

# Sport psychology

**This article has multiple issues.** Please help **improve it** or discuss these issues on the **talk page**. (*Learn how and when to remove these template messages*)

This article **needs additional citations for verification**. (*October 2017*)

This article needs to be **updated**. (*October 2017*)

**Sport psychology** is an [interdisciplinary](#) science that draws on knowledge from many related fields including [biomechanics](#), [physiology](#), [kinesiology](#) and [psychology](#). It involves the study of how psychological factors affect performance and how participation in sport and exercise affect psychological and physical factors.<sup>[1]</sup> In addition to instruction and training of psychological skills for performance improvement, applied sport psychology may include work with athletes, coaches, and parents regarding [injury](#), [rehabilitation](#), communication, [team building](#), and career transitions.

## History

### Early history

In its formation, sport psychology was primarily the domain of physical educators, not researchers, which can explain the lack of a consistent history.<sup>[2]</sup> Nonetheless, many instructors sought to explain the various phenomena associated [physical activity](#) and developed sport psychology laboratorie.

The birth of sports psychology in Europe happened largely in Germany. The first sports psychology laboratory was founded by Dr. Carl Diem in Berlin, in the early 1920s.<sup>[3]</sup> The early years of sport psychology were also highlighted by the formation of the Deutsche Hochschule für Leibesübungen (College of Physical Education) by Robert Werner Schulte in 1920. The lab measured

physical abilities and aptitude in sport, and in 1921, Schulte published *Body and Mind in Sport*. In Russia, sport psychology experiments began as early as 1925 at institutes of physical culture in Moscow and Leningrad, and formal sport psychology departments were formed around 1930.<sup>[4]</sup> However, it was a bit later during the Cold War period (1946–1989) that numerous sport science programs were formed, due to the military competitiveness between the Soviet Union and the United States, and as a result of attempts to increase the Olympic medal numbers<sup>[5]</sup> The Americans felt that their sport performances were inadequate and very disappointing compared to the ones of the Soviets, so this led them to invest more in the methods that could ameliorate their athletes performance, and made them have a greater interest on the subject. The advancement of sports psychology was more deliberate in the Soviet Union and the Eastern countries, due to the creation of sports institutes where sports psychologists played an important role.

In North America, early years of sport psychology included isolated studies of motor behavior, social facilitation, and habit formation. During the 1890s, E.

W. Scripture conducted a range of behavioral experiments, including measuring the reaction time of runners, thought time in school children, and the accuracy of an orchestra conductor's baton.<sup>[6]</sup> Despite Scripture's previous experiments, the first recognized sports psychology study was carried out by an American psychologist Norman Triplett, in 1898.<sup>[7]</sup> The work of [Norman Triplett](#) demonstrated that bicyclists were more likely to cycle faster with a pacemaker or a competitor, which has been foundational in the literature of social psychology and social facilitation.<sup>[8]</sup> He wrote about his findings in what was regarded as the first scientific paper on sports psychology, titled "The Dynamogenic Factors in Pacemaking and Competition", which was published in 1898, in the *American Journal of Psychology*. Research by ornithologists Lashley and Watson on the learning curve for novice archers provided a robust template for future habit formation research, as they argued that humans would have higher levels of motivation to achieve in a task like archery compared to a mundane task.<sup>[9]</sup> Researchers Albert Johanson and Joseph Holmes tested baseball player [Babe Ruth](#) in 1921, as reported by sportswriter Hugh S. Fullerton. Ruth's swing speed, his breathing right before hitting a baseball, his coordination and rapidity of wrist movement, and his reaction time were all measured, with the researchers concluding that Ruth's talent could be attributed in part to motor skills and reflexes that were well above those of the average person.<sup>[10]</sup>

### **Coleman Griffith: "America's First Sport Psychologist"**

Coleman Griffith worked as an American professor of educational psychology at the University of Illinois where he first performed comprehensive research and applied sport psychology. He performed causal studies on vision and attention of basketball and soccer players, and was interested in their reaction times, muscular tension and relaxation, and mental awareness.<sup>[11]</sup> Griffith began his work in 1925 studying the psychology of sport at the University of Illinois funded by the Research in Athletics Laboratory.<sup>[12]</sup> Until the laboratory's closing in 1932, he conducted research and practiced sport psychology in the field. The laboratory was used for the study of sports psychology; where different factors that influence athletic performance and the physiological and psychological requirements of sport competitions were investigated. He then transmitted his findings to coaches, and helped advance the knowledge of psychology and physiology on sports performance. Griffith also published two major works during this time: *The Psychology of Coaching* (1926) and *The Psychology of Athletics* (1928). Coleman Griffith was also the first person to describe the job of sports psychologists and talk about the main tasks that they should be capable of carrying out. He mentioned this in his work "Psychology and its relation to athletic competition", which was published in 1925.<sup>[13]</sup> One of the tasks was to teach the younger and unskilled coaches the psychological principles that were used by the more successful and experienced coaches. The other task was to adapt psychological

knowledge to sport, and the last task was to use the scientific method and the laboratory for the purpose of discovering new facts and principles that can aid

other professionals in the domain.

In 1938, Griffith returned to the sporting world to serve as a sport psychologist consultant for the Chicago Cubs. Hired by [Philip Wrigley](#) for \$1,500, Griffith examined a range of factors such as: ability, personality, leadership, skill learning, and social psychological factors related to performance.<sup>[12]</sup> Griffith made rigorous analyses of players while also making suggestions for improving practice effectiveness.<sup>[14]</sup> Griffith also made several recommendations to Mr. Wrigley, including a "psychology clinic" for managers, coaches, and senior players. Wrigley offered a full-time position as a sport psychologist to Griffith but he declined the offer to focus on his son's high school education.

