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Chapter 1

Physical Education: An Introduction

MEANING AND DEFINITION OF PHYSICAL EDUCATION

Physical Education is the process by which changes in the individual are bought about through movements' experiences. Physical Education aims not only at physical development but is also concerned with education of the whole person through physical activities. It would not be wrong if we say that Physical education is the play-way method of education.

Various Definitions of Physical Education are:

- **Barrow defined Physical Education as an education of and through human movement where many of educational objectives are achieved by means of big muscle activities involving sports, games, gymnastic, dance and exercise.**
- **According to Webster's Dictionary Physical education is a part of education which gives instructions in the development and care of the body randing from simple callisthenic exercises to a course of study providing training in hygiene, gymnastics and the performance and management of athletics games.**
- **Jackson R. Sharman points out that physical education is that part of education which takes place through activities, which involves the motor mechanism of human body which results in an individual's formulating behaviour patterns.**
- **Charles A. Bucher defines physical education, an integral part of% total education process, is a field of endeavour which has as its aim the development of physically, mentally, emotionally and socially fit citizens through the medium of physicalactivities which have been selected with a view to realizing these outcomes."**
- **Central Advisory Board of physical Education and Recreation defines Physical education as an education through physical activities for the development of total personality of the child to its fullness and perfection in body, mind and spirit.**

AIMS AND OBJECTIVES OF PHYSICAL EDUCATION

AIMS

The ultimate goal is final end aim of physical education, it the way and achieved some certain objectives. The general education like aim of physical education is to

develop human personality in its totality well planned activity programs. In physical education aim at the all round development of the personality of an individual or some development of human personality and it includes physical, mental, social, emotional and moral aspects to make an individual a good citizen. The physical education means at making an individual physical fit, mentally alert, emotionally balanced, socially well adjusted, morally true and spiritually uplifted. The objectives of Physical Education are steps considered towards the attainment of the aim and the particular and precise means employed to realize an aim. An aim is achieved it become an objective in the action that goal on continuing. There some objectives of physical education are the objective of physical fitness is essential to leading a happy, vigorous and abundant life. The second is the objective of social efficiency is concerned with one proper adaptation to group living and all these qualities help a person to make him a good citizen. Another objectives of physical education is culture, it aims at developing an understanding and appreciation of one own local environment as well as the environment and a person understand the history, culture, religious practices etc and the aesthetic values associated with these activities. So find the best step the ultimate goal in aims of physical education.

OBJECTIVES

Physical education is an important part of every school curriculum and a class every pupil awaits. Physical education is that segment of the daily timetable that every student eagerly waits to attend, as it is the only official time when the students can be on the grounds, engaged in their favorite sports. One of the main objectives of physical education is to bring in this element of joy to the academic orientation of schools. Physical education aims at dedicating a daily time for some physical activity for the students. The physical training class, as it is also called, involves sports, games, exercise and most importantly, a break from the sedentary learning indoors. One of the other important objectives of physical education is to instill in the students the values and skills of maintaining a healthy lifestyle. Daily physical activity promotes an awareness of health and well being among students. It boosts them to engage in physical activities on a daily basis. It promotes them to lead a healthy life in adulthood. Physical education classes constitute programs to promote physical fitness in students, train them in sports, help them understand rules and strategies in playing and teach them to work as a team. A very vital factor in physical education is to develop interpersonal skills in children. Sports aim at making them team players, developing a sportsman spirit in them and enhancing their competitive spirit. Sports that form a part of physical education classes help the students invest time in fruitful and competitive activities. One of the other important objectives of physical education is to inculcate in the minds of the students, the importance of personal hygiene and cleanliness. Physical education classes aim at teaching the students, the habits of personal cleanliness and the importance of the maintenance of personal hygiene in life. Physical education classes also impart sex-education to the students, help them clarify their doubts and find answers to all the questions that occur to their minds. The sports, which are a part of the physical education class, help in developing motor skills in children. The ability to hold a racket or a bat, the ability to catch a ball and the ability to swing a bat are some examples of the motor

abilities that can develop with the help of sports. The physical activity that is involved in physical education helps the students in bringing discipline to body posture and body movements. Hitting a ball with a bat or a shuttle with a racket as also aiming a ball for a goal or catching it to get the opponent team out, are some of the commonly observed actions in sports and are extremely beneficial in improving hand-eye coordination. The very important objective of physical education is to encourage the upcoming sportsmen and women of the crowd. Physical education gives the budding sports people a platform to exhibit their talents. Those with a flair for sports get an opportunity to display their talent. Their small step on the school playground can eventually turn into a huge leap in the field of sports. Moreover, sports refresh the students' minds. Physical education class becomes enjoyable for the kids while proving helpful for their overall growth and development. Physical education is indeed one of the most fruitful activities of a school schedule.

NEED AND IMPORTANCE OF PHYSICAL EDUCATION

In the Present World of Space age and automation era, all human beings appear to be living a more and more inactive life. They ride instead of walk, sit instead of stand and watches instead of participants. Such type of inactivity or sedentary life is detrimental to mental and physical health. Thus, there is great need for physical education as a part of balanced living. Physical education which is commonly a part of the curriculum at school level includes training in the development and care of the human body and maintaining physical fitness. Physical education is also about sharpening overall cognitive abilities and motor skills via athletics, exercise and various other physical activities like martial arts and dance. Here are some of the benefits that highlight the importance of physical education.

MAINTAINING SOUND PHYSICAL FITNESS

Physical fitness is one of the most important elements of leading a healthy lifestyle. Physical education promotes the importance of inclusion of a regular fitness activity in the routine. This helps the students to maintain their fitness, develop their muscular strength, increase their stamina and thus stretch their physical abilities to an optimum level. Physical fitness helps to inculcate the importance of maintaining a healthy body, which in turn keeps them happy and energized. Sound physical fitness promotes, increased absorption of nutrients, better functioning of digestion and all other physiological processes and hence results in all round fitness.

OVERALL CONFIDENCE BOOSTER

Indulging in sports be it team sports or dual and individual sports, leads to a major boost in self-confidence. The ability to go on the field and perform instills a sense of self-confidence, which is very important for the development of a person's character. Every victory achieved on the field, helps to boost a person's self-confidence. Moreover, the ability to accept defeat on field and yet believe in your own capabilities brings a sense of positive attitude as well. Thus participation in sports, martial arts or even dance and aerobics, is always a positive influence on a student's overall personality and character and works wonders for his/her self-confidence.

AWARENESS ABOUT IMPORTANT HEALTH AND NUTRITION ISSUES

Physical education classes are about participating in the physical fitness and recreation activities, but they are also about gaining knowledge about the overall aspects of physical health. For example in today's world the problems of obesity, or anemia and bulimia are rampant amongst teenagers. Physical education provides an excellent opportunity for teachers to promote the benefits of healthy and nutritious food and cite the ill effects of junk food. Promoting sound eating practices and guidelines for nutrition are some of the very valuable lessons that can be taught through physical education classes at school level.

INCULCATING SPORTSMANSHIP AND TEAM SPIRIT

Participation in team sports, or even dual sports helps to imbibe a sense of team spirit amongst the students. While participating in team sports, the children have to function as an entire team, and hence they learn how to organize themselves and function together. This process of team building hones a person's overall communications skills and the ability to get along with different kind of people. Thus participating in team sports instills a sense of team spirit, which is a great value addition to anyone's personality and helps a lot in all the future endeavors.

DEVELOPMENT OF MOTOR SKILLS

The ability to concentrate, the ability to swing the racket just at the right time are some of the examples of development of motor skills in the physical education classes. Participation in sports and several physical education activities helps to sharpen the reflexes of the students. It also brings order and discipline to the body movements and helps in development of a sound body posture as well. The hand-eye co-ordination improves as well.

IMPORTANCE OF HYGIENE AND SEX EDUCATION

Physical education classes also include lessons about the importance of personal hygiene and importance of cleanliness. Thus the physical education classes help the students to know the important hygiene practices that must be practiced in order to maintain the health and well being throughout the life. In addition to this, the physical education classes also cover an important aspect that the children have to deal with at the age of puberty. Physical education classes also impart sex-education and hence help the students deal with their queries and doubts about the subject of sexuality.

ENHANCING OVERALL COGNITIVE ABILITIES

Physical education classes help to enhance the overall cognitive abilities of the students, since they get a lot of knowledge about the different kinds of sports and physical activities that they indulge in. For example a person who is participating in a specific type of martial arts class, will also gain knowledge about the origins of the martial art, and the other practices and historical significance associated with it. Thus physical education helps to enrich the knowledge bank of the students.

ENCOURAGING BUDDING SPORTSMEN

Physical education classes are an excellent opportunity for all the budding sportsmen and sportswomen who wish to make their mark in the world of sports. Physical education classes allow the budding sportsmen and sportswomen to explore and experiment with several areas until they find what interests them. After this, physical education classes also allow the students to indulge the sport of their choice and then go ahead to participate in several tournaments and competitions, which help to give the students an exposure to the competitive world of sports.

A STRESS BUSTER AND SOURCE OF ENJOYMENT

In addition to the health benefits and the knowledge benefits that the students get from the physical education classes, one important aspect of it remains to be recreation. Students, who are busy with their other subjects in the curriculum, often get exhausted with the listening, reading and writing pattern of studying and need a recreational activity as a source of recreation. Sports and other physical fitness activities offered in the physical education class are a welcome break for the students.

PROMOTING HEALTHY LIFESTYLE IN ADULTHOOD

Children, who learn the importance of health and hygiene in their early ages, tend to grow up to be responsible and healthy adults who are well aware of the benefits of a healthy lifestyle. Thus the overall physical education program, that includes different types of physical activities and sports and also provides important information about hygiene and overall health, helps in creating well-informed pupils. A well-balanced and all-round physical education class helps to create responsible adults who know the importance of a healthy lifestyle.

PSYCHOLOGICAL ASPECTS OF PHYSICAL EDUCATION

DEFINITION OF PSYCHOLOGY AND SPORT PSYCHOLOGY

Psychology

Psychology is a broad discipline which seeks to analyze the human mind. Different disciplines within this field study why people behave, think, and feel the way they do. There are many different ways to approach psychology, from examining biology's role in mental health to the role of the environment on behavior. Some psychologists focus only on how the mind develops, while others counsel patients to help improve their daily lives. The history of psychology dates back at least to 1879, when the German psychologist Wilhelm Wundt founded the first laboratory exclusively devoted to psychology. The most famous psychologist is perhaps Sigmund Freud, an Austrian who founded the field of psychoanalysis. Although Freud's theories had a huge impact on a wide variety of areas, including literature and film, many of his ideas are considered subjective from a modern perspective. There are dozens of different sub-disciplines of psychology, with each taking a somewhat different approach to understanding the mind. Some sub-disciplines include social psychology, clinical psychology, occupational health, and cognitive psychology. It is important to note that, even within a particular field, there may be different approaches. Clinical psychology, for example, has four main

schools: psychodynamic, humanistic, cognitive and behavioral, and systems therapy. The field of psychology is far wider than the image of a patient reclining on a couch, talking to his therapist or a researcher studying a rat running through a maze. A forensic psychologist may help legal professionals investigate allegations of child abuse or evaluate a suspect's competency. A legal psychologist might act as an adviser to a judge or as a trial consultant. An industrial-organizational psychologist might work with a company to help hire the best applicants or help improve workplace morale. A sports psychologist might work one-on-one with a player to help overcome a performance barrier, or work with an entire team to help improve group cohesion. Psychology should be further distinguished between research psychology, which seeks to establish facts about the mind by conducting experiments, and applied psychology, which seeks to help people with their problems. Some experiments have shown that the success rate for solving one's problems using only psychotherapy — talking to a professional psychologist — is the same as talking to a close friend, so the efficacy of applied or clinical psychology as a discipline can sometimes be difficult to quantify. Alternatively, many patients report that therapy has been greatly helpful in their lives. As compared to other hard sciences, like physics and biology, some critics argue the field suffers from a lack of scientific rigor. The objectivity of tools like surveys, through which data is collected in some cases, are often questioned. This is perhaps closely associated with the complexity of the mind which we haven't quite been able to fully or substantially understand. Psychological studies, however, continue to be held in order to try to get a better understanding of the mind and how it works. Fields like neuropsychology, which looks at how the structure of the brain affects mental health, use neuroimaging technology. Tools such as functional magnetic resonance imaging and positron emission tomography (PET) scans have assisted psychologists in making correlations between mental problems and biological states. For instance, in the 1980s, it was realized the schizophrenia was mainly caused by biological factors rather than maternal neglect or some other environmental explanation.

Etymology

The word psychology literally means, "study of the soul" and logia, translated as "study of" or "research". The Latin word psychologia was first used by the Croatian humanist and Latinist Marko Marulic in his book, Psichiologia de ratione animae humanae in the late 15th century or early 16th century. The earliest known reference to the word psychology in English was by Steven Blankaart in 1693 in The Physical Dictionary which refers to "Anatomy, which treats of the Body, and Psychology, which treats of the Soul."

History

The study of psychology in philosophical context dates back to the ancient civilizations of Egypt, Greece, China, India, and Persia. Historians point to the writings of ancient Greek philosophers, such as Thales, Plato, and Aristotle, as the first significant body of work in the West to be rich in psychological thought.

- ***Structuralism:*** **German physician Wilhelm Wundt is credited with introducing psychological discovery into a laboratory setting. Known as the "father of**

experimental psychology", he founded the first psychological laboratory, at Leipzig University, in 1879. Wundt focused on breaking down mental processes into the most basic components, starting a school of psychology that is called structuralism. Edward Titchener was another major structuralist thinker.

- ***Functionalism:*** **Functionalism formed as a reaction to the theories of the structuralist school of thought and was heavily influenced by the work of the American philosopher and psychologist William James. James felt that psychology should have practical value, and that psychologists should find out how the mind can function to a person's benefit. In his book, Principles of Psychology, published in 1890, he laid the foundations for many of the questions that psychologists would explore for years to come. Other major functionalist thinkers included John Dewey and Harvey Carr. Other 19th-century contributors to the field include the German psychologist Hermann Ebbinghaus, a pioneer in the experimental study of memory, who developed quantitative models of learning and forgetting at the University of Berlin; and the Russian-Soviet physiologist Ivan Pavlov, who discovered in dogs a learning process that was later termed "classical conditioning" and applied to human beings. Starting in the 1950s, the experimental techniques set forth by Wundt, James, Ebbinghaus, and others would be reiterated as experimental psychology became increasingly cognitive—concerned with information and its processing—and, eventually, constituted a part of the wider cognitive science. In its early years, this development had been seen as a "revolution", as it both responded to and reacted against strains of thought—including psychodynamics and behaviorism—that had developed in the meantime.**
- ***Psychoanalysis:*** **From the 1890s until his death in 1939, the Austrian physician Sigmund Freud developed psychoanalysis, a method of investigation of the mind and the way one thinks; a systematized set of theories about human behavior; and a form of psychotherapy to treat psychological or emotional distress, especially unconscious conflict. Freud's psychoanalytic theory was largely based on interpretive methods, introspection and clinical observations. It became very well-known, largely because it tackled subjects such as sexuality, repression, and the unconscious mind as general aspects of psychological development. These were largely considered taboo subjects at the time, and Freud provided a catalyst for them to be openly discussed in polite society. Clinically, Freud helped to pioneer the method of free association and a therapeutic interest in dream interpretation. Freud had a significant influence on Swiss psychiatrist Carl Jung, whose analytical psychology became an alternative form of depth psychology. Other well-known psychoanalytic scholars of the mid-20th century included psychoanalysts, psychologists, psychiatrists, and philosophers. Among these thinkers were Erik Erickson, Melanie Klein, D. W. Winnicott, Karen Horney, Erich Fromm, John Bowlby and Sigmund Freud's daughter, Anna Freud. Throughout the 20th century, psychoanalysis evolved into diverse schools of thought, most of which may be classed as Neo-Freudian.[c] Psychoanalytic theory and therapy**

were criticized by psychologists and philosophers such as B. F. Skinner, Hans Eysenck, and Karl Popper. Popper, a philosopher of science, argued that Freud's, as well as Alfred Adler's, psychoanalytic theories included enough ad hoc safeguards against empirical contradiction to keep the theories outside the realm of scientific inquiry. By contrast, Eysenck maintained that although Freudian ideas could be subjected to experimental science, they had not withstood experimental tests. By the 20th century, psychology departments in American universities had become experimentally oriented, marginalizing Freudian theory and regarding it as a "desiccated and dead" historical artifact. Meanwhile, however, researchers in the emerging field of neuro-psychoanalysis defended some of Freud's ideas on scientific grounds,[d] while scholars of the humanities maintained that Freud was not a "scientist at all, but... an interpreter."

