the field. Although such tension is certainly undesirable, it is not unique. Similar disagreement exists in the broader field of psychology. Sport psychologists must continue working to overcome this destructive thinking.

Qualitative research methods are now accepted. Although a great deal of traditional quantitative research is still being conducted, many investigators have broadened the way they do research by using qualitative (nonnumeric) methods, which entail collecting data via observation or interviews. Instead of analyzing numbers or ratings statistically, researchers analyze the respondents' words and stories or narration for trends and patterns. This has been a healthy development for the field.

Limited Full-Time Positions for Applied Sport Psychologists

Applied sport psychologists have more work opportunities than ever, but only limited chances at full-time positions. On one hand, they have more opportunities to work with teams and consult with athletes. On the other hand, although increasing, not enough full-time consulting positions exist. Furthermore, a person needs advanced graduate training to become a qualified sport psychology specialist. Hence, people should not expect to quickly obtain full-time consulting positions with high-profile teams and athletes simply on the basis of a degree in sport psychology.

Recognition As a Valued Sport Science

Sport and exercise psychology has become a recognized sport science of considerable utility and is receiving increased attention and recognition around the world. Many universities now offer sport and exercise psychology courses, and some graduate programs include five or six courses. Research and professional resources are increasingly available. With this up-to-date information, physical activity professionals will make great strides toward achieving their various goals.

Positive Psychology Movement

A number of leaders in the general field of psychology have embraced a positive psychology movement (e.g., Seligman & Csikszentmihalyi, 2002). This movement emphasizes the need for psychologists to focus more on the development of positive attributes such as optimism, hope, and happiness in individuals, as opposed to focusing the majority of attention on people's deficits (e.g., depression). Sport and exercise psychologists have been practicing positive performance for some time,

which has opened up new opportunities. For example, leading sport psychologists such as Graham Jones, Jim Loehr, Austin Swain, Shane Murphy, and Steve Bull have taken what they learned in sport to the business world, teaching businesspeople how to enhance their psychological skills and work performance. Similarly, sport psychologist Kate Hays (Hays, 2002, 2009) has helped elite performing artists such as dancers and musicians develop the psychological skills needed for top performance.

Globalization of Sport and Exercise Psychology

The importance of embracing the globalization of sport and exercise psychology is paramount for contemporary students of the field and will increase in years to come. New knowledge and best practices are rapidly being developed in a host of European, Asian, and South American countries. Examining sport psychology across cultures allows us to understand which principles generalize across cultures and which are culturally bound. To understand contemporary sport and exercise psychology, a global perspective is essential and will only grow in importance.

Multidisciplinary Research

Multidisciplinary research is increasing. More sport and exercise psychologists are working with experts from other kinesiology subdisciplines (e.g., exercise physiology and biomechanics) and with individuals from other disciplines (e.g., engineering, social work, and nursing) to study big issues facing society, such as overcoming the obesity epidemic or enhancing positive youth development. Researchers are discovering that real-world problems have multiple causes and that no one field alone can address them.

Advances in Technology

As technology develops at record pace and changes all aspects of our lives, sport psychologists are learning how to use these technologies to facilitate their efforts. That might involve using virtual reality to train performers, using neuroimaging to unlock the mysteries of the brain and exercise's influence on it, using computer games to enhance physical activity, or consulting online.

Cultural Diversity

As our world becomes seemingly smaller and more connected, more emphasis in contemporary sport psychology is being placed on studying cultural diversity and examining how groups such as men and women, baby boomers and Generation Z, or those from different ethnic cultures are both similar and unique. As you will read in chapter 8, greater emphasis is being placed on increasing understanding, facilitating inclusion, and embracing diversity.

WWW | Activity 2.3 has you predict the future of sport and exercise psychology.

Professionalization

Applied sport psychology is becoming more professionalized (Watson & Portenga, 2014). Certification standards are increasing. For example, in addition to course work and supervised hours, AASP-certified consultants need to pass a rigorous written examination based on a job task analysis of what sport psychology consultants do. Scholars are also beginning to study professional development such as competence-based training (e.g., Fletcher & Maher, 2013) and how sport psychologists learn to make professional judgments and decisions (e.g., Martindale & Collins, 2013).