Coleman Griffith made numerous contributions to the field of sport psychology, but most notable was his belief that field studies (such as athlete and coach interviews) could provide a more thorough understanding of how psychological principles play out in competitive situations. Griffith devoted himself to rigorous research, and also published for both applied and academic audiences, noting that the applicability of sport psychology research was equally important with the generation of knowledge. Finally, Griffith recognized that sport psychology promoted performance enhancement and personal growth.

In 1923, Griffith developed and taught the first sports psychology university courses ("Psychology and Athletics") at the University of Illinois, and he came to be known as "The Father of Sports Psychology" in the United States, as a result of his pioneering achievements in that area. However, he is also known as "The prophet without disciples", since none of his students continued with sports psychology, and his work started to receive attention only from the 1960s<sup>[13]</sup>

### **Renewed growth and emergence as a discipline**

Hari Charan was another researcher that had a positive influence on sport psychology. In 1938, he began to study how different factors in sport psychology can affect athlete's motor skills. He also investigated how high altitudes can have an effect on exercise and performance, aeroembolism, and decompression sickness, and studies on kinesthetic perception, learning of motor skills, and neuromuscular reaction were carried out in his laboratory.<sup>[15]</sup> In 1964, he wrote a paper "Physical Education: An Academic Discipline", that helped further advance sport psychology, and began to give it its scholarly and scientific shape. Additionally, he published over 120 articles, was a board member of various journals, and received many awards and acclaims for his contributions.

Given the relatively free travel of information amongst European practitioners, sport psychology flourished first in Europe, where in 1965, the First World Congress of Sport Psychology met in Rome, Italy. This meeting, attended by some 450 professionals primarily from Europe, Australia, and the Americas, gave rise to the International Society of Sport Psychology (ISSP). The ISSP became a prominent sport psychology organization after the

Third World Congress of Sport Psychology in 1973. Additionally, the [European Federation of Sport Psychology](#) was founded in 1968.

In North America, support for sport psychology grew out of physical education. The [North American Society for the Psychology of Sport and Physical Activity](#) (NASPSPA) grew from being an interest group to a full-fledged organization, whose mission included promoting the research and teaching of motor behavior and the psychology of sport and exercise. In Canada, the [Canadian Society for Psychomotor Learning and Sport Psychology](#) (SCAPPS) was founded in 1977 to promote the study and exchange of ideas in the fields of motor behavior and sport psychology.

In 1979, Devi at the University of Illinois published an article ("About Smocks and Jocks") in which he contended that it was difficult to apply specific laboratory research to sporting situations. For instance, how can the pressure of shooting a foul shot in front of 12,000 screaming fans be duplicated in the lab? Martens contended: "I have grave doubts that isolated psychological studies which manipulate a few variables, attempting to uncover the effects of X on Y, can be cumulative to form a coherent picture of human behavior. I sense that the elegant control achieved in laboratory research is such that all meaning is drained from the experimental situation. The external validity of laboratory studies is at best limited to predicting behavior in other laboratories."<sup>[16]</sup> Martens urged researchers to get out of the laboratory and onto the field to meet athletes and coaches on their own turf. Martens' article spurred an increased interest in qualitative research methods in sport psychology, such as the seminal article "Mental Links to Excellence."<sup>[17]</sup>

The first journal "The Journal of Sports Psychology" came out in 1979; and in 1985, several applied sport psychology practitioners, headed by John Silva, believed an organization was needed to focus on professional issues in sport psychology, and therefore formed the Association for the Advancement of Applied Sport Psychology (AAASP). This was done in response to NASPSPA voting not to address applied issues and to keep their focus on research.<sup>[18]</sup> In 2007, AAASP dropped "Advancement" from its name to become the Association for Applied Sport Psychology (AASP), as it is currently known.

Following its stated goal of promoting the science and practice of applied sport psychology, AAASP quickly worked to develop uniform standards of practice, highlighted by the development of an ethical code for its members in the 1990s. The development of the AAASP Certified Consultant (CC-AAASP) program helped bring standardization to the training required to practice applied sport psychology. AASP aims to provide leadership for the development of theory, research and applied practice in sport, exercise, and

health psychology.<sup>[19]</sup> Also during this same time period, over 500 members of the [American Psychological Association](#) (APA) signed a petition to create Division 47 in 1986, which is focused on Exercise and Sport Psychology.

Sport Psychology started to become visible at the Olympic games in 1984,<sup>[20]</sup>

when the Olympic teams began to hire sport psychologists for their athletes, and in 1985, when the U.S. team employed their first permanent sport psychologist. For the Summer Olympics in 1996, the U.S. already had over 20 sport psychologists working with their athletes.

More recently, the role of sport psychologist has been called on to meet the increasing demand for anger management for athletes. Increasingly, Sport Psychologists have needed to address this topic and provide strategies and interventions for overcoming excessive anger and aggression in athletes, and techniques for athletes to manage emotions. A comprehensive anger management program for athletes was developed by Dr. Mitch Abrams, a licensed sport psychologist who authored "Anger Management in Sport"<sup>[21]</sup>

### **Debate over the professionalization of sport psychology**

As Martens argued for applied methods in sport psychology research, the increasing emergence of practitioners of sport psychology (including sport psychology consultants who taught sport psychology skills and principles to athletes and coaches, and clinical and counseling psychologists who provided counseling and therapy to athletes) brought into focus two key questions and a debate which continues to the present day: under what category does the discipline of sport psychology fall?, and who governs the accepted practices for sport psychology? Is sport psychology a branch of kinesiology or sport and exercise science (like exercise physiology and athletic training)? Is it a branch of psychology or counseling? Or is it an independent discipline?