- *Behaviorism:* In the United States, behaviorism became the dominant school of thought during the 1950s. Behaviorism was founded in the early 20th century by John B. Watson, and embraced and extended by Edward Thorndike, Clark L. Hull, Edward C. Tolman, and later B. F. Skinner. Theories of learning emphasized the ways in which people might be predisposed, or conditioned, by their environments to behave in certain ways. Classical conditioning was an early behaviorist model. It posited that behavioral tendencies are determined by immediate associations between various environmental stimuli and the degree of pleasure or pain that follows. Behavioral patterns, then, were understood to consist of organisms' conditioned responses to the stimuli in their environment. The stimuli were held to exert influence in proportion to their prior repetition or to the previous intensity of their associated pain or pleasure. Much research consisted of laboratory-based animal experimentation, which was increasing in popularity as physiology grew more sophisticated. Skinner's behaviorism shared with its predecessors a philosophical inclination toward positivism and determinism. He believed that the contents of the mind were not open to scientific scrutiny and that scientific psychology should emphasize the study of observable behavior. He focused on behavior–environment relations and analyzed overt and covert behavior as a function of the organism interacting with its environment. Behaviorists usually rejected or deemphasized dualistic explanations such as "mind" or "consciousness"; and, in lieu of probing an "unconscious mind" that underlies unawareness, they spoke of the "contingency-shaped behaviors" in which unawareness becomes outwardly manifest. Among the behaviorists' most famous creations are John B. Watson's Little Albert experiment, which applied classical conditioning to the developing human child, and Skinner's notion of operant conditioning, which acknowledged that human agency could affect patterns and cycles of environmental stimuli and behavioral responses. Linguist Noam Chomsky's critique of the behaviorist model of language acquisition is widely regarded as a key factor in the decline of behaviorism's prominence. Martin Seligman and colleagues discovered that the conditioning of dogs led to outcomes that opposed the predictions of behaviorism. But

Skinner's behaviorism did not die, perhaps in part because it generated successful practical applications. The fall of behaviorism as an overarching model in psychology, however, gave way to a new dominant paradigm: cognitive approaches.

- ***Humanism:*** **Humanistic psychology was developed in the 1950s in reaction to both behaviorism and psychoanalysis. By using phenomenology, intersubjectivity and first-person categories, the humanistic approach sought to glimpse the whole person—not just the fragmented parts of the personality or cognitive functioning. Humanism focused on fundamentally and uniquely human issues, such as individual free will, personal growth, self-actualization, self-identity, death, aloneness, freedom, and meaning. The humanistic approach was distinguished by its emphasis on subjective meaning, rejection of determinism, and concern for positive growth rather than pathology. Some of the founders of the humanistic school of thought were American psychologists Abraham Maslow, who formulated a hierarchy of human needs, and Carl Rogers, who created and developed client-centered therapy. Later, positive psychology opened up humanistic themes to scientific modes of exploration.**
- ***Gestalt:*** **Wolfgang Kohler, Max Wertheimer and Kurt Koffka co-founded the school of Gestalt psychology. This approach is based upon the idea that individuals experience things as unified wholes. This approach to psychology began in Germany and Austria during the late 19th century in response to the molecular approach of structuralism. Rather than breaking down thoughts and behavior to their smallest element, the Gestalt position maintains that the whole of experience is important, and the whole is different than the sum of its parts. Gestalt psychology should not be confused with the Gestalt therapy of Fritz Perls, which is only peripherally linked to Gestalt psychology.**
- ***Existentialism:*** **Influenced largely by the work of German philosopher Martin Heidegger and Danish philosopher Søren Kierkegaard, psychoanalytically trained American psychologist Rollo May pioneered an existential breed of psychology, which included existential therapy, in the 1950s and 1960s. Existential psychologists differed from others often classified as humanistic in their comparatively neutral view of human nature and in their relatively positive assessment of anxiety. Existential psychologists emphasized the humanistic themes of death, free will, and meaning, suggesting that meaning can be shaped by myths, or narrative patterns, and that it can be encouraged by an acceptance of the free will requisite to an authentic, albeit often anxious, regard for death and other future prospects. Austrian existential psychiatrist and Holocaust survivor Viktor Frankl drew evidence of meaning's therapeutic power from reflections garnered from his own internment, and he created a variety of existential psychotherapy called logotherapy. In addition to May and Frankl, Swiss psychoanalyst Ludwig Binswanger and American psychologist George Kelly may be said to belong to the existential school.**
- ***Cognitivism:*** **Cognitive psychology is the branch of psychology that studies mental processes including how people think, perceive, remember, and learn.**

As part of the larger field of cognitive science, this branch of psychology is related to other disciplines including neuroscience, philosophy, and linguistics. Noam Chomsky helped to ignite a "cognitive revolution" in psychology when he criticized the behaviorists' notions of "stimulus", "response", and "reinforcement", arguing that such ideas—which Skinner had borrowed from animal experiments in the laboratory—could be applied to complex human behavior, most notably language acquisition, in only a vague and superficial manner. The postulation that humans are born with the instinct or "innate facility" for acquiring language posed a challenge to the behaviorist position that all behavior is contingent upon learning and reinforcement. Social learning theorists such as Albert Bandura argued that the child's environment could make contributions of its own to the behaviors of an observant subject. Meanwhile, accumulating technology helped to renew interest and belief in the mental states and representations—i.e., the cognition—that had fallen out of favor with behaviorists. English neuroscientist Charles Sherrington and Canadian psychologist Donald O. Hebb used experimental methods to link psychological phenomena with the structure and function of the brain. With the rise of computer science and artificial intelligence, analogies were drawn between the processing of information by humans and information processing by machines. Research in cognition had proven practical since World War II, when it aided in the understanding of weapons operation. By the late 20th century, though, cognitivism had become the dominant paradigm of mainstream psychology, and cognitive psychology emerged as a popular branch. Assuming both that the covert mind should be studied and that the scientific method should be used to study it, cognitive psychologists set such concepts as "subliminal processing" and "implicit memory" in place of the psychoanalytic "unconscious mind" or the behavioristic "contingency-shaped behaviors". Elements of behaviorism and cognitive psychology were synthesized to form the basis of cognitive behavioral therapy, a form of psychotherapy modified from techniques developed by American psychologist Albert Ellis and American psychiatrist Aaron T. Beck. Cognitive psychology was subsumed along with other disciplines, such as philosophy of mind, computer science, and neuroscience, under the umbrella discipline of cognitive science.

Biopsychosocial Model

The biopsychosocial model is an integrated perspective toward understanding consciousness, behavior, and social interaction. It assumes that any given behavior or mental process affects and is affected by dynamically interrelated biological, psychological, and social factors. The psychological aspect refers to the role that cognition and emotions play in any given psychological phenomenon—for example, the effect of mood or beliefs and expectations on an individual's reactions to an event. The biological aspect refers to the role of biological factors in psychological phenomena—for example, the effect of the prenatal environment on brain development and cognitive abilities, or the influence of genes on individual dispositions. The socio-

cultural aspect refers to the role that social and cultural environments play in a given psychological phenomenon—for example, the role of parental or peer influence in the behaviors or characteristics of an individual.

Subfields

Psychology encompasses a vast domain, and includes many different approaches to the study of mental processes and behavior.

- ***Biological:*** Biological psychology and a number of related fields study the biological substrates of behavior and mental states. Behavioral neuroscience uses animal models to study the neural, genetic, cellular mechanisms of human behavior and cognition, cognitive neuroscientists investigate the neural correlates of psychological processes in humans using neural imaging tools, and neuropsychologists conduct psychological assessments to determine, for instance, specific aspects and extent of cognitive deficit caused by brain damage or disease.
- ***Clinical:*** Clinical psychology includes the study and application of psychology for the purpose of understanding, preventing, and relieving psychologically based distress or dysfunction and to promote subjective well-being and personal development. Central to its practice are psychological assessment and psychotherapy, although clinical psychologists may also engage in research, teaching, consultation, forensic testimony, and program development and administration. Some clinical psychologists may focus on the clinical management of patients with brain injury—this area is known as clinical neuropsychology. In many countries, clinical psychology is a regulated mental health profession. The work performed by clinical psychologists tends to be influenced by various therapeutic approaches, all of which involve a formal relationship between professional and client. The various therapeutic approaches and practices are associated with different theoretical perspectives and employ different procedures intended to form a therapeutic alliance, explore the nature of psychological problems, and encourage new ways of thinking, feeling, or behaving. Four major theoretical perspectives are psychodynamic, cognitive behavioral, existential-humanistic, and systems or family therapy. There has been a growing movement to integrate the various therapeutic approaches, especially with an increased understanding of issues regarding culture, gender, spirituality, and sexual-orientation. With the advent of more robust research findings regarding psychotherapy, there is evidence that most of the major therapies are about of equal effectiveness, with the key common element being a strong therapeutic alliance. Because of this, more training programs and psychologists are now adopting an eclectic therapeutic orientation.
- ***Cognitive:*** Cognitive psychology studies cognition, the mental processes underlying mental activity. Perception, learning, problem solving, reasoning, thinking, memory, attention, language and emotion are areas of research. Classical cognitive psychology is associated with a school of thought known as cognitivism, whose adherents argue for an information processing model

of mental function, informed by functionalism and experimental psychology. On a broader level, cognitive science is an interdisciplinary enterprise of cognitive psychologists, cognitive neuroscientists, researchers in artificial intelligence, linguists, human–computer interaction, computational neuroscience, logicians and social scientists. Computational models are sometimes used to simulate phenomena of interest. Computational models provide a tool for studying the functional organization of the mind whereas neuroscience provides measures of brain activity.

- ***Comparative:*** **Comparative psychology refers to the study of the behavior and mental life of animals other than human beings. It is related to disciplines outside of psychology that study animal behavior such as ethology. Although the field of psychology is primarily concerned with humans the behavior and mental processes of animals is also an important part of psychological research. This being either as a subject in its own right or with strong emphasis about evolutionary links, and somewhat more controversially, as a way of gaining an insight into human psychology. This is achieved by means of comparison or via animal models of emotional and behavior systems as seen in neuroscience of psychology.**
- **Developmental: Mainly focusing on the development of the human mind through the life span, developmental psychology seeks to understand how people come to perceive, understand, and act within the world and how these processes change as they age. This may focus on intellectual, cognitive, neural, social, or moral development. Researchers who study children use a number of unique research methods to make observations in natural settings or to engage them in experimental tasks. Such tasks often resemble specially designed games and activities that are both enjoyable for the child and scientifically useful, and researchers have even devised clever methods to study the mental processes of small infants. In addition to studying children, developmental psychologists also study aging and processes throughout the life span, especially at other times of rapid change. Developmental psychologists draw on the full range of psychological theories to inform their research.**
- ***Educational and School:*** **Educational psychology is the study of how humans learn in educational settings, the effectiveness of educational interventions, the psychology of teaching, and the social psychology of schools as organizations. The work of child psychologists such as Lev Vygotsky, Jean Piaget, Bernard Luskin and Jerome Bruner has been influential in creating teaching methods and educational practices. Educational psychology is often included in teacher education programs, in places such as North America, Australia, and New Zealand. School psychology combines principles from educational psychology and clinical psychology to understand and treat students with learning disabilities; to foster the intellectual growth of "gifted" students; to facilitate prosocial behaviors in adolescents; and otherwise to promote safe, supportive, and effective learning environments. School psychologists are trained in educational and behavioral assessment,**

intervention, prevention, and consultation, and many have extensive training in research.

- *Industrial-organizational:* Industrial and organizational psychology applies psychological concepts and methods to optimize human potential in the workplace. Personnel psychology, a subfield of I-O psychology, applies the methods and principles of psychology in selecting and evaluating workers. I-O psychology's other subfield, organizational psychology, examines the effects of work environments and management styles on worker motivation, job satisfaction, and productivity.
- *Personality:* Personality psychology is concerned with enduring patterns of behavior, thought, and emotion in individuals, commonly referred to as personality. Theories of personality vary across different psychological schools and orientations. They carry different assumptions about such issues as the role of the unconscious and the importance of childhood experience. According to Freud, personality is based on the dynamic interactions of the id, ego, and super-ego. Trait theorists, in contrast, attempt to analyze personality in terms of a discrete number of key traits by the statistical method of factor analysis. The number of proposed traits has varied widely. An early model proposed by Hans Eysenck suggested that there are three traits that comprise human personality: extraversion-introversion, neuroticism, and psychoticism. Raymond Cattell proposed a theory of 16 personality factors. The "Big Five", or Five Factor Model, proposed by Lewis Goldberg, currently has strong support among trait theorists.
- *Social:* Social psychology is the study of how humans think about each other and how they relate to each other. Social psychologists study such topics as the influence of others on an individual's behavior, and the formation of beliefs, attitudes, and stereotypes about other people. Social cognition fuses elements of social and cognitive psychology in order to understand how people process, remember, and distort social information. The study of group dynamics reveals information about the nature and potential optimization of leadership, communication, and other phenomena that emerge at least at the microsocial level. In recent years, many social psychologists have become increasingly interested in implicit measures, mediational models, and the interaction of both person and social variables in accounting for behavior.

Research Methods

Psychology tends to be eclectic, drawing on knowledge from other fields to help explain and understand psychological phenomena. Additionally, psychologists make extensive use of the three modes of inference that were identified by C. S. Peirce: deduction, induction, and abduction. While often employing deductive-nomological reasoning, they also rely on inductive reasoning to generate explanations. For example, evolutionary psychologists attempt to explain psychological traits—such as memory, perception, or language—as adaptations, that is, as the functional products of natural selection or sexual selection. Psychologists may conduct basic research aiming for further understanding in a particular area of interest in psychology, or conduct applied

research to solve problems in the clinic, workplace or other areas. Masters level clinical programs aim to train students in both research methods and evidence-based practice. Professional associations have established guidelines for ethics, training, research methodology and professional practice. In addition, depending on the country, state or region, psychological services and the title "psychologist" may be governed by statute and psychologists who offer services to the public are usually required to be licensed.

- ***Qualitative and Quantitative Research:*** **Research in most areas of psychology is conducted in accord with the standards of the scientific method. Psychological researchers seek the emergence of theoretically interesting categories and hypotheses from data, using qualitative or quantitative methods (or both). Qualitative psychological research methods include interviews, first-hand observation, and participant observation. Qualitative researchers sometimes aim to enrich interpretations or critiques of symbols, subjective experiences, or social structures. Similar hermeneutic and critical aims have also been served by "quantitative methods", as in Erich Fromm's study of Nazi voting or Stanley Milgram's studies of obedience to authority. Quantitative psychological research lends itself to the statistical testing of hypotheses. Quantitatively oriented research designs include the experiment, quasi-experiment, cross-sectional study, case-control study, and longitudinal study. The measurement and operationalization of important constructs is an essential part of these research designs. Statistical methods include the Pearson product-moment correlation coefficient, the analysis of variance, multiple linear regression, logistic regression, structural equation modeling, and hierarchical linear modeling.**
- ***Controlled Experiments:*** **Experimental psychological research is conducted in a laboratory under controlled conditions. This method of research relies on the application of the scientific method to understand behavior. Experimenters use several types of measurements, including rate of response, reaction time, and various psychometric measurements. Experiments are designed to test specific hypotheses (deductive approach) or evaluate functional relationships (inductive approach). A true experiment with random allocation of subjects to conditions allows researchers to infer causal relationships between different aspects of behavior and the environment. In an experiment, one or more variables of interest are controlled by the experimenter (independent variable) and another variable is measured in response to different conditions (dependent variable). Experiments are one of the primary research methods in many areas of psychology, particularly cognitive/psychonomics, mathematical psychology, psychophysiology and biological psychology/ cognitive neuroscience. Experiments on humans have been put under some controls, namely informed and voluntary consent. After World War II, the Nuremberg Code was established, because of Nazi abuses of experimental subjects. Later, most countries (and scientific journals) adopted the Declaration of Helsinki. In the US, the National Institutes of Health established the Institutional Review Board in 1966, and in 1974 adopted the National Research Act. All of these measures encouraged researchers to**

obtain informed consent from human participants in experimental studies. A number of influential studies led to the establishment of this rule; such studies included the MIT and Fernald School radioisotope studies, the Thalidomide tragedy, the Willowbrook hepatitis study, and Stanley Milgram's studies of obedience to authority.