Advances in technology give sport and exercise psychologists more tools to use to better help their clients.

Sport Psychology–Business Link

For several decades an increasing number of sport psychology specialists have been transferring what they learned in sport to the world of business. Here are several examples:

- Noted sport psychologist Jim Loehr was one of the first to draw a parallel between top executives and world-class athletes (Loehr & Schwartz, 2001). He taught some of America's top executives to be more effective by becoming corporate athletes who reach ideal performance states by learning to better develop and manage their physical, emotional, mental, and spiritual capacities.
- The Lane4 Management Group is a worldwide consulting group started by sport psychology specialist Graham Jones and Olympic swimming champion Adrian Moorhouse. Using lessons learned in high-performance sport, Lane4 associates help major corporations, business teams, and individual executives achieve and sustain high performance through interactive workshops, team development events, organization performance assessments, and senior executive coaching. Topics that Lane4 associates often address include leadership development, stress management, confidence, focus, team building, team performance enhancement, teamwork, mental toughness and one-to-one executive coaching and consulting (Jones, 2002; Jones & Morehouse, 2007).
- Ievleva and Terry (2008) discussed how sport psychology strategies focused on enhancing commitment, mental readiness, using positive images, increasing confidence, and distraction control can be used in business coaching.

LEARNING AIDS

SUMMARY

1. **Distinguish between scientific and professional practice knowledge.**
   Sport and exercise psychology is above all a science. For this reason you need to understand the basic scientific process and how scientific knowledge is developed. Scientific knowledge alone, however, is not enough to guide professional practice. You must also understand how professional practice knowledge develops.
2. **Integrate experiential and scientific knowledge.**
   Scientific knowledge must be integrated with the knowledge gained from professional practice. Integrating scientific and professional practice knowledge will greatly benefit you as you work in applied sport and exercise settings.
3. **Compare and contrast orientations to the field.**
   Several approaches can be taken to sport and exercise psychology, including the psychophysiological, social–psychological, and cognitive–behavioral orientations. Psychophysiological sport psychologists study physiological processes of the brain and their influence on physical activity. Social–psychological sport psychologists focus on how complex interactions between the social environment and personal makeup of the athlete or exerciser influence behavior. Cognitive–behavioral sport psychologists examine how an individual's thoughts determine behavior.
4. **Describe career opportunities and future directions in the field.**
   Although more career opportunities exist today than ever before, only a limited number of full-time consulting positions are available. Sport and exercise psychology is flourishing and has much to offer those interested in working in sport and physical activity settings. Trends point to such future directions as an increased interest in psychological skills training and applied work, more counseling and clinical training for sport psychologists, increased emphasis on ethics and competence, increased specialization, some continuing tension between academic and applied sport psychologists, more qualitative research, and the need to take a global perspective.

KEY TERMS

scientific method
systematic approach
control
empirical
critical
theory
social facilitation theory
study
experiment
experimental group
control group
unbiased data
reductionistic
internal validity
external validity
professional practice knowledge
introspection
systematic observation
case study
shared public experience
intuition
RE-AIM model
psychophysiological orientation
social–psychological orientation
cognitive–behavioral orientation

REVIEW QUESTIONS

1. Define science and explain four of its major goals.
2. What is a theory and why are theories important in sport and exercise psychology?
3. Identify the strengths and limitations of scientifically derived knowledge and professional practice knowledge. How does each develop?
4. Describe the gap between research and practice, why it exists, and how it can be bridged.
5. Why does a need exist for certification in contemporary sport and exercise psychology?
6. Identify and briefly describe the six major ethical principles in sport and exercise psychology.
7. Why do contemporary sport psychologists need to take a global perspective?

CRITICAL THINKING QUESTIONS

1. Describe the active approach to using sport and exercise psychology.
2. You are interested in investigating how self-confidence is related to recovery from athletic injury. Design both a study and an experiment to do so.
3. Think of the career you would like to pursue (e.g., sport and exercise psychology, coaching, certified athletic training, sport journalism). Describe how the knowledge and the practice of sport psychology can affect you in that career.