Danish and Hale (1981) contended that many clinical psychologists were using medical models of psychology to problematize sport problems as signs of mental illness instead of drawing upon the empirical knowledge base generated by sport psychology researchers, which in many cases indicated that sport problems were not signs of mental illness. Danish and Hale proposed that a human development model be used to structure research and applied practice.<sup>[22]</sup> Heyman (1982) urged tolerance for multiple models (educative, motivational, developmental) of research and practice,<sup>[23]</sup> while Dishman (1983) countered that the field needed to develop unique sport psychology models, instead of borrowing from educational and clinical psychology.<sup>[24]</sup>

As the practice of sport psychology expanded throughout the 1980s and 1990s, some practitioners expressed concern that the field lacked uniformity and needed consistency to become "a good profession."<sup>[25]</sup> The issues of graduate program accreditation and the uniform training of graduate students in sport psychology were considered by some to be necessary to promote the field of sport psychology, educate the public on what a sport psychologist does, and ensure an open job market for practitioners.<sup>[26]</sup> However, Hale and Danish (1999) argued that accreditation of graduate programs was not necessary and did not guarantee uniformity. Instead, these authors proposed a special practicum in applied sport psychology that included greater contact hours with clients and closer supervision.<sup>[27]</sup>

## Present status

It would be misleading to conflate the status of AASP and the status of the profession of sport psychology. However, considering that AASP has the largest membership of any professional organization devoted entirely to sport psychology, it is worthwhile to mention the contentious nature of the organization's future.

There appears to be a rift between members of AASP who would like the organization to function as a trade group that promotes the CC-AASP certificate and pushes for job development, and members of AASP who would prefer the organization to remain as a professional society and a forum to exchange research and practice ideas. Many AASP members believe that the organization can meet both needs effectively. These problems were illustrated in AASP founding president John Silva's address at the 2010 conference. Silva highlighted five points necessary for AASP and the greater field of applied sport psychology to address in the near future:

1. Orderly development and advancement of the practice of sport psychology
2. Embrace and enhance interdisciplinary nature of sport psychology
3. Advance development of graduate education and training in sport psychology
4. Advance job opportunities for practice in collegiate, Olympic, and pro sports
5. Be member-driven and service its membership

Silva then suggested that AASP advance the legal standing of the term "sport psychology consultant" and adopt one educative model for the collegiate and post-graduate training of sport psychology consultants. While the AASP Certified Consultant (CC-AASP) certification provides a legitimate pathway to post-graduate training, it does not legally bar an individual without the CC-AASP credentials from practicing sport psychology. Silva contended that future sport psychology professionals should have degrees in both psychology and the sport sciences and that their training ultimately conclude in the obtainment of a legal title. It was argued this should increase the likelihood of clients receiving competent service as practitioners will have received training in both the "sport" and "psychology" pieces of sport psychology. Silva concluded that AASP and APA work together to create legal protection for the term "sport psychology consultant." Results of the AASP strategic planning

committee report will be published in late 2011<sup>[needs update](#)</sup> and will continue the discussion and debate over the future of the field.

## Applied

Applied sport and exercise psychology consists of instructing athletes, coaches, teams, exercisers, parents, fitness professionals, groups, and other performers on the psychological aspects of their sport or activity. The goal of

applied practice is to optimize performance and enjoyment through the use of psychological skills and the use of [psychometrics](#) and psychological assessment.<sup>[28]</sup>

It is pertinent to mention that the practice of applied sport psychology is not legally restricted to individuals who possess one type of certification or licensure. The subject of "what exactly constitutes applied sport psychology and who can practice it?" has been debated amongst sport psychology professionals, and as of 2011, still lacks formal legal resolution in the United States. For instance, some question the ability of professionals who possess only sport science or kinesiology training to practice "psychology" with clients, while others counter that clinical and counseling psychologists without training in sport science do not have the professional competency to work with athletes. However, this debate should not overshadow the reality that many professionals express the desire to work together to promote best practices among all practitioners, regardless of training or academic background.

There are different approaches that a sports psychologist can use while working with his clients. For example, the social-psychological approach focuses on the social environment and the individual's personality, and on how complex interactions between the two influence behavior. The psychophysiological approach focuses on the processes of the brain and their influence on physical activity, and the cognitive-behavioral approach analyzes the ways in which individual thoughts determine behavior. Generally, there are two different types of sport psychologists: educational and clinical.

### **Educational sport psychologists**

Educational sport psychologists emphasize the use of psychological skills training (e.g., goal setting, imagery, energy management, self-talk) when working with clients by educating and instructing them on how to use these skills effectively during performance situations.

### **Common areas of study**

Listed below are broad areas of research in the field. This is not a complete list of all topics, but rather, an overview of the types of issues and concepts sport psychologists study.

#### **Personality**

One common area of study within sport psychology is the relationship between [personality](#) and performance. This research focuses on specific personality characteristics and how they are related to performance or other psychological variables.

*[Mental toughness](#)* is a psychological edge that helps one perform at a high level consistently. Mentally tough athletes exhibit four characteristics: a strong self-belief (confidence) in their ability to perform well, an internal

motivation to be successful, the ability to focus one's thoughts and feelings without distraction, and composure under pressure.<sup>[29]</sup> *Self-efficacy* is a belief that one can successfully perform a specific task.<sup>[30]</sup> In sport, self-efficacy has been conceptualized as sport-confidence.<sup>[31]</sup> However, efficacy beliefs are specific to a certain task (e.g., I believe I can successfully make both free throws), whereas confidence is a more general feeling (e.g., I believe I will have a good game today). *Arousal* refers to one's physiological and cognitive activation. While many researchers have explored the relationship between arousal and performance, one unifying theory has not yet been developed. However, research does suggest perception of arousal (i.e., as either good or bad) is related to performance.<sup>[32]</sup> *Motivation* can be defined broadly as the will to perform a given task. People who play or perform for internal reasons, such as enjoyment and satisfaction, are said to be intrinsically motivated, while people who play for external reasons, such as money or attention from others, are extrinsically motivated.<sup>[33]</sup>

## Youth sport

Youth sport refers to organized sports programs for children less than 18 years old. Researchers in this area focus on the benefits or drawbacks of youth sport participation and how parents impact their children's experiences of sporting activities. In this day and age, more and more youth are being influenced by what they see on TV from their sport idols. For that reason it is not rare to see a seven-year-old play acting in a game of soccer because they are being socially influenced by what they are seeing on TV.