- ***Survey Questionnaires:*** **Statistical surveys are used in psychology for measuring attitudes and traits, monitoring changes in mood, checking the validity of experimental manipulations, and for a wide variety of other psychological topics. Most commonly, psychologists use paper-and-pencil surveys. However, surveys are also conducted over the phone or through e-mail. Increasingly, web-based surveys are being used in research. Similar methodology is also used in applied setting, such as clinical assessment and personnel assessment.**
- ***Longitudinal Studies:*** **Longitudinal studies are often used in psychology to study developmental trends across the life span, and in sociology to study life events throughout lifetimes or generations. The reason for this is that unlike cross-sectional studies, longitudinal studies track the same people, and therefore the differences observed in those people are less likely to be the result of cultural differences across generations. Because of this benefit, longitudinal studies make observing changes more accurate and they are applied in various other fields. Because most longitudinal studies are observational, in the sense that they observe the state of the world without manipulating it, it has been argued that they may have less power to detect causal relationships than do experiments. They also suffer methodological limitations such as from selective attrition because people with similar characteristics maybe more likely to drop out of the study making it difficult to analyze. Some longitudinal studies are experiments, called repeated-measures experiments. Psychologists often use the crossover design to reduce the influence of confounding covariates and to reduce the number of subjects.**
- ***Observation in Natural Settings:*** **In the same way Jane Goodall studied the role of chimpanzee social and family life, psychologists conduct similar observational studies in human social, professional and family lives. Sometimes the participants are aware they are being observed and other times it is covert: the participants do not know they are being observed. Ethical guidelines need to be taken into consideration when covert observation is being carried out.**
- ***Qualitative and Descriptive Research:*** **Research designed to answer questions about the current state of affairs such as the thoughts, feelings and behaviors of individuals is known as descriptive research. Descriptive research can be qualitative or quantitative in orientation. Qualitative research is descriptive research that is focused on observing and describing events as they occur, with the goal of capturing all of the richness of everyday behavior and with the hope of discovering and understanding phenomena that might have been missed if only more cursory examinations have been made.**

- ***Neuropsychological Methods:*** **Neuropsychology seeks to connect aspects of behavior and mental activity with the structure and function of the brain. Cognitive neuropsychology and cognitive neuropsychiatry study neurological or mental impairment in an attempt to infer theories of normal mind and brain function. This typically involves looking for differences in patterns of remaining ability (known as 'functional disassociations') which can give clues as to whether abilities are composed of smaller functions, or are controlled by a single cognitive mechanism. In addition, experimental techniques are often used to study the neuropsychology of healthy individuals. These include behavioral experiments, brain-scanning or functional neuroimaging, used to examine the activity of the brain during task performance, and techniques such as transcranial magnetic stimulation, which can safely alter the function of small brain areas to reveal their importance in mental operations.**
- ***Computational Modeling:*** **Computational modeling is a tool often used in mathematical psychology and cognitive psychology to simulate a particular behavior using a computer. This method has several advantages. Since modern computers process extremely quickly, many simulations can be run in a short time, allowing for a great deal of statistical power. Modeling also allows psychologists to visualize hypotheses about the functional organization of mental events that couldn't be directly observed in a human. Several different types of modeling are used to study behavior. Connectionism uses neural networks to simulate the brain. Another method is symbolic modeling, which represents many different mental objects using variables and rules. Other types of modeling include dynamic systems and stochastic modeling.**
- ***Animal Studies:*** **Animal learning experiments aid in investigating the biological basis of teaching, memory and behavior. In the 1890s, Russian physiologist Ivan Pavlov famously used dogs to demonstrate classical conditioning. Non-human primates, cats, dogs, rats and other rodents are often used in psychological experiments. Ideally, controlled experiments introduce only one independent variable at a time, in order to ascertain its unique effects upon dependent variables. These conditions are approximated best in laboratory settings. In contrast, human environments and genetic backgrounds vary so widely, and depend upon so many factors, that it is difficult to control important variables for human subjects. Of course, there are pitfalls in generalizing findings from animal studies to humans although animal models can be helpful in developing an understanding of human behavior.**

Criticism

Theory

Criticisms of psychology often come from perceptions that it is a "fuzzy" science. Philosopher of science Thomas Kuhn's 1962 critique implied psychology overall was in a pre-paradigm state, lacking the agreement on overarching theory found in mature sciences such as chemistry and physics. Psychologists and philosophers have addressed the issue in various ways.[e] Because some areas of psychology rely on research methods

such as surveys and questionnaires, critics have asserted that psychology is not an objective science. Other phenomena that psychologists are interested in, such as personality, thinking, and emotion, cannot be directly measured and are often inferred from subjective self-reports, which may be problematic. Misuses of hypothesis-testing occur in psychology, particularly by psychologists without doctoral training in experimental psychology and statistics. Research has documented that many psychologists confuse statistical significance with practical importance. Statistically significant but practically unimportant results are common with large samples. Some psychologists have responded with an increased use of effect size statistics, rather than sole reliance on the Fisherian $p < .05$ significance criterion (whereby an observed difference is deemed "statistically significant" if an effect of that size or larger would occur with 5% (or less) probability in independent replications, assuming the truth of the null-hypothesis of no difference between the treatments). Sometimes the debate comes from within psychology, for example between laboratory-oriented researchers and practitioners such as clinicians. In recent years, and particularly in the U.S., there has been increasing debate about the nature of therapeutic effectiveness and about the relevance of empirically examining psychotherapeutic strategies. One argument states that some therapies are based on discredited theories and are unsupported by empirical evidence. The other side points to recent research suggesting that all mainstream therapies are of about equal effectiveness, while also arguing that controlled studies often do not take into consideration real-world conditions.

Practice

Some observers perceive a gap between scientific theory and its application—in particular, the application of unsupported or unsound clinical practices. Critics say there has been an increase in the number of mental health training programs that do not instill scientific competence. One skeptic asserts that practices, such as "facilitated communication for infantile autism"; memory-recovery techniques including body work; and other therapies, such as rebirthing and reparenting, may be dubious or even dangerous, despite their popularity. In 1984, Allen Neuringer had made a similar point regarding the experimental analysis of behavior. Current ethical standards of psychology would not permit the following studies to be conducted today. These human studies would violate the Ethics Code of the American Psychological Association, the Canadian Code of Conduct for Research Involving Humans, and the Belmont Report. Current ethical guidelines state that using non-human animals for scientific purposes is only acceptable when the harm (physical or psychological) done to animals is outweighed by the benefits of the research. Keeping this in mind, psychologists can use on animals research techniques that would not necessarily be performed on humans.

- An experiment by Stanley Milgram raised questions about the ethics of scientific experimentation because of the extreme emotional stress suffered by the participants. It measured the willingness of study participants to obey an authority figure who instructed them to perform acts that conflicted with their personal conscience.
- Harry Harlow drew condemnation for his "pit of despair" experiments on rhesus macaque monkeys at the University of Wisconsin–Madison in the

1970s. The aim of the research was to produce an animal model of clinical depression. Harlow also devised what he called a "rape rack", to which the female isolates were tied in normal monkey mating posture. In 1974, American literary critic Wayne C. Booth wrote that, "Harry Harlow and his colleagues go on torturing their nonhuman primates decade after decade, invariably proving what we all knew in advance—that social creatures can be destroyed by destroying their social ties." He writes that Harlow made no mention of the criticism of the morality of his work.

University psychology departments have ethics committees dedicated to the rights and well-being of research subjects. Researchers in psychology must gain approval of their research projects before conducting any experiment to protect the interests of human participants and laboratory animals.

Sports Psychology

It has long been acknowledged that psychological skills are critical for athletes at the elite level. Athletes with the requisite "mental toughness" are more likely to be successful. In the past, it was assumed that these skills were genetically based, or acquired early in life. Now, it is commonly accepted that athletes and coaches are capable of learning a broad range of psychological skills that can play a critical role in learning and in performance.

Role of Sports Psychology

The specialised field of sports psychology has developed rapidly in recent years. The importance of a sports psychologist as an integral member of the coaching and health care teams is widely recognised. Sports psychologists can teach skills to help athletes enhance their learning process and motor skills, cope with competitive pressures, fine-tune the level of awareness needed for optimal performance, and stay focused amid the many distractions of team travel and in the competitive environment. Psychological training should be an integral part of an athlete's holistic training process, carried out in conjunction with other training elements. This is best accomplished by a collaborative effort among the coach, the sport psychologist, and the athlete; however, a knowledgeable and interested coach can learn basic psychological skills and impart them to the athlete, especially during actual practice.

The Medical Staff and Psychosomatic Disorders

The health professional often plays a major role in supporting the emotional health of athletes. An athlete's psychological stresses may be manifested as somatic complaints, such as sleep disturbances, irritability, fatigue, gastrointestinal disturbances, muscle tension, or even injury. Athletes often turn to a therapist or physician for relief, either because they do not recognise the psychological basis of the physical complaint, or because they fear the services of a mental health practitioner due to the perceived stigma, or because no psychologist is available. Therapists must be aware of the possibility of an underlying psychological basis for a complaint and inquire into the emotional status of the athlete as part of the medical history. Careful, non-judgmental questioning may reveal inter-personal problems with a coach, teammate, family member,

or other individuals, or anxiety concerning an upcoming competition. In these situations, a sports psychologist is invaluable. If none is available, the physician or therapist may need to assume the role of sounding board, intermediary, or stress-management advisor. At times, being a patient listener and confidant may be all that is required. If mediation between parties is required, a neutral, non-judgmental stance must be maintained to help the parties air and resolve differences.

Preparing for Competition

Simple psychological skills to help the athlete manage the competitive performance environment include:

- **Learning relaxation skills; slow, controlled, deep abdominal breathing; or autogenic training;**
- **Mastering all of the attentional styles;**
- **Imagery;**
- **Appropriate self-talk;**
- **Developing a precompetition mental routine to be employed immediately prior to competition on game day.**

Athlete's Competition Day Preparation

Many athletes use special psychological procedures to prepare themselves on competition day. The following exercises will help you develop your own competition-day routine and achieve that hard-to-define sense of "readiness"—it may be a sense of "tingling" or the simple subjective feeling that "this is my day." Too high a level of activation is experienced as "stress" or anxiety and leads to muscle tightness, poor efficiency, poor attention or concentration (chaotic thinking or too narrow a focus), and loss of smooth and responsive muscle coordination. Too low a level of activation is seen as low energy, a "flat" performance, little or no motivation, and wandering attention. Both profiles lead to performance errors. How one achieves that sense of readiness that precedes optimum performance varies with each person, so carefully review your best competition days and try to identify the cues (inside of you and in your environment) that seemed to help you prepare to compete well.

Identify your Stress Profile

The next time you experience some type of stress (competition, tests, talking with someone you feel uncomfortable with, etc.), notice how stress affects your body and your mind. Be very specific.

- ***Muscles that tighten:*** **Jaw clenches, shoulders tighten, fists clench, stomach tightens, other;**
- ***Breathing pattern:*** **Shorter and faster, rapid speech, other;**
- ***Gastro-intestinal responses:*** **nausea or unsettled sensations in the stomach; more frequent bowel movements, other;**
- ***Other physical signs:*** **Dry throat, upset stomach, cold hands and/or feet, rapid, pounding heart, sweaty palms, frequent urination, other;**
- ***Interpersonal responses:*** **Rapidity of speech with different people, need to be around certain people (coach, teammate, family, friends, etc.), need to be**

alone, need to "show them" during warm-up, watching other athletes, other:

- ***Personal cues:*** **Mind goes blank (when?), forgetfulness, unable to focus attention well (easily distracted or too narrow a focus), things you say to yourself (I've got to do better this time, what am I doing here? I hope my coach/parents don't get mad if..., I hope I don't goof...), other;**
- ***Environmental cues:*** **Air temperature, humidity, rain, crowd noises, officials, poor fit of clothes or shoes, equipment problems.**

Use this Information to Identify the Early Signs of Stress.

Individuals experience stress in consistent ways, and you need to find your own stress profile. Log your responses to stress as well as the cues that were present on your best competition days so that you can compare the two profiles.

Planning for Competition Day

By now you will have some idea of what your stress profile is: when too much or too little stress is activated, WHAT or WHO triggers the stress, and HOW it affects you (both physically and mentally). Once you know the cues that interfere with your performance, you can plan a programme of psychological and physical techniques to help reach a better performance level. Table 5-3 lists activities that may help you reduce tension, or help you "activate" yourself if you are feeling flat, unresponsive, or "down." Be sure to use psychological techniques in your daily training programme. Like any skill, these techniques require practice before you can use them effectively under pressure. Also, be sure to keep a log of techniques and routines that help you on competition day(s).

- ***Plan for the night before competition:*** **You may wish to use mental rehearsal techniques, but don't use them just before sleep—this is an activation activity, not a relaxation for sleep.**
- ***Day of competition:***
  a. **Know your competition schedule, and plan activities such as eating, reaching the competition site, and getting into the locker room so that there is no sense of rushing. Some athletes become more tense if they arrive too early—find the balance that's right for you. List the time needed to reach the competition site and a schedule you plan to follow.**
  b. **Every 45 minutes–1 hour check yourself for signs of stress and take a minute to do a body check and use stress management/ self-regulation techniques that work for you. List the signs of stress and the specific techniques you plan to use to reduce stress: If tension is too great for self-control or self-regulation, who (teammate or coach) can help you? How? Example: Help you check breathing; muscle check; quietly repeat relaxation phrases; place hands gently on your shoulders to help lower them to a more relaxed level; help move away from distracting noises or scenes to a quieter place, etc.**
- ***Psychological Strategies to Use Before Competition:***
  a. ***Internal Muscle Check:*** **Review each muscle group (standing, sitting, or lying down). Hands, arms and fists, forehead, eyes; cheeks and jaw; shoulders and upper back; stomach; hips and lower back, thighs; lower legs and feet.**

b. ***Breathing Check:*** **Inhale and feel slight tension; exhale and relax from top of head to knees and toes. Feel the relaxation roll down the body. Periodically inhale deeply, hold your breath and feel the tension throughout your body, then relax your jaw, exhale and feel the contrast of the relaxation as it rolls down your body. QUICKLY "scan" your muscles and release any tension you feel. Notice if your breathing is deep or shallow. Deepen it each time so that you can almost FEEL the air "tickle your belly button." Relax each time you exhale.**

c. ***Visual-Motor Behaviour Rehearsal (VMBR):*** **Relax as much as possible. Now, as clearly and vividly as possible, imagine yourself in an ideal performance.If you see yourself "in the distance," add the feeling of actually experiencing yourself doing the activity. The difference is feeling alertly relaxed with a very slight sense of muscle activity/tension vs. feeling heavily relaxed. This technique can be used to: 1) Rehearse an entire performance; 2) Review and correct a specific performance problem so that doing it correctly becomes second nature; 3) Practice approaching the crowd or competition with confidence.**

- ***Four or five hours before the event:***
  a. **L9ist your objective, e.g. you want to emphasise a fast start, confidence, aggressiveness, a particular strategic approach to the other competitors;**
  b. **Determine how to achieve the objective, e.g. plan to take a moment to visualise a fast start to the gun immediately before getting into the blocks.**
- ***Immediately prior to the event (before stepping to the line, blocks, or into the ring):***
  a. **For a second or so, visualise your complete event as you would actually perform; see it happen, make this vivid visualising include the way the body is to feel as it performs;**
  b. **Use an inner frame of reference—you are doing it IN the scene, not watching yourself do it;**
  c. **Clear your mind after you have programmed your body by visualisation.**