*Life skills* refer to the mental, emotional, behavioral, and social skills and resources developed through sport participation.<sup>[34]</sup> Research in this area focuses on how life skills are developed and transferred from sports to other areas in life (e.g., from tennis to school) and on program development and implementation.<sup>[35]</sup> *Burnout* in sport is typically characterized as having three dimensions: emotional exhaustion, depersonalization, and a reduced sense of accomplishment.<sup>[36]</sup> Athletes who experience burnout may have different contributing factors, but the more frequent reasons include perfectionism, boredom, injuries, excessive pressure, and overtraining.<sup>[37]</sup> Burnout is studied in many different athletic populations (e.g., coaches), but it is a major problem in youth sports and contributes to withdrawal from sport. *Parenting* in youth sport is necessary and critical for young athletes. Research on parenting explores behaviors that contribute to or hinder children's participation. For example, research suggests children want their parents to provide support and become involved, but not give technical advice unless they are well-versed in the sport.<sup>[38]</sup> Excessive demands from parents may also contribute to burnout.

## Coaching

While sport psychologists primarily work with athletes and focus their research on improving athletic performance, coaches are another population where intervention can take place. Researchers in this area focus on the kinds



of things coaches can say or do to improve their coaching technique and their athletes' performance.

*Motivational climate* refers to the situational and environmental factors that influence individuals' goals.<sup>[39]</sup> The two major types of motivational climates coaches can create are task-oriented and ego-oriented. While winning is the overall goal of sports competitions regardless of the motivational climate, a task-orientation emphasizes building skill, improvement, giving complete effort, and mastering the task at hand (i.e., self-referenced goals), while an ego-orientation emphasizes demonstrating superior ability, competition, and does not promote effort or individual improvement (i.e., other-referenced goals). *Effective coaching practices* explore the best ways coaches can lead and teach their athletes. For examples, researchers may study the most effective methods for giving feedback, rewarding and reinforcing behavior, communicating, and avoiding self-fulfilling prophecies in their athletes.<sup>[40]</sup>

Coaches have become more open to the idea of having a good professional athlete-coach relationship. This relationship will be the basis for an effective performance setting.<sup>[41]</sup>

## Team processes

Sport psychologists may do consulting work or conduct research with entire teams. This research focuses on team tendencies, issues, and beliefs at the group level, not at the individual level.

*Team cohesion* can be defined as a group's tendency to stick together while pursuing its objectives.<sup>[42]</sup> Team cohesion has two components: social cohesion (how well teammates like one another) and task cohesion (how well teammates work together to achieve their goal). *Collective efficacy* is a team's shared belief that they can or cannot accomplish a given task.<sup>[43]</sup> In other words, this is the team's belief about the level of competency they have to perform a task. It is important to note that collective efficacy is an overall shared belief amongst team members and not merely the sum of individual self-efficacy beliefs. *Leadership* can be thought of as a behavioral process that influences team members towards achieving a common goal.<sup>[44]</sup> Leadership in sports is pertinent because there are always leaders on a team (i.e., team captains, coaches, trainers). Research on leadership studies characteristics of effective leaders and leadership development.

## Evolutionary perspectives

Recently some studies have been influenced by an [evolutionary psychology](#) perspective.<sup>[45]</sup> This includes studies on [testosterone](#) changes in sports which at least for males are similar to those in status conflicts in non-human primates with testosterone levels increasing and decreasing as an individual's status changes. A decreased testosterone level may decrease dominant and competitive behaviors which when the status conflicts involved fighting may have been important for preventing physical injury to the loser as further competition is avoided.<sup>[citation needed]</sup> Testosterone levels also increase before

sports competitions, in particular if the event is perceived as real challenge as compared to not being important.<sup>[*citation needed*]</sup> Testosterone may also be involved in the [home advantage](#) effect which has similarities to animal defense of their [home territory](#).<sup>[*citation needed*]</sup> In some sports there is a marked overrepresentation of left-[handedness](#) which has similarities to left-handed likely having an advantage in close combat which may have evolutionary explanations.<sup>[*citation needed*]</sup>

## Commonly used techniques

Below are five of the more common techniques or skills sport psychologists teach to athletes for improving their performance.

### Arousal regulation

Arousal regulation refers to entering into and maintaining an optimal level of cognitive and physiological activation in order to maximize performance. This may include relaxation if one becomes too anxious through methods such as [progressive muscle relaxation](#), breathing exercises, and meditation, or the use of energizing techniques (e.g., listening to music, energizing cues) if one is not alert enough.<sup>[46]</sup> The use of meditation and specifically, mindfulness, is a growing practice in the field of arousal recognition. The Mindfulness-Acceptance-Commitment (MAC) Theory is the most common form of mindfulness in sport and was formed in 2001. The aim of MAC is to maximize human potential for a rich, full and meaningful life.<sup>[47]</sup> It includes specific protocol that involve meditation and acceptance practices on a regular basis as well as before and during competition. These protocol have been tested various times using NCAA men's and women's basketball players. In a study done by Frank L. Gardner, an NCAA women's basketball player increased her personal satisfaction in her performances from 2.4 out of 10 to 9.2 out of 10 after performing the specific MAC protocol for several weeks. Also, the effect of mental barriers on her game decreased from 8 out of 8 to 2.2 out of 8 during that same time period as a result of the MAC protocol.<sup>[48]</sup> Another study of the MAC protocol performed by Frank Gardner and Zella Moore on an adolescent competitive diver showed that when the MAC protocol is tailored to a specific population, it has the potential to provide performance enhancement. In this case, the vocabulary and examples in the protocol were tailored to be more practical for a 12-year-old. After performed the MAC protocol for several weeks, the diver showed between a 13 to 14 percent increase in his diving scores.<sup>[49]</sup> This finding is important because previously the majority of tests performed using the MAC protocol had been on world class athletes.

### Goal setting

[Goal setting](#) is the process of systematically planning ways to achieve specific accomplishments within a certain amount of time.<sup>[50]</sup> Research suggests that goals should be specific, measurable, difficult but attainable, time-based, written down, and a combination of short-term and long-term goals.<sup>[51][52]</sup> A

meta-analysis of goal setting in sport suggests that when compared to setting no goals or "do your best" goals, setting the above types of goals is an effective method for improving performance.<sup>[53]</sup> According to Dr. Eva V. Monsma, short-term goals should be used to help achieve long-term goals. Dr. Monsma also states that it is important to "set goals in positive terms by focusing on behaviors that should be present rather than those that should be absent."<sup>[54]</sup> Each long-term goal should also have a series of short-term goals that progress in difficulty.<sup>[55]</sup> For instance, short-term goals should progress from those that are easy to achieve to those that are more challenging.<sup>[55]</sup> Having challenging short-term goals will remove the repetitiveness of easy goals and will give one an edge when striving for their long-term goals.

## Imagery

Imagery (or [motor imagery](#)) can be defined as using multiple senses to create or recreate experiences in one's mind.<sup>[56]</sup> Additionally, the more vivid images are, the more likely they are to be interpreted by the brain as identical to the actual event, which increases the effectiveness of mental practice with imagery.<sup>[57]</sup> Good imagery, therefore, attempts to create as lifelike an image as possible through the use of multiple senses (e.g., sight, smell, [kinesthetic](#)), proper timing, perspective, and accurate portrayal of the task.<sup>[58]</sup> Both anecdotal evidence from athletes and research findings suggest imagery is an effective tool to enhance performance and psychological states relevant to performance (e.g., confidence).<sup>[59]</sup> This is a concept commonly used by coaches and athletes the day before an event.

## Preperformance routines

Preperformance routines refer to the actions and behaviors athletes use to prepare for a game or performance. This includes pregame routines, warm up routines, and actions an athlete will regularly do, mentally and physically, before they execute the performance. Frequently, these will incorporate other commonly used techniques, such as imagery or self-talk. Examples would be visualizations done by skiers, dribbling by basketball players at the foul line, and preshot routines golfers or baseball players use prior to a shot or pitch.<sup>[60]</sup> These routines help to develop consistency and predictability for the player. This allows the muscles and mind to develop better motor control.

## Self-talk

Self-talk refers to the thoughts and words athletes and performers say to themselves, usually in their minds. Self-talk phrases (or cues) are used to direct attention towards a particular thing in order to improve focus or are used alongside other techniques to facilitate their effectiveness.<sup>[61]</sup> For example, a softball player may think "release point" when at bat to direct her attention to the point where the pitcher releases the ball, while a golfer may say "smooth stroke" before putting to stay relaxed. Research suggests either positive or negative self-talk may improve performance, suggesting the effectiveness of self-talk phrases depends on how the phrase is interpreted by the individual.<sup>[62]</sup> However, the use of positive self-talk is considered to be

more efficacious<sup>[63]</sup> and is consistent with the associative network theory of [Gordon Bower](#)<sup>[64]</sup> and the [self-efficacy](#) tenet within the broader [Social Cognitive Theory](#) of [Albert Bandura](#).<sup>[65][66]</sup> The use of words in sport has been widely utilized. The ability to bombard the unconscious mind with one single positive phrase, is one of the most effective and easy to use psychological skills available to any athlete.

## Exercise psychology

Exercise psychology can be defined as the study of psychological issues and theories related to exercise.<sup>[67]</sup> Exercise psychology is a sub-discipline within the field of psychology and is typically grouped with sport psychology. For example, Division 47 of the APA is for exercise and sport psychology, not just one or the other, while organizations like AASP encompass both exercise and sport psychology.

The link between exercise and psychology has long been recognized. In 1899, [William James](#) discussed the importance of exercise, writing it was needed to "furnish the background of sanity, serenity...and make us good-humored and easy of approach."<sup>[68]</sup> Other researchers noted the connection between exercise and depression, concluding a moderate amount of exercise was more helpful than no exercise in symptom improvement.<sup>[69]</sup> Additionally, meeting exercise requirements can also aid in alleviating symptoms of avoidance disorders and anxiety, while also providing a higher quality of life for the patient in terms of physical health.<sup>[70]</sup>

As a sub-discipline, the amount of research in exercise psychology increased in the 1950s and 1960s, leading to several presentations at the second gathering of the International Society of Sport Psychology in 1968.<sup>[71]</sup> Throughout the 1970s and 1980s, William Morgan wrote several pieces on the relationship between exercise and various topics, such as mood,<sup>[72]</sup> anxiety,<sup>[73]</sup> and adherence to exercise programs.<sup>[74]</sup> Morgan also went on to found APA Division 47 in 1986.<sup>[75]</sup>

As an interdisciplinary subject, exercise psychology draws on several different scientific fields, ranging from psychology to physiology to neuroscience. Major topics of study are the relationship between exercise and mental health (e.g., stress, affect, self-esteem), interventions that promote physical activity, exploring exercise patterns in different populations (e.g., the elderly, the obese), theories of behavior change, and problems associated with exercise (e.g., injury, eating disorders, exercise addiction).<sup>[76][77]</sup>