ACHIEVEMENT AND MOTIVATION IN SPORTS

Achievement Motive

Striving for success is often seen as a manifestation of an achievement motive (or motivation), something that induces a person to direct his or her behavior toward the attainment of certain goals. Motive is from motus, Latin for move. When that motive becomes established in a set of moral principles and regarded as a virtuous rule of conduct, it becomes an achievement ethic. The whole field of sports is guided by an achievement ethic: victory is sought after and defeat is to be avoided in every endeavor. Competitors are energized by an achievement motive in the sense that they personally seek success rather than failure and are prepared to defeat others in their pursuit of that goal. The motive and the ethic coexist, of course: were victory and the striving for it not seen as worthy, the motive to pursue it would have little purchase. As it is,

sports have prospered in cultures that have honored success. It is no accident that cultures that extol the virtues of competition and rivalry have produced high achievement-motivated individuals who excel in sports. There is unlikely to be an achievement motive at an individual level outside cultures that do not value success over failure. The influential research of John W.Atkinson—especially with D.C.McClelland, R.A.Clark and E.C.Lowell, in The Achievement Motive, published in 1953—sheds light on the composition of the achievement motive. It is the combination of two personality constructs: the motive to approach success and the motive to avoid failure. According to Atkinson, all humans have both; it is the way in which they combine which affects whether one person will be achievement-motivated. Atkinson's research involved testing subjects for both the motive to succeed and the motive to avoid failure. For example, would they look for challenges, show persistence, remain unafraid to lose and blame themselves when making the attribution for success or failure? Or would they try to avoid failure, dodge challenges—preferring to compete against easy opponents—dislike being evaluated by others and attribute their performance to external factors, such as luck or hard opponents? Those who scored big on the first scale were said to have an achievement motive. Situations also factor into Atkinson's model, which rates probability of success from 0 (no chance) to 1.00 (certainty) and builds in an incentive value (the lower the chance of success, the greater the incentive). An achievement-motivated kicker faced with a 50-yard field goal chance to win a game and no time left on the clock would relish the opportunity A kicker without a strong motive would prefer either an easier, more certain task, such as a 25-yard attempt, or an impossibly tough kick from outside field goal range to avoid being blamed for the failure. So the type of situation determines whether the behavioral tendencies of the achievement-motivated player will come to the fore. As many situations in sport have a mid-range chance of success without a very high incentive value, the high achievement-motivated athlete is not always an asset; many situations demand a more conservative performer—a 'safe pair of hands.' M.L.Maehr and J.G.Nicholls rejected many of Atkinson's assumptions about the invariance and objectivity of success and failure. Instead, they proposed that they are much more subjective, based on the perception of reaching or not reaching goals. There is, according to Maehr and Nicholls, 'cultural variation in the personal qualities that are seen to be desirable.' In other words, success and failure will be viewed differently in different cultures. While they do not examine the relationship between the achievement ethic and the achievement motive, Maehr and Nicholls acknowledge that it is necessary to understand the meanings of achievement rather than assume there is a single definition that holds good for all. Their interest was in exploring how, for example, winning may be the only criterion of achievement for some, while pleasing a coach by performing well may constitute achievement for others. Different goals give rise to different perceptions of success and failure. But, significantly, all individuals use goals of some kind to evaluate their achievements.

Achievement goals can be grouped into three kinds, according to Maehr and Nicholls:

- **To demonstrate ability;**
- **To be task-involved (mastering a competence rather than assessing oneself against others); and**

- **To seek social approval. The same competitor may have a different goal for each different sport, or at different times in his or her life, or may even have several goals at once.**

Michael Jordan was presumably motivated to achieve a successful outcome during his basketball career but, while his venture into baseball was generally considered a failure, he may well have set himself a different goal, perhaps to master the sport rather than win anything.

The Motivational Dynamics of Sport

Motivation is an internal energy force that determines all aspects of our behaviour; it also impacts on how we think, feel and interact with others. In sport, high motivation is widely accepted as an essential prerequisite in getting athletes to fulfil their potential. However, given its inherently abstract nature, it is a force that is often difficult to exploit fully. Some coaches, like Portugal manager Luiz Felipe 'Big Phil' Scolari, appear to have a 'magic touch', being able to get a great deal more out of a team than the sum of its individual parts; others find motivation to be an elusive concept they are forever struggling to master. What is it that makes individuals like the 45-year-old sprinter Merlene Ottey, who competed in her seventh Olympics in Athens 2004, churn out outstanding performances year in, year out? Elite athletes such as Ottey have developed an ability to channel their energies extremely effectively. Indeed, motivation is essentially about the direction of effort over a prolonged period of time. There are numerous approaches to the study of motivation. Some are based on schedules of positive and negative reinforcement while others focus on an individual's sense of mastery over a set of circumstances. This article explores the constituents of motivation using a contemporary approach, popularised by Americans Edward Deci and Richard Ryan, known as self-determination theory, which emphasises the role of individual choice. The article will also outline some of the key findings from recent literature and provide four evidence-based techniques relating to the enhancement of motivation. You will be able to tailor the motivational techniques to enhance your participation in sport or the performance of others. You will learn that motivation is a dynamic and multifaceted phenomenon that can be manipulated, to some degree at least, in the pursuit of superior sporting performance.

Different Types of Motivation

One of the most popular and widely tested approaches to motivation in sport and other achievement domains is self-determination theory. This theory is based on a number of motives or regulations, which vary in terms of the degree of self-determination they reflect. Self-determination has to do with the degree to which your behaviours are chosen and self-initiated. The behavioural regulations can be placed on a self-determination continuum. From the least to the most self-determined they are amotivation, external regulation, introjected regulation, identified regulation, integrated regulation and intrinsic motivation. Amotivation represents a lack of intention to engage in a behaviour. It is accompanied by feelings of incompetence and a lack of connection between one's behaviour and the expected outcome. For example, an amotivated athlete might be heard saying, 'I can't see the point in training any more – it just tires me out'

or 'I just don't get any buzz out of competition whatsoever'. Such athletes exhibit a sense of helplessness and often require counselling, as they are highly prone to dropping out. External and introjected regulations represent non-self-determined or controlling types of extrinsic motivation because athletes do not sense that their behaviour is choiceful and, as a consequence, they experience psychological pressure. Participating in sport to receive prize money, win a trophy or a gold medal typifies external regulation. Participating to avoid punishment or negative evaluation is also external. Introjection is an internal pressure under which athletes might participate out of feelings of guilt or to achieve recognition. Identified and integrated regulations represent self-determined types of extrinsic motivation because behaviour is initiated out of choice, although it is not necessarily perceived to be enjoyable. These types of regulation account for why some athletes devote hundreds of hours to repeating mundane drills; they realise that such activity will ultimately help them to improve. Identified regulation represents engagement in a behaviour because it is highly valued, whereas when a behaviour becomes integrated it is in harmony with one's sense of self and almost entirely self-determined. Completing daily flexibility exercises because you realise they are part of an overarching goal of enhanced performance might be an example of integrated regulation. Intrinsic motivation comes from within, is fully self-determined and characterised by interest in, and enjoyment derived from, sports participation. There are three types of intrinsic motivation, namely intrinsic motivation to know, intrinsic motivation to accomplish and intrinsic motivation to experience stimulation. Intrinsic motivation is considered to be the healthiest type of motivation and reflects an athlete's motivation to perform an activity simply for the reward inherent in their participation.

Flow: The Ultimate Motivational State

According to Hungarian psychologist Mihalyi Csikszentmihalyi, the highest level of intrinsic motivation is flow state. Flow is characterised by complete immersion in an activity, to the degree that nothing else matters. Central to the attainment of flow is a situation in which there is a perfect match between the perceived demands of an activity and an athlete's perceived ability or skills. During flow, self-consciousness is lost and athletes become one with the activity. For example, a World champion canoeist I work with often describes how the paddle feels like an extension of her arms while she is in flow. An overbearing or unrealistic challenge can cause excess anxiety, which means that coaches need to ensure that athletes set realistic goals. Conversely, if athletes bring a high level of skill to an activity and the challenge that it provides is relatively low, such as Barcelona and Brazil's Ronaldinho playing in a minor football league, this can result in boredom. The final quadrant in Figure 2 shows apathy, which transpires when both challenge and skill are low. To promote flow, it is important to find challenges that are going to stretch athletes just a touch further than they have been stretched before.

Recent Motivation Research based on SDT

A study examining the relationship between athletes' goal orientations and their levels of intrinsic and extrinsic motivation indicated that British collegiate athletes with task-related or personal mastery goals were far more likely to report high self-

determination than athletes with ego-orientated or social comparison-type goals. The study provided tentative support for the proposition that focusing on personal mastery and self-referenced goals promotes intrinsic motivation to a greater degree than focusing on winning and demonstrating superiority over others. This has important implications for practitioners who work with children, given the wealth of evidence that suggests that a focus on personal mastery and intrinsic motivation brings the most positive motivation outcomes. A very recent study showed that during competition deemed to be important, intrinsically motivated athletes developed task-oriented coping strategies. Conversely, extrinsically motivated athletes tended to avoid dealing with key issues and were far less likely to achieve their goals. In another study, researchers adopted a qualitative approach to answer the question 'why does the "fire" of elite athletes burn so brightly?'. They sought to demystify the differences between high achievers and also-rans in the world of sport.

Their interviews with 10 elite Australian track and field athletes revealed three overarching themes:

- **Elite athletes set personal goals that were based on both self-determined and extrinsic motives;**
- **They had a high self-belief in their ability to succeed;**
- **Track and field was central to their lives – everything rotated around their involvement in the sport.**

Using a statistical procedure known as 'cluster analysis', colleagues and I have identified two types of 'motivation profile'. The first was characterised by high levels of both controlling and self-determined types of behavioural regulations and the second by high self-determined and low controlling motivation. A comparison of the two profiles on the motivation outcomes of enjoyment, effort, positive and negative affect, attitude towards sport, strength and the quality of behavioural intentions, satisfaction, and frequency of attendance showed that participants in the first profile reported higher levels on all eight positive consequences when compared to those in the second profile. This finding suggests that the simultaneous presence of high extrinsic and high intrinsic motivation is likely to yield the most positive benefits for adult athletes. However, it is critical that extrinsic motives are nurtured on a firm foundation of high intrinsic motivation. Without high intrinsic motivation, athletes are likely to drop out when they encounter problems such as injury, non-selection or demotion. We conducted a follow-up study confirming the profiles identified in 2000 and came up with a similar solution using a new sample of adult athletes. Importantly, we found that participants in cluster 1 also reported better concentration on the task at hand.

Motivational Techniques for Coaches and Athletes

Goal Setting

- **Athletes should be encouraged to set a few ambitious but achievable long-term goals; perhaps to represent their country in a major championship in three or four years. Through empowering athletes to set their own goals, they are more likely to accept the challenges that lie ahead and pursue the goals with enthusiasm;**

- **To keep athletes on track with their long-term goals, they should also set appropriate medium-term goals. For example, following a bronze medal-winning performance at the 2004 Athens Olympics, UK heptathlete Kelly Sotherton set herself the medium-term goal of winning the 2006 Commonwealth title in Melbourne en route to pursuing her long-term goal to be crowned Olympic champion at the 2008 Beijing Games;**
- **By far the most important goals in practical terms are those for the short-term, as it is these that keep athletes focused on the checkmarks which are seminal to achieving superior performance. Therefore, short-term goals should be predominantly process-oriented. For example, when Manchester United's Wayne Rooney injured a metatarsal six weeks before the start of the soccer World Cup, he set a series of process goals in his race to regain full fitness. These included daily physiotherapy sessions, remedial exercises in an oxygen chamber, non weight-bearing aerobic activities, monitoring of nutritional intake and so on;**
- **Goals need to be monitored and revised on a regular basis. One of the biggest mistakes that coaches make in setting goals is that they are often too rigid in their approach. The goal setting process works best when there is some flexibility and the individual athlete or team take ownership of each goal. Thus, coaches and managers are better off exercising some democracy when setting goals, particularly if working with more experienced athletes.**

Using Extrinsic Rewards

According to SDT, the key aspect in using extrinsic rewards effectively is that they reinforce an athlete's sense of competence and self-worth. Thus, a reward should be informational in nature rather than controlling. If a reward comes to be controlling, it can significantly undermine intrinsic motivation. For a reward to be informational, it is advisable that it has relatively little monetary worth such as a 'woman of the match' or 'athlete of the tour' title. Also, the reward should be presented to an athlete in front of all potential recipients with some emphasis placed on the prestige associated with it. Other popular ways of using token rewards include etching athletes' names on annual honours boards for their contributions, or awarding a special item of clothing.

Motivational Music

A particularly good way to motivate athletes in training and prior to competition is through the use of music they perceive to be inspirational. Sydney Olympics rowing gold medallist, Tim Foster, now a respected coach, uses music to punctuate all of the indoor training sessions that he leads. Specifically, during circuit training or rowing ergometer intervals, he puts on loud/fast music, while during recovery periods he plays soft/slow music. Therefore, work and recovery times are regulated by music. Research from Brunel University indicates that this approach increases work output, reduces perceived exertion and improves in-task affect – the pleasure experienced during the activity.

Positive Self-talk

Positive self-talk is a technique that can be used to enhance motivation across a wide range of achievement domains. It makes use of an athlete's powerful inner voice to reinforce their self-esteem or important aspects of their performance. With appropriate repetition, self-talk can positively alter an athlete's belief system. I use three types of self-talk in my work with athletes and will illustrate each with an example to assist you in coming up with your own. The first type is known as task-relevant self-talk, which serves to focus an athlete's attention on the task at hand. A karateka I worked with used the mantra 'pillar of power' to reinforce his strong posture. The second type is known as mood-related self-talk, which impacts on how athletes feel. An international water skier came up with 'butterflies in formation' to represent how the butterflies in her tummy would work for her rather than against her. The third type is known as a positive self-affirmation statement and the most famous exponent of these was the legendary boxer Mohammed Ali who repeated the claim, 'I am the greatest' so many times that even his opponents believed it.

Chapter 2

Coaching: The Challenges and the Benefits

Coaching sports is a challenge. As children we loved to play sports; whether on the playing field, in the backyard, at a friend's house, or in an organized arena. As adults, the enjoyment and personal satisfaction of sports is no less than it was in our youth. The transition from playing sports to coaching sports is a natural progression.

To be a successful coach there are many things that you must understand. Statistically, many of the young athletes that you coach will not even play varsity sports in school; most of them will not play in college, and almost none will ever play professional sports.

So, what does this mean for coaches? Coaches need to emphasize all the other aspects of sports and the life lessons that make young athletes love playing the game. For the most part, coaches need to make the experience of sport fun.

Sports allow young athletes to learn success and failure, winning and losing, sportsmanship and teamwork, and how to respond to different situations while under pressure. None of these are easy lessons. Winning with grace is just as hard to teach as losing with dignity. How can coaches accomplish this and make sure that everybody has a great season? Th at's the trick.

Every team you will ever coach, especially teams of younger kids, will be split between kids that are talented and kids that are not. The goal that you have as a coach is to make sure that every one of those kids has a great experience and wants to play again next season. The way to do this is to emphasize things other than on-field performance.

QUALITIES OF SUCCESSFUL COACHES

Sports coaches help athletes develop their full potential. They are responsible for training athletes in a particular sport by analyzing their performance, instructing them

in relevant skills, and providing encouragement. Therefore, the roles of the coach will be many and varied. The coach will be an instructor, assessor, friend, mentor, facilitator, chauffeur, adviser, supporter, motivator, counselor, organizer, planner, and the fountain of all knowledge. In relation to sports, the role of the coach is to create the right conditions for learning and to find ways of motivating the athletes. Most athletes are highly motivated and therefore the task is to maintain that motivation and to generate excitement and enthusiasm. The coach will need to be able to help athletes build new skills by providing prepared training programs that predict and monitor training progress and performance. A successful coach must always communicate effectively with his or her athletes.