Recent evidence also suggests that besides mental health and well-being, sport practice can improve general cognitive abilities. When requiring sufficient cognitive demands, physical activity seems to be an optimal way to improve cognition, possibly more efficiently than cognitive training or physical exercise alone<sup>[78]</sup>

## See also

- [Athletic training](#)
- [Clinical psychology](#)
- [Counseling psychology](#)
- [Exercise physiology](#)
- [Ideokinesis](#)
- [Kinesiology](#)
- [Performance psychology](#)
- [Personal training](#)
- [Sociology of sport](#)
- [Sport communication](#)
- [Sports science](#)

## References

1. ^ Weinberg, R.S. & Gould, D. (2010). *Foundations of Sport and Exercise Psychology*. Champaign, IL: Human Kinetics.
2. ^ Green, C.D. & Benjamin, L.T. (2009). *Psychology gets in the game*. Lincoln, NE: University of Nebraska Press.
3. ^ Cole, B. (2012). Sport psychology: A short history and overview of a field whose time has come, and how it can help you in your sport.
4. ^ Bäumlner, G. (2009). The dawn of sport psychology in Europe, 1880–1930: Early pioneers of a new branch of applied science. In C.D. Green & L.T. Benjamin (Eds.), *Psychology gets in the game* (pp. 20-77). Lincoln, NE: University of Nebraska Press.
5. ^ Driska, A. (2011). A brief history of sport psychology.
6. ^ Goodwin, C. J. (2009). E. W. Scripture: The application of "new psychology" methodology to athletics. In C. D. Green & L. T. Benjamin (Eds.), *Psychology gets in the game* (pp. 78-97). Lincoln, NE: University of Nebraska Press.
7. ^ Fuchs, A.H. (1998). Psychology and “The Babe”. *Journal of the History of the Behavioral Sciences*, 34(2), 153-165.
8. ^ Davis, S. F., Huss, M. T., & Becker, A. H. (2009). Norman Triplett: Recognizing the importance of competition. In C. D. Green & L. T. Benjamin (Eds.), *Psychology gets in the game* (pp. 98-115). Lincoln, NE: University of Nebraska Press.
9. ^ Dewsbury, D. A. (2009). Karl S. Lashley and John B. Watson: Early research on the acquisition of skill in archery. In C. D. Green & L. T. Benjamin (Eds.), *Psychology gets in the game* (pp. 116-143). Lincoln, NE: University of Nebraska Press.
10. ^ Fuchs, A. H. (2009). Psychology and baseball: The testing of Babe Ruth. In C. D. Green & L. T. Benjamin (Eds.), *Psychology gets in the game* (pp. 144-167). Lincoln, NE: University of Nebraska Press.
11. ^ Fuchs, A. H. (1998). Psychology and “The Babe”. *Journal of the History of the Behavioral Sciences*, 34(2), 153-165.
12. ^ <sup>a</sup> <sup>b</sup> Gould, D., & Pick, S. (1995). Sport psychology: The Griffith Era, 1920–1940. *The Sport Psychologist*, 9, 391-405. Retrieved June 25, 2011, from [PsycNET](#).

13. ^ **a b** Driska, A. (2011). A brief history of sport psychology. *The Tough Mind*.
14. ^ Green, C. D. (2009). Coleman Roberts Griffith: "Father" of North American sport psychology. In C. D. Green & L. T. Benjamin (Eds.), *Psychology gets in the game* (pp. 202-229). Lincoln, NE: University of Nebraska Press.
15. ^ Park, R. J., Brooks, G. A. and Scott, K. M. (n.d.). In memoriam: Franklin M. Henry.
16. ^ Martens, R. (1979). About smocks and jocks. *Journal of Sport Psychology*, 1, 94-99. Retrieved from [Essential readings in sport and exercise psychology](#).
17. ^ Orlick, T., & Partington, J. (1988). Mental links to excellence. *The Sport Psychologist*, 2(2), 105–130. Retrieved June 25, 2011, from [Precision Management Institute](#).
18. ^ Silva, J. M. (2010). No one told you when to run: The past and present is not the future of sport psychology. Keynote presentation, Association for Applied Sport Psychology, Providence, RI. Retrieved June 25, 2011, from <http://www.bgsu.edu/downloads/lib/file96561.pdf>.
19. ^ Become a certified consultant. Retrieved from <http://appliedsportpsych.org/>
20. ^ Bassham, L. (2011). History of the Mental Game.
21. ^ Abrams, M. (2010) *Anger Management and Sport; Understanding and Controlling Violence in Athletes* Champaign, IL: Human Kinetics
22. ^ Danish, S. J., & Hale, B. D. (1981). Toward an understanding of the practice of sport psychology. *Journal of Sport Psychology*, 3, 90-99. Retrieved June 25, 2011, from [PsycNET](#).
23. ^ Heyman, S. R. (1982). A reaction to Danish and Hale: A minority report. *Journal of Sport Psychology*, 4, 7-9. Retrieved June 25, 2011, from [PsycNET](#).
24. ^ Dishman, R. K. (1983). Identity crisis in North American sport psychology: Academics in professional issues. *Journal of Sport Psychology*, 5, 123-134. Retrieved June 25, 2011, from [PsycNET](#).
25. ^ Silva, J. M. (1989). Toward the professionalization of sport psychology. *The Sport Psychologist*, 3(3), 265-273. Retrieved June 25, 2011, from [PsycNET](#).
26. ^ Silva, J., Conroy, D., & Zizzi, S. (1999). Critical issues confronting the advancement of applied sport psychology. *Journal of Applied Sport Psychology*, 11(2), 298-320. [doi:10.1080/10413209908404206](https://doi.org/10.1080/10413209908404206).
27. ^ Hale, B., & Danish, S. (1999). Putting the Accreditation Cart Before the AAASP Horse: A Reply to Silva, Conroy and Zizzi. *Journal of Applied Sport Psychology*, 11(2), 321-328. [doi:10.1080/10413209908404207](https://doi.org/10.1080/10413209908404207).
28. ^ Marchant, D.B. (2010). Psychological assessment: Objective/self-report measures. In S. J. Hanrahan & M.B. Andersen (Eds.), *Routledge handbook of applied sport psychology* (pp. 111-119). London: Routledge.
29. ^ Jones, G., Hanton S., & Connaughton, D. (2002). What is this thing called mental toughness?: An investigation with elite performers. *Journal of Applied Sport Psychology*, 14, 211-224.
30. ^ Bandura, A. (1987). *Self-efficacy: The exercise of control* (see article)

30. ^ Bandura, A. (1997). *Self-efficacy: The exercise of control* (3rd ed.). New York: W.H. Freeman.
31. ^ Vealey, R.S. (1986). Conceptualization of sport-confidence and competitive orientation: Preliminary investigation and instrument development. *Journal of Sport Psychology*, 8(3), 221-246.
32. ^ Jones, G., Hanton, S., & Swain, A. (1994). Intensity and interpretation of anxiety symptoms in elite and non-elite sports performers. *Personality and Individual Differences*, 17(5), 657-663.
33. ^ Duda, J.L. & Treasure, D.C. (2006). Motivational processes and the facilitation of performance, persistence, and well-being in sport. In J.M. Williams (Ed.), *Applied Sport Psychology: Personal Growth to Peak Performance* (pp. 57-81). New York: McGraw-Hill.
34. ^ Gould, D., Collins, K., Lauer, L., & Chung, Y. (2007). Coaching life skills through football: A study of award winning high school coaches. *Journal of Applied Sport Psychology*, 19, 16-37.
35. ^ Danish, S.J., Forneris, T., & Wallace, I. (2005). Sport-based life skills programming in the schools. *Journal of Applied School Psychology*, 21(2), 41-62.
36. ^ Goodger, K., Gorely, T., Lavallee, D., & Harwood, C. (2007). Burnout in sport: A systematic review. *The Sport Psychologist*, 21, 127-151.
37. ^ Gould & Whitley, M. (2009). Sources and consequences of athletic burnout among college athletes. *Journal of Intercollegiate Athletics*, 2, 16-30.
38. ^ Knight, C. J., Boden, C. M., & Holt, N.J. (2010). Junior tennis players' preferences for parental behaviors. *Journal of Applied Sport Psychology*, 22, 377-391.
39. ^ Ames, C. (1992). Achievement goals, motivational climates and motivational processes. In C.G. Roberts (Ed.), *Motivation in sport and exercise* (pp. 161-176). Champaign, IL: Human Kinetics.
40. ^ Smith, R.E. (2006). Positive reinforcement, performance feedback, and performance enhancement. In J.M. Williams (Ed.), *Applied Sport Psychology: Personal Growth to Peak Performance* (pp. 40-56). New York: McGraw-Hill.
41. ^ Jowett, S. (2014). Interdependence Theory and Coach-Athlete Relationships. In Eklund & Tenenbaum (Eds), Sage Encyclopedia of Sport and Exercise Psychology. Sage
42. ^ Carron, A.V., Brawley, L.R., & Widmeyer, W.N. (1998). The measurement of cohesion in sport groups. In J.L. Duda (Ed.), *Advances in sport and exercise psychology measurement* (pp. 213-226). Morgantown, WV: Fitness Information Technology.
43. ^ Bandura, A. (2001). Social cognitive theory: An agentic perspective. *Annual Review of Psychology*, 52, 1-26.
44. ^ Barrow, J.C. (1977). The variables of leadership: A review and conceptual framework. *Academy of Management Review*, 2, 233-251.
45. ^ Balish, S. M., Eys, M. A., & Schulte-Hostedde, A. I. (2013). Evolutionary sport and exercise psychology: Integrating proximate and ultimate explanations. *Psychology of Sport and Exercise*, 14(3), 413-422. doi: 10.1016/j.psychsport.2012.12.006