TRAITS OF SUCCESSFUL COACHES

- **A goodwill ambassador for youth sports**
- **Able to inspire, encourage, and motivate**
- **An advisor to athletes on nutrition and safety**
- **Approachable**
- **Someone who cares about people**
- **Someone who demonstrates personal integrity**
- **An effective communicator**
- **Someone who enjoys working with people**
- **Enthusiastic**
- **Able to evaluate the athlete's and coaching performance**
- **A hard worker**
- **Honest and fair**
- **A careful listener**
- **A monitor of training progress**
- **Able to set reasonable goals**
- **Someone who has a solid understanding of the techniques of the sport**
- **Unbiased**
- **Understands the causes and recognizes the symptoms of over-training**
- **Understands and appreciates the rules of the sport**
- **Understands his or her own strengths and weaknesses**
- **Understands the capabilities of growing children**
- **Understands the learning process and training principles**
- **Understands various coaching styles**
- **Works well with parents and the community**

COACHING CODE OF ETHICS

The function of a coach is to educate students through participation in interscholastic competition. An interscholastic program should be designed to enhance academic achievement and should never interfere with opportunities for academic

success. Each student-athlete should be treated as though he or she was the coach's own child, and his or her welfare should be the highest priority at all times. Accordingly, the following guidelines for coaches have been adopted by the Board of Directors of the National Federation of High Schools (NFHS).

- **The coach shall be aware that he or she has a tremendous influence, for either good or ill, on the education of the student-athlete and, thus, shall never place the value of winning above the value of instilling the highest ideals of character.**
- **The coach shall uphold the honor and dignity of the profession. In all personal contact with student-athletes, officials, athletic directors, school administrators, the state high school athletic association, the media, and the public, the coach shall strive to set an example of the highest ethical and moral conduct.**
- **The coach shall take an active role in the prevention of drug, alcohol, and tobacco abuse.**
- **The coach shall avoid the use of alcohol and tobacco products when in contact with players.**
- **The coach shall promote the entire interscholastic program of the school and direct his or her program in harmony with the total school program.**
- **The coach shall master the contest rules and shall teach them to his or her team members. The coach shall not seek an advantage by circumvention of the spirit or letter of the rules.**
- **The coach shall exert his or her influence to enhance sportsmanship by spectators, both directly and by working closely with cheerleaders, pep club sponsors, booster clubs, and administrators.**
- **The coach shall respect and support contest officials. The coach shall not indulge in conduct which would incite players or spectators against the officials. Public criticism of officials or players is unethical.**
- **Before and after contests, coaches for the competing teams should meet and exchange cordial greetings to set the correct tone for the event.**
- **A coach shall not exert pressure on faculty members to give studentathletes special consideration. A coach shall not scout opponents by any means other than those adopted by the league and/or state high school athletic association.**

COACHING PHILOSOPHY

As new coaches begin their coaching careers, it is important that they spend time and effort on developing their coaching philosophy. Everyone knows the great coaches of the past and present, but what is it about them that made the difference in the eyes of their players? Was it the signature hat worn by the late, great Paul "Bear" Bryant of Alabama? Was it the fierce intensity shown by Ohio State's late, great Woody Hayes? Was it the result of one of the finest teachers the game of basketball had ever seen, the great John Wooden of UCLA? Is it the fiery emotion shown by basketball's great Bobby Knight of Texas Tech? Or the one-liners and positive team approach to football shown by the recently retired great Frosty Westering of Pacific Lutheran University? What is it that makes these coaches, and others just like them, stand out? Is it winning

percentage? All of the coaches mentioned above were highly successful, national championship–winning coaches. But all of them would probably agree that winning is only a by-product of what you do as an athlete and how you prepare. Making the team goal be winning every game, or the conference championship, or the state title, is a road to failure, not success. Only one team or individual will ever win a league or state championship each year. What happens to individual and team goals if winning everything is the primary goal? As stated at the beginning of this chapter, athletics should be fun, enjoyed by everyone, and secondary to getting a good education.

DEVELOPING A COACHING PHILOSOPHY

Coaches beginning their careers will often spend the majority of their time planning drills and deciding practice schedules. The excitement of coaching will often cause beginning coaches to put coaching philosophy offto the side. To be successful, new coaches need to spend almost as much time developing their coaching philosophy as they do coming up with their practice plan. Specifically, coaches need to think about the hows and whys of everything they will do as a coach. What basis or reasons do you have for your approach? This is a critical step for all new coaches. Even experienced coaches may want to reevaluate their philosophy. The thought of developing a coaching philosophy is a fairly daunting prospect. How do you start to develop your philosophy of coaching? Th at's easy. For most new coaches, coaching philosophy begins with their own playing experience. Providing they had a positive experience, most of their basic philosophy probably emanates from their high school and college coaches. This is a very natural start, because this is the approach with which beginners are most familiar and comfortable. To grow individually as a coach, think about the following ten questions. These questions may help you in your effort to formulate or analyze your own philosophy of coaching.

Is Your Approach Educationally Sound?

Several things should be considered as you analyze your coaching techniques and methods.

Ask yourself the following questions:

- **Do your drills serve a purpose? For example, do they teach a part of your offense, defense, or appropriate skills that are needed?**
- **Do you use drills merely for the enjoyment or entertainment of the athletes and coaching staff?**
- **Are your drills structured to provide the necessary repetition for each athlete?**
- **Are your drills and the skills they teach relative to your athletes' ability level? Coaching involves teaching, and athletics should have sound educational value. Your answers to the questions posed above will be extremely important in developing your personal coaching philosophy.**

Is Your Approach Appropriate for Your Players?

For example, many soccer coaches imitate the system employed by the last World Cup champion. But do their players have the ball control and skills to implement it? Probably not. It may be an excellent system, but not suited to their high school players.

As another example, a basketball coach attended a clinic and came away with what seemed to be a great new offense. When practice began for the season, the coach immediately implemented it. However, the players struggled with the offense and it took the coach almost half a season to realize that the talent differential from the college squad to his was the real difference. While the offense was good for the college team, it was not the answer for the high school team. The ultimate answer is to use an approach which is developmentally appropriate for your players.

Is Your Philosophy Ethical?

In basketball, for example, many coaches who are losing in the waning minutes of a close game instruct their players to foul in order to stop the clock. While this tactic may be annoying to some fans, it is certainly within the limits of the rules. Can the same be said for faking an injury in order to stop the clock? No, that is unethical. Consider what you do in all aspects of your coaching. Is it ethical? It should be and, if not, your philosophy should change. Because there is great educational value involved in athletics, coaching from an ethical standpoint is an extremely important way to provide a model for the athletes.

Will Your Approach Last Over the Years or is it Based on a One- or Two-year Fad?

Successful programs and the systems that they employ are usually perpetual, continuing efforts, whereas, fads will disappear after a few brief years. Analyze your approach.

- **How many other programs use the offense or defense that you use?**
- **How long have other programs used their approach?**
- **How successful (and success has to first be defined) have they been while using their system?**

Remember, that imitation is a real indicator of success. If no one else is using your offense, defense, or other elements of your approach, this should give you a real hint. Using a system year after year is another very good indicator of its success and soundness.

Do You Stick with Your Philosophy and Insert Your Players into it, or Do Your Adapt to the Players that are Available?

Unlike colleges, most high schools, cannot recruit players. A college coach can, therefore, find players to insert into his system and philosophy. Most high school coaches have to develop the talent on hand. Realistically, there may be some years in which the athletes may not possess the ability or skills to fit into your philosophy. You cannot change the players, but you can alter your approach.

Is There a Better Way of Doing What You are Doing?

Apply this question to all aspects of your coaching philosophy: offense, defense, motivation of your athletes, conditioning, etc. Keep an open mind. For example, if an opponent successfully attacks your defense, can you adapt their offense for your own use? Or does the success of your opponent's offense prove that your defense simply

isn't effective? It is extremely important to constantly analyze everything you do. Learning should be a life-long pursuit and so should developing your coaching philosophy.

Can You Explain Why You Use or Do Something?

In order to instruct and to motivate your athletes, you have to be able to justify what you do. Can you? It is no longer good enough to simply say, "Well, this is the way we are going to do it," and stop at that. You also have to be able to explain why. There is no way that you can justify anything associated with your program to athletes and parents without being able to explain it.

Is What You Do in Practice Sessions and Games Safe?

There is considerable information available concerning proper techniques and skills. Staying abreast and aware of risk management aspects is vital. After all, unsafe approaches can lead to injuries and potential lawsuits.

Some of the areas that need particular attention by coaches are:

- **Weather-related conditions such as lightning and heat/temperature**
- **Injuries and their treatment**
- **Equipment**
- **Methods of training or conditioning**
- **Teaching proper skill techniques**

Anything unsafe needs to be immediately eliminated from your coaching philosophy. The safety of the athletes must be paramount.

Is Your Coaching Philosophy Compatible with Your Personality?

For example, are you normally

- **Cautious or a risk taker?**
- **Controlling or laid back?**
- **Patient or impatient?**
- **An analytical planner or impulsive?**
- **Deliberate or aggressive?**

You will probably be more successful in coaching if your philosophy and personality are compatible. Is your approach with coaching in line with your personality or does your philosophy go against your basic nature?

Is There Anything Unsportsmanlike About Your Philosophy?

Certain situations arise in some games that could be considered unsportsmanlike by your opponent, officials, or fans.

One needs to consider how everything is perceived, such as:

- **Running up the score**
- **Playing starters long after the outcome has been determined**
- **Allowing taunting**

While these are just a few examples, they need to be seriously considered. If any of these exist within your approach to coaching, you will have to make some changes, because these practices do not exhibit good sportsmanship. After analyzing all the factors

involved in coaching and developing your own philosophy, another very good exercise is to put it into written form. As mentioned previously, it is extremely important to be able to express and to explain your approach to athletes, parents, and supervisors. A written document can also give you something concrete to re-examine and evaluate annually. In this way, you can easily update and improve your coaching philosophy. The ten questions listed above are intended to promote thought, introspection, and, hopefully, some revelation. They are obviously not intended to provide the complete or definitive answer to developing your coaching philosophy. Only you, with time and honest effort, can develop your own coaching philosophy.

THE ROLES OF THE ASSISTANT AND HEAD COACH

THE ASSISTANT AND HEAD COACHES

Coaches provide a range of critical leadership capabilities. First and foremost, coaches provide leadership in the guidance and motivation of student-athletes. Win, lose, or draw, the athletic experience should be a constructive life lesson in working hard to accomplish goals, supporting teammates during stressful times, and celebrating the effort. Studentathletes deserve the opportunity to compete in a context that values hard work, achievement, and respect for all concerned. Coaches further provide leadership through their faculty colleagues. Principals, school staff, athletic directors, and assistant coaches all want their student-athletes to exemplify behaviors of strong teamwork, competitive spirit, and good sportsmanship. A smooth, collaborative effort is required to produce optimum results. Coaches orchestrate this team effort and, in turn, take responsibility for the outcome. Coaches confront the challenge of sustaining a well-coordinated support system with the parents of their athletes. Parents have a strong and often emotionally-vested interest in seeing their child succeed. They have been known to express their enthusiasm in a manner which is not always in accord with the coach's plans or values. Responsibility for educating parents, and transforming them into allies who advocate appropriate values, rests squarely with the coach. Most great coaches have simple goals: improve the performance of their student athletes and, by doing so, enable them to experience a sense of pride that accompanies achievement. Coaches further seek to field teams that demonstrate respect for each other, their teammates, and the sport. All too easily, coaches can get seduced into focusing more energy on improving their win/loss ratio than on the experience of the student athletes. Success in coaching has much more to do with character development than it does with counting trophies.

THE COACHING CHALLENGE

Individuals approach new challenges with a range of different attitudes. Some relish a new test of their skills and embrace the opportunity to find solutions to novel problems. Others tend toward a more conservative approach, preferring to accumulate confidence by mastering one new task at a time. Coaching presents a consistent diet of new challenges. Your attitude about dealing with new challenges will influence your success and, most likely, the future path of your career.

DEFINING GOALS AND MEASURING RESULTS

Well-defined goals focus energy and attention. Research has consistently demonstrated that clearly-defined goals provide coherent direction to behavior and actually create incentives for achievement. Coaches need to define skill-achievement goals and time frames for athletes, so that they have a clear picture of what they need to strive for. When coaches articulate well-defined goals for a team, athletes have a clear, common vision of what they need to accomplish.

The following should be considered when clarifying goals:

- **Is it clear how an athlete's goals are designed to complement the teams' goals?**
- **Are goals for athletes sufficiently challenging? Appreciate that there are a wide range of individual variations with regard to what represents a challenging goal. You should be able to describe how different athletes vary with regard to their readiness for different challenges.**
- **Are the goals realistic and attainable? Individual athletes and teams should have an excellent chance of achieving goals they set.**
- **Do individual athletes have a solid plan for how to achieve their goals?**
- **Does the team have goals that change over time? For example, do you engineer the team's performance to peak at the end of the season.**

GAUGING RESULTS

Gauging results in the coaching profession can be a highly controversial topic. Is success measured in terms of your win/loss record? It's difficult to argue that winning doesn't matter. However, success when coaching student-athletes really boils down to creating conditions under which athletes experience a sense of pride and accomplishment from achieving personal goals and experiencing team success. Results may come in the form of increased self-confidence. Results may come in the form of inspired teamwork, even if it does not produce a consistent winning record. Teaching young athletes to respect themselves, respect others, pursue competitive success with a passion, and have fun doing it represents success. Building a solid relationship witheach athlete sets the stage for a positive sports experience. Setting appropriate goals gives athletes the opportunity to experience success. Further, athletes need consistent and structured feedback to understand what they do well and what they need to do differently in order to improve. Coaches inspire and motivate athletes in a variety of ways. Some are consistently positive; others are more strenuous and outspoken. Whatever your style, make sure that you preserve the dignity of the athlete and instill the belief that he or she is capable of better things. Help them experience the sense of pride that comes with consistent improvement of their performance.

ATTRIBUTES THAT MAKE A SUCCESSFUL COACH

Coaches accomplish their goals with a variety of techniques. Different people get results with different styles. The following attributes can help define the assistant and head coach.

DECISIVENESS

Obviously, coaches must make many decisions on the spot. The quality of those decisions is a function of experience, intuition, and knowledge. People have different ways of preparing for the moment when decisions have to be made. Some spend hours analyzing relevant information. Others rely mostly on their gut instinct. Studying game films, reviewing data about athletes and team performance, and analysis of opponents, can all help make informed decisions. Are you more analytical and reflective, or are you likely to use your intuitive expertise to guide your decisions?

COMMUNICATIONS

Perhaps no other skill is as important to success in coaching as is communication. Developing strong connections to your athletes, working collegially with the coaching and athletic staff, and relating to school administration and staffall require highly developed communication skills. It's essential to assess the effectiveness of your communication tactics. Getting direct feedback is the best way to accomplish that.

INTERPERSONAL SKILLS: INFLUENCE AND INITIATIVE

Coaches provide leadership in many ways:

- **By modeling behavior that includes an optimistic attitude and good sportsmanship.**
- **By utilizing ongoing analysis of strategies, players, and opponents.**
- **By setting appropriate goals for achievement.**
- **By motivating individual athletes and inspiring the team to higher levels of performance.**
- **By modeling positive stress-management behaviors.**
- **By showing respect for teammates and opponents.**
- **By responding to losses with renewed determination and perseverance.**

To inspire others requires strong motivation to function in a position of authority and influence, the skillful use of influence tactics, and the constant readiness to initiate action. This motivational characteristic can be the starting point for notable success. Coaches often bring a personal sense of mission to their role and start with a strong commitment to help student-athletes achieve new levels of performance. The best coaches tailor their tactics to the specific needs of different individuals and situations. There is no way to understand those specific needs unless you are skilled at listening to the way that your athletes think about different situations.

INFLUENCE

Being able to influence others represents another critical competency for successful coaching leadership. Coaches often find themselves in a situation where they need to persuade or motivate athletes to accomplish specific tasks; this ability is essential when teaching, motivating and supporting athletes. Coaches with the ability to influence others are often successful because they can get athletes to focus on priority goals and to collaborate in order to achieve those goals.

INITIATIVE

Initiative is an essential leadership behavior for coaches. Planning and goal setting

represent critical blueprints for action, but initiative makes a vital contribution to translating those plans into goal-directed behavior. Taking initiative incites action on the part of others. Coaches model positive problem-solving techniques by taking the initiative to improve processes that need to work more effectively.

TEAMWORK, DELEGATION, AND CONFLICT RESOLUTION

Successful leaders are gifted at mobilizing people's energy to work toward the achievement of a common goal. Coaches have to build teams constantly. The athletic team needs to believe in the importance of the common interest above individual glory. Similarly, coaches and parents form an alliance for the benefit of the student-athlete. School officials, including the principal, teachers, athletic director, and coaches, act in concert to create a supportive educational experience for students and to promote a positive image of the school. Coaches play a central, and often pivotal, role in the formation and sustenance of all these teams. To make this happen, coaches need to delegate responsibility, either implicitly or explicitly, to athletes, parents, and colleagues. As with all teams with a great deal at stake, conflicts arise out of differences in perspective. How those conflicts are managed has a substantive impact on the quality of teamwork. Developing sophisticated skill in each of these areas can help coaches and student-athletes achieve goals born of mutual interest and commitment.

TEAMWORK

Teams need leaders to take initiative and emphasize the mutual benefits of supporting a collaborative effort. Coaches are perceived as models for team play and will be expected to show and model teamwork with parents and colleagues, working toward a common goal. As Andrew Carnegie once said, "Teamwork is the ability to work together toward a common vision. The ability to direct individual accomplishments toward organizational objectives. It is the fuel that allows common people to attain uncommon results."

DELEGATION

As the head coach, it is important to hand off responsibility for component pieces of the coaching process. This allows the head coach, in essence, to be in more than one place at a time. No coach can do everything him- or herself; the coach who fails to delegate is destined to fail. As a head coach, you will need to develop effective systems for enabling others to achieve the same results that you would produce if you did it yourself. This doesn't mean that you assign a new coach critical duties, such as play-calling or defensive strategy. Assistant coaches need to grow with your program. Delegate simple tasks at first; Later, when you feel the assistant coach is ready for more important tasks, allow them to take on more important duties. With delegation comes the commitment to perform at a high level and to take responsibility when things go wrong. The head coach must act as teacher and mentor to all of the coaches and people involved with his or her program. Anyone can make a mistake or make the wrong call. Part of the success of the program as a whole is how the head coach handles these situations. Assistant coaches are adults that have a great deal of pride in what they are trying to accomplish. If the head coach comes down hard on an assistant for

making a mistake, he will probably lose the respect of that coach—and possibly the other coaches as well. Delegation also brings with it ownership in the program as a whole. It is critical that your assistant coaches feel that they are important to the success of the overall program. You will notice that the most successful programs are those with coaching staffs that have been together for many years. It is important that the people to whom you delegate have the resources they need to succeed.

CONFLICT RESOLUTION

Coaches will be called on to resolve conflicts several times during a season. Most will be minor disagreements among players, but others may be significant. It is important that coaches respect the emotional realities of the situation and work toward a mutual resolution. To respect those emotional realities, you will have to spend time listening to different perspectives. Understanding the following points will help increase the chance that your conflict resolution tactics will be successful.

Consider the following in creating structure for resolving conflict:

- Do not suggest that serious conflicts be hashed out without a structured process to resolve differences. Find a skilled facilitator to help.
- Make sure that all parties really want to achieve a solution. If one party lacks the motivation to resolve the conflict, chances are good that progress will be slow and painstaking.
- Emphasize common interests. In most cases, both parties have a stake in producing common outcomes.
- Discourage blaming behavior and scapegoating. Encourage both parties to consider what behavior of theirs has contributed to the conflict.
- Encourage parties to be candid and diplomatic. Brutal verbal assaults do not help the process of resolving conflicts.
- Encourage both parties to move beyond global negative characterizations and describe specific behaviors that are problematic.
- Encourage both parties to articulate how they interpreted the other person's behavior. Frequently, someone's interpretation does not match up with the other party's intentions.
- Attempt to stay in the present. Dredging up ancient history rarely helps in making progress.
- Explore several different options as part of a resolution. Avoid having to choose one party's solution or the other.
- Try to incorporate suggestions from both sides in recommending a path forward. Give everyone something they want.
- Get each party to make an explicit verbal statement that they will positively contribute to a solution.
- Provide for followup. Commit to revisiting the issue to check on progress.

Defining the term "coaching" is complicated by the fact that those persons affected by the ability and influence of a coach perceive the coach differently. The school administrator views the coach as the teacher who directs the competitive play and behavior of all athletes who represent the school. The team sees the coach as a highly skilled teacher who builds game skills, teaches competitive play, and fosters an

appreciation for both virtue in cooperation and excellence in competition. Coaching is highly skilled teaching of a limited number of individuals. Coaching develops skills beyond the fundamentals and combines the abilities of individuals into a team effort with the focus on enthusiastic competition in the spirit of fair play, good sportsmanship, and friendship. The experience and demands of competitive play are complex; all persons concerned undergo a degree of intensity of effort and psychological stress. The following is a list of topics designed to assist the coach in preparing for the competitive season.

- Coaching is in-depth teaching of the advanced skills and strategies of the sport.
- Coaching requires expert knowledge of the sport.
- The coach must be willing to be a specialist.
- The coach must be willing to devote a large amount of time to a relatively small group of students.
- A coach must be sensitive, firm, insightful, adaptable, and flexible.
- A coach must be consistent.

PERSONAL KNOWLEDGE

Every coach needs to refresh and review before beginning the season. This may consist of concentrated reading, attending workshops or clinics, or visiting other coaches and teams to observe and ask questions. Many theories of play and techniques of skills and strategy change over time. It is the coach's responsibility to be aware of changes.

COACHING STANDARDS

The coaching profession is bolstered by local, state, and national standards that require coaches to meet qualifying standards prior to working with athletes.

COACHING EVALUATIONS

There are two primary types of evaluations: head coaches evaluating their assistants and head coaches being evaluated by the athletic director. Both types of evaluations are important indicators of the coach's success during the season. Evaluations serve two purposes. The first is to inform the coach about how he or she performed in a number of different categories, and the second is to help the athletic director decide whether or not to retain the coach for the next season.

ASSISTANT COACH EVALUATIONS

In most school districts, head coaches evaluate their assistants. The primary reason for this is obvious: the head coach has worked closely with his or her assistants all season long. In some districts, the athletic director evaluates all assistant coaches with direct input from the head coach. Both methods are effective and both require careful thought and detailed analysis. The evaluation process must not be rushed. Coaches need to take as much time evaluating the strengths and weaknesses of their assistants as they do planning for their next opponent. This takes time, but the benefi ts of a well-thought-out evaluation will reap rewards down the line. The assistant coaching evaluation should specify very specific strengths and weaknesses the coach possesses. The specifics should include everything from preseason work through the final season

meeting. This type of detail will assist the coach in preparing for the next season. Coaches that avoid listing weaknesses risk problems or litigation if there is ever reason to fire or (in the example given next) hire the coach. For example, a head coach had a volunteer coach that worked for him for two years. The volunteer came to practice as much as he could, but didn't make it to team meetings or special events. The head coach went along with this because it allowed another adult with the background in the sport to help out with drills and coaching. A paid assistant position became available the next year. The volunteer applied for the position, but wasn't hired. The volunteer filed a grievance and fought hard to have the decision reversed, claiming that he didn't have any problem areas (except missing an occasional practice and meetings) listed on his evaluation. Since the volunteer coach wasn't being paid, the head coach had not been critical in his evaluation. If the head coach had given the volunteer an honest, detailed evaluation, this situation might not have happened. A written evaluation is only the first step in evaluating coaches. The head coach must set up a private meeting with all of his or her assistants after the evaluations have been written. Evaluations should give the head coach and assistants an opportunity to end up on the same page when the evaluation meeting is over. This meeting should be constructive and allow both sides to explain how they perceived the season went. If the evaluation needs to be revised after the meeting is held, this is fine. Often a clearer picture arises once both sides have time to talk out specific items. Once the evaluation is complete, both the head and assistant coach will sign, date, and deliver it to the athletic director for his or her signature.

HEAD COACH EVALUATION

Most head coaches are evaluated by their athletic director. The athletic director has the responsibility to maintain a focused and educationally sound athletic program. This includes all aspects of every sport in the school. Head coaches will be evaluated on their performance in numerous areas involving their sport. These areas include, but are not limited to supervision of athletes and coaches, implementing local, state, and national rules and regulations, school and public relations, discipline, practice and game schedules, training rules, medical protocols, budgets, equipment, facility management, relationship with the press, and knowledge of their sport.

Chapter 3

Sport Psychology

Because there are many ways in which we can apply psychology to sport and, given the wide range of activities that different cultures regard as sport, it is helpful to adopt quite a broad definition of sport psychology. In 1996, the European Federation of Sport Psychology (FEPSAC) produced such a broad definition, which, slightly simplified, reads, 'Sport psychology is the study of the psychological basis, processes and effects of sport.' This of course begs the questions, what is sport and what is psychology? Although many athletes would insist that sport necessarily includes an element of competition, the term 'sport' is used, both in the FEPSAC definition of sport psychology, and throughout this book, in the broadest sense, including any physical activity for the purposes of competition, recreation, education or health. Psychology is often defined as 'the science of mind and behaviour'. We can take a brief overview of psychology and begin to learn how to think critically and creatively about psychological theory and research. Sport psychology (or sports psychology, as some prefer) is thus a broad church. Many American sport psychologists draw a sharp distinction between academic sport psychology, which focuses on all the factors affecting participation and performance in sport, and applied sport psychology, which focuses purely on applying psychology to enhance athletic performance. At the time of writing, European writers generally do not subscribe to this rather rigid distinction, and this book crosses freely between academic and applied sport psychology. The topics covered here, personality, attitudes, aggression, stress and anxiety, group dynamics, motivation and skill acquisition, should be both of academic interest and applicable to working with athletes and, in some cases, spectators.

A BRIEF HISTORY OF SPORT PSYCHOLOGY

Sport psychology has existed in some form for almost as long as psychology itself. The first recorded study in sport psychology took place at the close of the nineteenth century. Norman Triplett performed what is often cited as the first experiment in social psychology as well as the first in sport psychology. Triplett investigated the phenomenon of social facilitation, in which performance is affected by the presence of others. He demonstrated that cyclists tended to cycle faster when racing against other cyclists than they did alone. Triplett did not pursue further sport-related research, however, and it was not until the 1920s that the discipline of sport psychology was formally established. In 1925, Coleman Griffith set up the Athletic Research Laboratory at the

University of Illinois. Griffith, who also put sport psychology on the map by establishing a university course, publishing two major textbooks and acting as a consultant to professional sports teams, is often called the 'father of sport psychology'. The early path of sport psychology did not run smoothly, however, and the Athletic Research Laboratory closed in 1932 due to lack of funds. Between the 1930s and the 1960s, there was little activity in the field of sport psychology. In the Soviet Union, sport psychology emerged as a discipline shortly after the Second World War. It is of course difficult to obtain accurate information about the practice of Soviet psychology during the Cold War, but it is commonly believed that, during the 1960 Melbourne Olympics, Eastern European teams employed sport psychologists. Certainly, we know that, by the early 1970s, East German and Soviet teams were routinely employing sport psychologists to enhance athletic performance in international events. Sport psychology reappeared in the USA in the 1960s, and was taken up in Britain and the rest of Europe a few years later. The area has since expanded worldwide to become one of the fastest growing new academic disciplines. Interestingly, until very recently, the study of sport psychology was firmly located in the domain of sport sciences as opposed to within psychology. This may be changing, however. In 1986, the American Psychological Association officially recognised sport psychology as a branch of psychology, and in 1993 the British Psychological Society formed a Sport and Exercise Psychology Section, which has now become a full division of the society.

WHAT IS A SPORT PSYCHOLOGIST?

We can think of this question in two ways; first, who can call himself or herself a sport psychologist, and second, what do sport psychologists do? To address the first question, currently, in Britain, there is no compulsory registration of sport psychologists; therefore, in theory, anyone can call himself a sport psychologist. In reality, of course, it would be highly unethical for anyone not properly trained to use the title 'psychologist' in any context. At the time of writing, legislation is being brought in which will place legal limits on the use of the term. The British Association of Sport and Exercise Sciences (BASES) keeps a register of approved sport psychologists. At the 1998 annual conference, the British Psychological Society (BPS)'s Sport and Exercise Psychology Section (now 'Division') approved the principle of granting the title Chartered Sport Psychologist to appropriately qualified people. At the time of writing, legislation is at the consultation stage to restrict certain titles, including Chartered Sport and Exercise Psychologist, to those on a register, to be maintained by the Health Professions Council. To register with BASES as a sport psychologist, one needs either a first degree in psychology and a higher degree in sport science or a first degree in sport science and a higher degree in sport psychology. To achieve chartered status from the BPS, it is necessary to have a BPS-approved first degree in psychology and BPS-approved postgraduate training, including supervised practice. There is currently no such approved postgraduate training. A similar situation exists in the USA, where, although the American Psychological Association (APA) has a Division of Sport Psychology, it does not accredit courses. There is some controversy surrounding the accreditation of sport psychologists. The BASES scheme for registration of sport psychologists has existed only since 1992, and many people who were already working as sport

psychologists chose not to join the register or were unqualified to do so. Anshel has pointed out that many of those working full-time with athletes do not have the time, resources or inclination to pursue the lengthy procedures necessary to become registered, and that registration thus excludes some of the Britain's most experienced practitioners. On the other hand, compulsory registration would provide a measure of protection for the public from dubious or underqualified practitioners. With regard to the second question, the work carried out by sport psychologists is quite varied.

The European Federation of Sport Psychology recognises three interrelated tasks for sport psychologists:

- **Research; investigation into all aspects of the psychology of sport, both theoretical and applied.**
- **Education; teaching students, officials and athletes about sport psychology.**
- **Application; assessment of and intervention in psychological problems connected to sport. This can involve consulting to whole teams or counselling of individuals.**

Because sport psychology is now such a broad field, it is becoming impossible for sport psychologists to keep up with all aspects of their discipline. Nowadays, you will find that many sport psychologists have become highly specialised. For example, psychologists may specialise in the study of motivation. They may carry out research into motivation, teach coaches about motivation and perhaps work with individual athletes to improve their motivation.

FOR THOSE NEW TO PSYCHOLOGY

For readers new to psychology, before ploughing into the specifics of sport psychology, it is perhaps worth taking some time to overview the nature of psychology in general, and to begin to learn to think like a psychologist. To understand psychology, it is necessary to understand what we mean by the terms 'theory' and 'research', and to be familiar with the different theoretical approaches psychologists can draw upon to understand a phenomenon.

THEORY AND RESEARCH

The writings of psychologists largely consist of two very important elements: theory and research. A psychological theory is intended to explain why something takes place. We can look at a range of theories that aim to explain the relationship between arousal, anxiety and sporting performance. It is tempting to ask, 'which is right?' when confronted by a range of alternative theories; however, it is rare in psychology for a single theory to hold all the answers. Usually, each theory is helpful in its own way because it helps us understand and think about a different aspect of the situation. The term 'research' is a very broad one, and is used by psychologists in different fields to mean rather different things. However, a simple definition appropriate to sport psychology is the gathering and analysing of data (information).1 Often, though not necessarily, this is done in order to test an idea or hypothesis. For example, we might hypothesise that team players are more sociable than athletes in individual sports. There are many procedures by which data can be gathered.