46. ^ Williams, J. & Harris, D. (2006). Relaxation and energizing techniques for regulation of arousal. In Williams, J.M. (Ed.), *Applied Sport Psychology: Personal Growth to Peak Performance* (pp. 285-305). New York, NY: McGraw-Hill.
47. ^ "*Acceptance and Commitment Therapy Training*". *Act Mindfully*.
48. ^ Gardner, Frank (2007). *The Psychology of Enhancing Human Performance*. Spring Publishing Co.
49. ^ Schwanhausser, Lori. "*Application of the Mindfulness-Acceptance-Commitment (MAC) Protocol with an Adolescent Springboard Diver*". *Journal of Clinical Sports Psychology*.
50. ^ Vealey, R.S. (2005). Goal mapping. In Vealey, R.S. (Ed.), *Coaching for the Inner Edge* (pp. 149-177). Morgantown, WV: Fitness Information Technology.
51. ^ Locke, E. & Latham, G. (1985). The application of goal setting to sports. *Journal of Sport Psychology*, 7, 205-222.
52. ^ Gould, D. (2006). Goal setting for peak performance. In Williams, J.M. (Ed.), *Applied Sport Psychology: Personal Growth to Peak Performance* (pp. 240-259). New York, NY: McGraw-Hill.
53. ^ Kylo, L. & Landers, D. (1995). Goal setting in sport and exercise: A research synthesis to resolve the controversy. *Journal of Sport & Exercise Psychology*, 17, 117-137.
54. ^ [Monsma, Eva.\(2007\). Principles of Effective Goal Setting](#)
55. ^ <sup>a</sup> <sup>b</sup> Weinberg, Robert S. and Daniel Gould. "Goal Setting." Foundation of Sport and Exercise Psychology. Myles Schrag. Courier Printing, 2011. 350-351. Print
56. ^ Vealey, R.S. & Greenleaf, C.A. (2006). Seeing is believing: Understanding and using imagery in sport. In Williams, J.M. (Ed.), *Applied Sport Psychology: Personal Growth to Peak Performance* (pp. 306-348). New York, NY: McGraw-Hill.
57. ^ Marks, D. (1983). Mental imagery and consciousness: A theoretical overview. In A. Sheikh (Ed.) *Imagery: Current Theory, Research and Application* (pp. 96-130). New York: Wiley.
58. ^ Holmes, P.S. & Collins, D.J. (2001). The PETTLEP approach to motor imagery: A functional equivalence model for sport psychologists. *Journal of Applied Sport Psychology*, 13(1), 60-83.
59. ^ Weinberg, R. (2008). Does imagery work? Effects on performance and mental skills. *Journal of Imagery Research in Sport and Physical Activity*, 3(1), 1-21.
60. ^ Ravizza K, Hanson T. (1995). Heads up baseball: Playing the game one pitch at a time. Lincolnwood, IL: Masters Press.
61. ^ Vealey, R.S. (2005). P3 thinking. In Vealey, R.S. (Ed.), *Coaching for the Inner Edge* (pp. 201-224). Morgantown, WV: Fitness Information Technology.
62. ^ Hamilton, R.A., Scott, D., & MacDougall, M.P. (2007). Assessing the effectiveness of self-talk interventions on endurance performance. *Journal of Applied Sport Psychology*, 19, 226-239.
63. ^ Cognitive Techniques for Building Confidence and Enhancing Performance / Nate Zinsser, Linda Bunker, Jean M. Williams In *Applied*



*Sport Psychology: Personal Growth to Peak Performance* 2005

64. ^ Mood and memory. Bower, Gordon H. *American Psychologist*, Vol 36(2), Feb 1981, 129-148.
65. ^ Bandura, A. (1997). *Self-Efficacy: The Exercise of Control*. W.H. Freeman and Company: New York.
66. ^ Bandura, A. (1986). *Social Foundations of Thought and Action: A Social Cognitive Theory*. Englewood Cliffs, NJ: Prentice Hall
67. ^ Berger, B.G., Pargman, D., & Weinberg, R.S. (2006). *Foundations of Exercise Psychology*. Morgantown, WV: Fitness Information Technology.
68. ^ James, W. (1899). *Talks to teachers on psychology: And to students on some of life's ideals*. New York: Henry Holt and Company.
69. ^ Franz, S.I. & Hamilton, G.V. (1905). The effects of exercise upon the retardation in conditions of depression. *American Journal of Insanity*, 62, 249-256.
70. ^ Stathopoetou, G.; Powers, M. B.; Berry, A. C.; Smits, J. A. J.; Otto, M. W, (2006). "Exercise Interventions for Mental Health". *A Quantative Review*. **13**: 179. More than one of |pages= and |page= specified ([help](#))
71. ^ Kenyon, G.S. & Grogg, T.M. (Eds.). (1970). *Contemporary psychology of sport: Proceedings of the Second International Congress of Sport Psychology*. Chicago: The Athletic Institute.
72. ^ Morgan, W.P. (1985). Affective beneficence of vigorous physical activity. *Medicine & Science in Sports & Exercise*, 17(1), 94-100. [doi:10.1249/00005768-198502000-00015](https://doi.org/10.1249/00005768-198502000-00015).
73. ^ Bahrke, M.S., Morgan, W.P. (1978). Anxiety reduction following exercise and meditation. *Cognitive Therapy and Research*, 2(4), 323-333. [doi:10.1007/BF01172650](https://doi.org/10.1007/BF01172650).
74. ^ Dishman, R.K., Ickes, W., & Morgan, W.P. (1980). Self-motivation and adherence to habitual physical activity. *Journal of Applied Social Psychology*, 10(2), 115-132. [doi:10.1111/j.1559-1816.1980.tb00697.x](https://doi.org/10.1111/j.1559-1816.1980.tb00697.x).
75. ^ American Psychological Association Division 47. (n.d.). History. Retrieved from <http://www.apa47.org/aboutHistory.php>
76. ^ Berger, B.G., Pargman, D., & Weinberg, R.S. (2007). *Foundations of Exercise Psychology*. Morgantown, WV: Fitness Information Technology.
77. ^ Buckworth, J. & Dishman, R.K. (2002). *Exercise psychology*. Champaign, IL: Human Kinetics.
78. ^ "Moreau, D., & Conway, A. R. A. (2013). Cognitive enhancement: A comparative review of computerized and athletic training programs. *International Review of Sport and Exercise Psychology*, 6(1), 155-183. [doi:10.1080/1750984X.2012.758763](https://doi.org/10.1080/1750984X.2012.758763)"

## External links

- [Association for Applied Sport Psychology \(AASP\)](#)
- [Division 47: Exercise and Sport Psychology \(APA47\)](#) of the [American Psychological Association \(APA\)](#)
- [North American Society for the Psychology of Sport and Physical Activity](#)

(НАΣΨΨΑ)

- [European Federation of Sport Psychology \(FEPSAC\)](#)
- [International Society of Sport Psychology \(ISSP\)](#)
- [The British Association of Sport and Exercises Sciences \(BASES\)](#)
- [Canadian Society for Psychomotor Learning and Sport Psychology \(SCAPPS\)](#)
- [Australian Psychological Society \(APS\)](#)
- [Asian South Pacific Association of Sport Psychology \(ASPASP\)](#)
- [Sport Psychology](#)