APPROACHES TO PSYCHOLOGY

The BPS recognises five aspects of or approaches to the study of psychology. These are individual differences, social psychology, cognitive psychology, physiological psychology and developmental psychology. Examples of how each of these approaches can be applied to sport psychology are shown in Table 1.1. From Table 1.1 it is quickly apparent that there is considerable overlap between the five approaches and that in practice they are not distinct from one another. For example, attitudes are an aspect of social psychology because they affect our interpersonal behaviour, but they also vary from one person to another; thus, they are also studied as an aspect of individual differences. Similarly, personality is most obviously an aspect of individual differences; however, we can understand the reasons why we differ in our personality with reference to physiological processes and developmental processes.

Table 1.1 Applying psychological approches to understanding sport

Approach	Main focus of approch	Examples in sport psychology
Individual differences	Variations in the characteristic of individuals	Personality attitude to sport, motivaiton, anxiety
Social psychology	Ways in which people interact with on another	Atttitude to sport aggression, team cohesion, team leadership
Cognitive psychology	Ways in which the mind process information	Skill acquisition, motivation, imagery
Physiological psychology	The relationship between biological and psychological functioning	Arousal and performance, biological basis of personality traits
Development psychology	The process of development of psyshcological functions and characteristics across the lifepan	Social learning, gender development, personality devloment

THEORETICAL ORIENTATIONS IN PSYCHOLOGY

An alternative way to classify approaches to psychology is in terms of its theoretical orientations. Unlike other sciences, which tend to have broad agreement about the fundamentals of what they study, how and to what end, psychology is made up of different theoretical schools, each of which takes a different view of the subject. Table 1.2 shows some of the major theoretical orientations in psychology and examples of their contributions to sport psychology. Some psychologists operate very much within a single theoretical framework and can be said to have a distinct orientation, whilst others dip into different orientations and approaches as required. This latter is called an eclectic approach.

Theoretical orientation	Underlying assumptions	Examples of applications in sport psychology
Behavioural (learning)	• Focus is on observable behaviour • Behaviour is acquired by learning	Social learning of attitudes, personality, aggression

Table. 1.2 Major theoretical orientations in psychology

Theoretical orientation	Underlying assumptions	Examples of applications in sport psychology
Cognitive	• Focus is on mental processes • Mental processes underlie behaviour and emotion	Cognitive anxiety Cognitive aspects of motivation
Psychodynamic	• Focus is on the unconscious mind • There are unconscious influences on us, including instinct and early experience	Personality development Unconscious factors in attitudes Instinct and aggression
Humanistic	• Focus is on human potential and growth	Achievement motivation
Physiological	• Focus is on physiological processes • Physiology underlies psychological processes	Trait theories of personality Arousal and somatic anxiety
Social	• Focus is on interpersonal and group processes • Social situation affects psychological processes	Social facilitation Team membership

LEARNING TO THINK LIKE A PSYCHOLOGIST: CRITICAL AND CREATIVE THINKING

Psychology is not just a collection of theory and research. To study psychology effectively, we also need to learn to think like a psychologist. Perhaps the most important aspect of thinking psychologically is critical thinking. This means that, although we try to rely on evidence rather than common sense, we are also careful not to take theory or research findings at face value. Whenever we encounter a psychological theory or study, we should ask ourselves certain questions. Recently, psychologists have begun to recognise that creative thinking as well as critical thinking is an important aspect of being a good psychologist or psychology student. We think creatively when we develop new ideas or think about a problem from a different angle.

ATTITUDES TO SPORT

The social psychologist Elliott Aronson has defined an attitude as 'an enduring evaluation – positive or negative – of people, objects and ideas'. We can pick out two important features of attitudes from this definition. First, attitudes are longlasting. Once we have established a firm attitude to sport, we are likely to stick with it. Second, attitudes involve making judgements. Our attitudes to sport are likely to emerge as either distinctly positive or distinctly negative. Understanding attitudes is important to sport psychologists for a number of reasons. If parents and teachers, can understand how children acquire attitudes, they can use this understanding to try to ensure that as many young people as possible develop positive attitudes to sport. By understanding the link between attitudes and behaviour, we can try to help more people enjoy the medical and psychological benefits of both participation and spectatorship in sport. An understanding of the ways in which attitudes can be changed is valuable in helping us to increase sporting participation and motivate athletes.

THE NATURE OF ATTITUDES

Pennington et al distinguished between two approaches to understanding attitudes. The functional approach looks at why we have attitudes, and how adopting particular attitudes can be helpful to us. The structural approach looks at what different factors make up attitudes.

Functions of Attitudes

Smith et al suggested that having attitudes serves three main psychological purposes: the adaptive function, the knowledge function and the ego-defensive function. The adaptive function of attitudes involves the usefulness of certain attitudes in helping us achieve our goals. For example, one way in which we might 'get in' with a desirable crowd is to share their interest in sport in general or in a particular sport. This is not to say that people regularly and cynically change their attitudes in order to gain favour. It is more likely that, without being aware of it, we are influenced in our attitudes by our awareness of how much good or harm certain attitudes can do us. The knowledge function of attitudes refers to the fact that having attitudes makes the world a simpler and more predictable place. It also means we can save ourselves 'mental energy' that would otherwise have to be spent analysing every person and situation we come across. For example, we might have a universally positive view of sport, regardless of the nature of different sports and the contexts in which sport takes place. Such an attitude then frees us from the complex business of making moral judgements about details such as safety and politics. The ego-defensive (or self-defensive) function of attitudes concerns the fact that we can adopt attitudes to help protect ourselves from difficult or painful feelings. For example, one way children might defend themselves against the feelings of humiliation they have experienced in PE lessons is to adopt a strongly negative attitude to all sport. People whose pride has suffered by a defeat in sport might similarly adopt a defensive attitude: 'I'm not bothered – I'm sick of basketball anyway.' Teachers, coaches and parents must recognise how people use attitudes to make themselves feel better. We should not take people too seriously if they say they are giving up their sport after one bad game. If, on the other hand, a player adopts an enduring negative attitude after a bad experience, we may wish to intervene to alter this attitude. Of course, the defensive function of attitudes does not always lead to negative attitudes to sport and sport psychology. In a study amusingly entitled 'Death can be good for your health', Arndt et al examined the relationship between encountering reminders of one's own mortality and attitudes to exercise. Regardless of their current fitness or sporting participation, participants reminded of their mortality experienced a shift in attitudes in favour of regular exercise. Presumably, this was defensive, a pro-sport attitude being used to deny the reality of death.

Structure of Attitudes

The structural approach to attitudes looks at the different components that make up our attitudes. It is generally agreed that there are three aspects to our attitudes, the cognitive dimension, the affective dimension and the behavioural dimension.

- **The cognitive dimension of attitudes concerns our beliefs.**
- **The affective dimension of attitudes concerns our feelings (the term 'affective' means emotional).**
- **The behavioural dimension of attitudes concerns our actions.**

Our beliefs are often stereotyped. We might, for example, hold stereotypical views about those who favour particular sports. Stereotypes are beliefs that exaggerate the similarities of all members in a group and minimise the differences between members of the group. Thus, we might believe that all rugby players drink too much or that all football fans are violent. We also hold beliefs about the benefits of exercise and sport. Such beliefs are likely to have a strong effect on our sport and exercise behaviour. It seems likely that our feelings about sport result at least in part from our beliefs. For example, if we believe that rugby players are always drunk or that football fans are all violent, we are likely to feel repulsed or frightened by them. We are also likely to have strong feelings about exercise and sport in general and about particular sports. Research has shown that the amount and type of information about a sport that are given to students can affect their feelings about that sport. In general, the more we know about a sport, the more positive we feel about it. Theodorakis found that by increasing the level of technical information given to students on a skiing course, it was possible to make them feel more positive about skiing.

MEASURING ATTITUDES

We can measure attitudes directly by asking people questions or asking them to respond to statements that describe beliefs, feeling or behaviours associated with the topic we are interested in. There are other, indirect ways of measuring attitudes (such as measuring physiological change or responses to ambiguous pictures), but sport psychologists tend to rely more on direct measures. Direct measurement of attitudes is done in three main ways: Likert scales, semantic differential scales and Thurstone scales.

Likert Scales

Likert developed the simplest and what has become the most common way of measuring attitudes. We start by producing an equal number of positive and negative statements concerning whatever we are measuring attitudes to. These statements can concern beliefs, feelings and behaviours. Then people are asked to respond to the statements, usually on a 5-point scale, ranging from (SA) 'strongly agree' to 'strongly disagree' (SD).

Likert scale items measuring attitudes to boxing

	SA	A	?	D	SD
1. Boxing causes brain damage.	[ ]	[ ]	[ ]	[ ]	[ ]
2. I watch boxing matches on TV.	[ ]	[ ]	[ ]	[ ]	[ ]
3. I find boxing exciting.	[ ]	[ ]	[ ]	[ ]	[ ]

Item 1 refers to a belief, item 2 to a behaviour and item 3 to an emotion. Thus, cognitive, affective and behavioural dimensions are all included. This is worth considering in designing one's own Likert scales. Note also that item 1 is a negative

statement whilst the other two are positive statements. This is important because some people have a tendency to agree with most items (the yea-sayer effect) or generally to disagree (the nay-sayer effect). In order to score this type of test, we need to give all the positive statements values of 1–5 or 0–4, 5 being the most positive. For the negative statements, we must reverse this, giving them values of 5–1 (or 4–0). Each person who fills in the test can then be given a score for each item and finally an overall score, which shows how positive or negative his or her attitude is overall.

Semantic Differential Scales

Osgood et al developed an alternative procedure for direct measurement of attitudes, the semantic differential scale. To prepare such a scale, we first think of a number of words with opposite meanings that are applicable to describing the subject of the test. There are seven points between each pair of words. The respondents' task is to select a point between the two extremes that best describes how they feel. Kenyon developed a semantic differential scale called the Attitudes Toward Physical Activity to measure how positively people feel about sport and exercise. The ATPA uses eight pairs of words opposite in meaning, referring to various types of physical activity and various functions of physical activity.

Semantic differential items from the ATPA

(a) Sport as a social experience

good	1 2 3 4 5 6 7	bad
pleasant	1 2 3 4 5 6 7	unpleasant
wise	1 2 3 4 5 6 7	foolish

For example, in the three items above, someone with a positive attitude to sport as a social experience would be expected to select numbers nearer 1 than 7 for each word pair. The ATPA has been commonly used as a measure of attitudes to sport in sport psychology research.

Thurstone Scales

Thurstone & Chave developed a complex system of attitude measurement. Thurstone scales resemble Likert scales in that they appear as a series of statements to which respondents choose a response based on how closely they agree with the statement. However, Thurstone believed that it was important that we should know just how positive or negative each statement in a scale is, not just whether it is positive or negative. This is achieved by having a panel of at least 50–100 judges rate each statement for positivity or negativity. The advantage of this is that when we add up someone's scores, we can weight very positive and very negative statements more heavily than only mildly positive statements. Thus, to return to the example of boxing, if someone replied 'strongly agree' to the statement, There should be an immediate world ban on boxing, it would represent a more negative view than the same response to the statement, Boxing can be dangerous. Although, in principle, Thurstone scales should be more valid than Likert scales because of the weighting of items, in practice, few researchers are willing to go to the extra effort needed to compile this type of

scale. As Oppenheim pointed out, Likert scales generally produce much the same results as Thurstone scales with a fraction of the preparation time.

THE FORMATION OF ATTITUDES TO SPORT

How do we form the attitudes we hold to sport? Think about your own sporting attitudes for a moment. You may remember early positive or negative experiences that shaped your attitudes. You might be able to point to family members or teachers that were a strong influence on you. Did you take up a sport to impress someone attractive or get into the in-crowd, and then find you liked the sport? You may feel that you are just the type of person that is naturally attracted to sport, or you may not. Actually, research has linked all these factors to the development of attitudes.

Personality, Genes and Attitudes

Eysenck proposed that people high in extroversion and psychoticism tend to have pro-sport attitudes. To trait theorists such as Eysenck, personality is primarily determined by genetic factors. It is certainly conceivable that genes may influence sporting attitudes. This is not to say that there is a gene for liking sport, but, if some aspects of personality are inherited, it may be that we can inherit a predisposition to developing certain kinds of attitude. There is indeed some evidence that our genetic make-up may predispose us to generally positive or negative attitudes to sport. Waller et al found that separated identical twins (who are genetically identical) have more similar views on a variety of topics than separated fraternal twins (who share 50% of their genes). This study implies that genes play some role in affecting our attitudes. However, we should remember that there are serious difficulties in conducting studies with separated twins – we never know for sure whether similarities between separated twins are due to similarities in genetics or environment. Actually, it is probable that our childhood environment is more important than our genes in influencing the development of our attitudes.

Social Learning of Attitudes

Children tend to observe and imitate the behaviour of their role models. Thus, children are likely to adopt the attitudes to sport they see in their parents. Children also receive powerful reinforcers in response to the attitudes they express from a very early age. Social learning can help explain attitudes to both participation and spectating. We can easily imagine a scenario where a boy observes his father intently watching a football match and cheering when one team scores. The boy would be likely to copy the father's behaviour. It is also extremely likely that the father would respond to this by praising the boy and explaining the finer points of the match – thus reinforcing the behaviour. Bandura's four-stage model of this process is shown in Figure 4.2. You may be thinking that this is a shamefully politically incorrect example – what about girls' attitudes to sport? Actually, this was a deliberate ruse to make you think about how boys and girls might be exposed to different learning experiences. Imagine that in the above scenario, instead of the son, the young daughter of a football fan cheered at the football. It is unlikely that she would receive the same positive reinforcers as her male counterpart. She might well be ignored – or, worse, punished. In our culture, there are

fewer opportunities for girls than boys to learn the pleasure of sport spectatorship. The problem of gender differences in attitudes to sport spectatorship was highlighted during the 1998 World Cup, when the disparity between some men's and women's attitudes to watching football became so polarised that the term 'World Cup widows' was coined, and Relate Marriage Guidance had to issue advice on how to maintain a relationship between two partners with different attitudes to watching football.

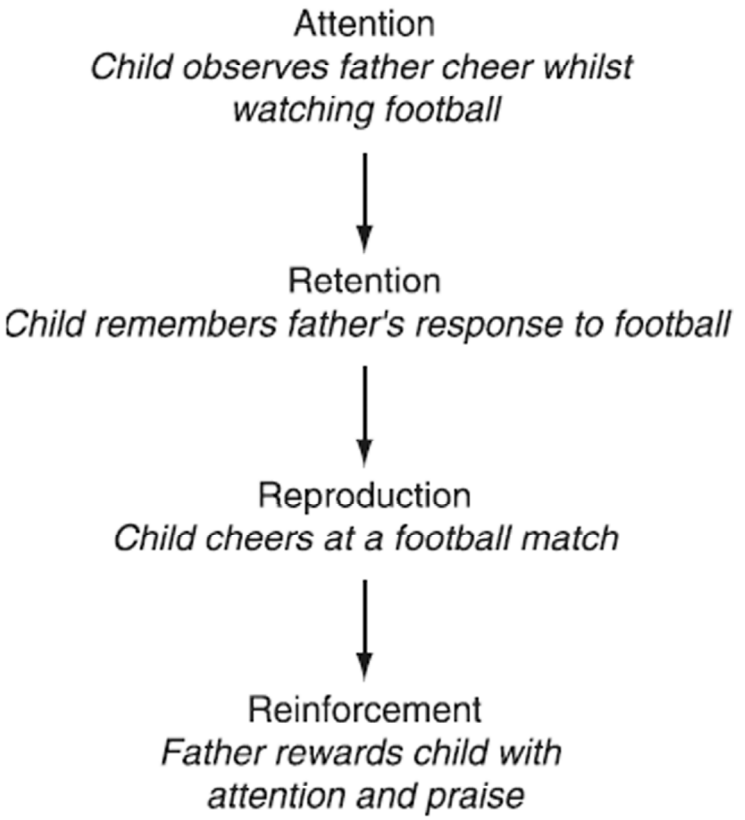


Fig. 4.2 Social learning of a child's attitude to football.

Parental Involvement

The extent to which parents actively get involved in children's sporting activities can affect their attitudes to sport. At one extreme, parents who do not acknowledge children's achievements are clearly not giving them appropriate reinforcement. At the other extreme, it may be possible for parents to become overinvolved. This was supported by a study by Stein et al, who surveyed 42 13–14-year-olds who played soccer, volleyball or American football. Most respondents said that their parents were moderately involved and that this was appropriate. Both very low and very high levels of involvement were associated with reduced satisfaction with sport and increased stress levels.

Desire for Health and Physique Enhancement

Currently, there is increasing social pressure on people of all ages and both sexes to maintain a particular body type that is characterised by low fat mass and high muscle mass. This is a paradoxical situation for psychologists. On the one hand, there is genuine concern about the rapidly rising rates of child and adult obesity and the accompanying health problems. Thus, we may argue that society is right to pressure people to use sport and exercise to manage their weight and fitness. On the other hand, the evidence of rising rates of eating problems suggests that too much emphasis on the importance of sport in weight management can have serious, negative psychological consequences. This was underlined by a study in which 371 children aged 10–15 were assessed for their exercise and sporting activity, attitudes to their weight and other weight-control strategies. Nearly half believed they were too fat. A significant minority used extreme weight-control strategies, such as fasting, vomiting and taking slimming pills, as well as exercise.

ATTITUDES TO COMPETITION

Social learning theory is useful in understanding how we acquire our attitudes to competition. There has been much discussion in the last few years of British attitudes to competition. On the one hand, it has been pointed out that the British may be less motivated to win than other cultures because of the philosophy, 'it's not the winning that counts, but the taking part'. On the other hand, concern has also been expressed that too much emphasis on competition prevents many children from learning to enjoy sport. One of the most comprehensive surveys of attitudes to sport, the Miller Lite Report, found that 86% of American parents surveyed thought that PE teachers place too much emphasis on competition. Gervis pointed out that problems can arise when early training overemphasises the importance of winning. This can be at least partially understood in terms of social learning theory. If reinforcement is provided only for winners, then, by definition, it is provided for half the participants in team games, and much fewer in individual sports. With most participants failing to receive positive reinforcement, it is unlikely that they will maintain their interest in sport. There appear to be differences between athletes and non-athletes in attitudes to competition. Finkenberg & Moode surveyed 164 university students on their attitudes to sport, half of these being participants in sport at university level. Athletes placed more emphasis on the importance of competition in sport than did the control group, along with opportunities for social status and career enhancement. Non-participants in sport were positive about sport but saw its purpose more in terms of enhanced self-esteem and character development.

ATTITUDES TO SPORT AND SPORTING BEHAVIOUR

As Gill says, we are interested in attitudes in sport psychology, not so much for their own sake, as for their influence on sporting behaviour. Therefore, a very important issue concerns the extent to which attitudes can be used to predict behaviour. Early psychological research seemed to show that there was little relationship between attitudes and behaviour, but our current thinking is that attitudes can effectively predict behaviour, but only if we also have access to certain other information.

The Theory of Reasoned Action

Ajzen & Fishbein have produced a model of the link between attitudes and behaviour that has proved popular in sport psychology. This is called the theory of reasoned action (TRA). A simple version of the TRA is shown in Figure 4.3, as used to explain participation in the TRA, two factors determine individuals' intention to take part in sport: their general attitude to sport and how socially desirable they consider sport to be. Therefore, before we even intend to participate in sport, we need to have positive feelings and beliefs about sport and we need to see sport as a socially desirable activity. Of course, the intention to participate does not necessarily lead to the behaviour. Other circumstances may still interfere. For example, we might be particularly busy or plagued by a recurring injury.

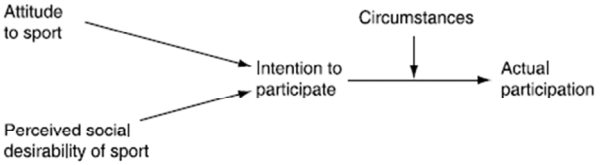


Fig. 4.3 Applying the theory or reasoned action to explaning participation in sport.

The Theory of Planned Behaviour

Ajzen introduced a modification to the theory of reasoned action, creating an offshoot known as the theory of planned behaviour (TPB). The idea was that, although the TRA is effective in predicting how people would behave in situations where they have full control over their actions and can behave entirely voluntarily, it is less useful in situations where behaviour is highly constrained by circumstances. The theory of planned behaviour gets around this by introducing a further variable, perceived behavioural control, which influences intentions. As in the TRA, there is a strong link between intention and action; however, we formulate the intention to act in a certain way only when we perceive that we have control over our behaviour.

Discussion

Sport psychologists widely support the TRA and TPB as explanations of the relationship between attitudes to sport and sporting behaviour. Gill had students survey 68 people on their attitudes to jogging. They then asked the participants how many times per week they jogged (as a measure of behaviour). A moderate relationship (r = 0.44) was found between attitude to jogging and frequency of jogging. However, as the TRA would predict, a much stronger correlation (r = 0.81) emerged between intention to jog and frequency of jogging. A study by Wankel et al suggested that the TPB predicts participation more accurately than the TRA. Data from over 3000 Canadians taken from a national survey of well-being were analysed, looking at measures of exercise, perceived behavioural control and social norms. Attitudes to sport and perceived behavioural control were more predictive of taking part in sport than social desirability, supporting the TPB as opposed to the TRA. In another study by the same research group, Mummery & Wankel found that both perceived behavioural control and social desirability affected attitudes to participation in adolescent swimmers. Both a recent

meta-analysis and a qualitative review of studies on the TRA and TPB have confirmed that research has supported the idea that the TPB is a superior explanation. There are important lessons to be learned from the body of research on the link between attitudes and behaviour in sport. To understand what factors affect the decision to take part in sport, we need to know subjects' perception of its social desirability and their beliefs about their own opportunity to participate. Both of these perceptions may be inaccurate, and one way to persuade more people to take part in sport may be to tackle these inaccurate beliefs.

The Transtheoretical Model (TTM)

The TTM was originally produced by Prochaska & DiClemente in order to understand better why some smokers succeeded in giving up without professional help. Marcus & Simkin applied it to understanding the process whereby people take up and maintain sport/exercise behaviour. The term 'transtheoretical' refers to the fact that the model comprises elements from several psychological theories. According to the TTM, people go through five stages before they regularly participate in sport. Each stage is defined by a different relationship between intentionality and behaviour. This makes the model dynamic and gives it an advantage over the TRA and TPB, which assume a static relationship between intentions and action. Of course, people do not simply pass through the five stages and end up with maintenance. They may relapse a number of times at different points for a number of reasons, ranging from injury to the seasonal nature of their chosen sport. A simple example is the person who takes up jogging in the summer but relapses to preparation or even contemplation when the nights draw in and jogging becomes a considerably colder and wetter experience! The model explains why some people undergo such relapses in terms of self-efficacy. Briefly, self-efficacy is our perception of our own competence in an activity. The more competent we perceive ourselves to be, the more likely we are to maintain the physical activity. This has an important practical application; we can encourage people who have recently taken up a sport to maintain it in the face of new barriers, such as injury, weather or a change in working or family patterns that makes training less convenient, by building their confidence in their ability. During the progress through the five stages, an individual may use a variety of strategies to encourage the continued shift from inactivity to activity. These include making use of social support, as in cultivating friendships with athletes who tend to socialise in sporting contexts. Another approach is stimulus control. This involves removing oneself from situations that encourage inactivity and instead planning events such as skiing or cycling holidays that will inevitably mean taking part in sport and that will provide incentives to training. Individuals may also deliberately expose themselves to information on the health benefits of sporting participation (this is called consciousness raising) or the risks of inactivity (this is called dramatic relief). On any occasion, influenced by their self-efficacy beliefs and activity strategies, individuals are faced with a choice of whether to proceed with sporting activity. This involves a cost-benefit analysis in which they weigh the advantages of training this evening against the cons. The influence of the pro arguments should increase as the individual progresses through the five stages.

AGGRESSION AND SPORT

As a society, we have a certain ambivalence about aggression in sport. On the one hand, as Russell has pointed out, sport is perhaps the only peacetime setting in which we not only tolerate but actively encourage and enjoy aggressive behaviour. In the notoriously violent ice hockey, violence clearly sells, attendance at matches being positively correlated with frequency of violent acts. On the other hand, there is a moral panic regarding football hooliganism, and in recent years there have been a string of high-profile court cases in which athletes have pursued cases against others who deliberately injured them. One reason for this apparent ambivalence is that we tend to see aggression very differently in different situations. Before we proceed any further, it is perhaps useful to look more closely at how we should define aggression.

DEFINING AGGRESSION

It is perhaps easiest to begin by saying what aggression is not. Aggression is not competitiveness, nor is it anger. Competitiveness is an attitude; anger is an emotion. Whilst anger and competitiveness may both contribute to aggression, aggression itself is a behaviour. Aggression, by definition, involves actively doing something unpleasant to someone. Aggressive behaviour may come in many forms, ranging from verbal abuse – designed to cause psychological harm – to physical violence. It is generally agreed that all aggression involves the intent to cause harm in some form; thus, behaviour which accidentally harms someone is not aggression. Putting these factors together, a simple working definition of aggression would be something like this: 'Behaviour of any kind that is carried out with the intention of harming another person.'

Hostile Aggression, Instrumental Aggression and Assertiveness

Whilst this simple definition may suffice when describing aggression in most situations, things are more complex in sport. Clearly, when we perform a rugby tackle or a karate kick, we do so in the knowledge that we are inflicting certain discomfort on the other athlete, and that there is some risk of causing injury. This raises the difficult question, are behaviours which involve hurting another person within the rules of the sport truly aggressive? Baron addressed this issue in his influential distinction between hostile and instrumental aggression.

- Hostile aggression takes place when the primary intention of the behaviour is to harm the other player. This type of aggression is accompanied by anger, and the underlying wish is to see the victim suffer.
- Instrumental aggression takes place when the behaviour is clearly likely to cause harm, but its intention is to achieve a different aim, such as to score a point or prevent the opposition from scoring a goal.

Husman & Silva have made the further distinction between aggression and assertiveness. Assertiveness involves the type of behaviour that might appear aggressive, but which does not result in harming an opponent. In many sports, for example, we might choose at certain times to charge directly toward an opponent, perhaps with an accompanying cry, but without any intention of making contact. The classic example of this is rushing the net in tennis. Thirer pointed out that physical

contact can be assertive rather than aggressive, provided the intention is to gain dominance over opponents rather than to injure them. Thus, footballers can shoulder-barge one another while tackling, but, provided the intention is to obtain the ball rather than to injure, this is assertive rather than aggressive behaviour. In contact sports, we generally accept a degree of instrumental aggression, although in no sport is it acceptable to inflict serious damage on an opponent for the sake of gaining or saving a point. There is normally an elaborate set of rules in contact sports to make sure that moderate levels of instrumental aggression are permitted, whereas serious instrumental aggression and hostile aggression are not. Thus, although one footballer pushing another off balance would be unlikely to receive a card from the referee, high rugby tackles and low punches in combat sports, which are judged likely to cause serious harm, are banned. Even in ultimate fighting, designed so as to have the minimum interference of rules, certain moves are banned. As Tenenbaum et al pointed out, spectators as well as athletes can display both hostile and instrumental aggression. A crowd may hurl objects and abuse at players. If they do so with the aim of distracting the opposing team and so giving their own team an advantage, this constitutes instrumental aggression. If, however, it is done in anger and with the intention of harming opposing players, the same behaviour would be classed as hostile aggression.

Sanctioned and Unsanctioned Aggression

Apter has pointed out that there is often a set of unofficial rules, as well as official rules, governing what aggressive behaviours are acceptable. Thus, a footballer committing a professional foul to avoid conceding a goal is committing sanctioned aggression; that is, instrumental aggression that, whilst not within the official rules, is accepted as normal even though it would be punished. The case of combat sports raises particular problems for making a clear distinction between hostile and instrumental aggression, as the whole aim of the sport is to cause some degree of harm. Here, the distinction between sanctioned and unsanctioned aggression is perhaps a clearer one. We would probably all accept that boxers might lose their temper and try to hurt opponents, as by clashing heads in a clinch, and this would be sanctioned even if the fighter clearly breached the rules. However, striking at neck or groin is acknowledged to be extremely dangerous and would thus be unsanctioned.

THE LINK BETWEEN AGGRESSION AND PERFORMANCE

It is widely believed that the use of aggression wins games. The baseball coach Leo Durocher famously said, 'Nice guys finish last.' In Tutko & Ogilvie's athletic motivation inventory, aggression was one of the 10 personality traits believed to be associated with athletic success. Of course, we should bear in mind the distinction between hostile aggression, instrumental aggression and assertiveness. It may be that the conventional wisdom supporting the value of aggression may in fact be supporting assertive behaviour rather than aggression. Young has noted the increase in unsanctioned violence in contact sports in recent years, and proposed that this is a direct result of increased professionalisation and the resulting financial incentives to win. There have been high-profile incidents in which the introduction of new and aggressive techniques appears to have enhanced performance. However, this is not to

say that aggression necessarily enhances performance. Surprisingly, there has been relatively little research on the link between aggression and results, and almost all published research has involved ice hockey. Results regarding the link between aggression and success in ice hockey are equivocal. McCarthy & Kelly found a positive relationship between the time taken for penalties (a measure of a team's aggression) and number of goals scored. However, Wankel compared the penalty times of winning and losing ice hockey teams and found no difference. Since ice hockey is such an aggressive sport, if no clear results emerge here, it is unlikely that aggression would be associated with success in other sports. Of course, the situation and the reason for the aggression would make a difference to whether it was helpful. Whilst the willingness to perform a professional foul would probably benefit a team, the anger associated with hostile aggression would probably be unproductive, harming concentration and decision making. Of course, much depends on the sport. Some sports, in particular combat sports, are inherently aggressive, and points are awarded in some martial arts contests for aggression. The sort of psyching up used for at least some combat sports can be intensely aggressive. The legendary bare-knuckle boxer Lenny McLean put it eloquently: 'What I have to do is hate – and I mean really HATE. From the top of my head right down to my ankles. The man in front of me has interfered with my wife, he's interfered with my kids. Bastard'.

THEORIES OF AGGRESSION

A number of psychological theories aim to explain the origins and triggers of human aggression. Within sport psychology, three broad approaches have been particularly influential: instinct theories, social learning theory and the frustration–aggression hypothesis.

Instinct Theories

In psychology, the term 'instinct' is used slightly more precisely than in ordinary conversation. An instinct is an innate tendency to behave in a certain way. By 'innate', we mean that the behaviour is influenced by our genetic make-up and is therefore present at birth, as opposed to learned. A number of psychological theories see aggression as instinctive and, at least to some extent, inevitable. Sigmund Freud proposed that we are born with two opposing instincts, the life instinct and the death instinct. Our death instinct leads us to be aggressive. Freud proposed that although the instinct for aggression is always with us, we can to some extent exert conscious control over it. Thus, aggressive behaviour is not always inevitable. Some contemporary writers influenced by Freud have viewed sport in general as a healthy way of expressing our death instinct. For example, Richards looked at the importance we attach to kicking in expressing our aggressive tendencies, as in phrases such as 'putting the boot in' and 'a kick in the teeth'. Richards suggested that football is particularly important in sublimating our aggressive instincts (channelling them constructively). For this reason, Richards describes football as a civilising influence. Another psychological approach that sees aggression as instinctive is that of ethology. From the ethological perspective, Lorenz proposed that humans have evolved a 'fighting instinct'. Evolution takes place through natural selection; therefore, aggression must, historically at least, have been

a survival trait, that is, a characteristic that increases the likelihood of survival. Like Freud, Lorenz saw human aggression as inevitable but manageable. Lorenz saw sport as serving the social function of channelling human destructive instincts constructively.

Discussion

The issue of whether aggression is instinctive or whether we have to learn it remains an ongoing controversy in psychology. There is a lack of direct evidence for or against an aggressive instinct, and we have to look to indirect support. If aggression were universal, that would be strong evidence of an instinctive basis. Lore & Schultz have pointed out that all vertebrates display aggression; thus, it must be a survival trait, as suggested by Lorenz. However, cross-cultural studies have found wide variation in human aggression. There appear to be human cultures, such as that of the Arapesh of New Guinea, where there is very little aggression by European and American standards. This suggests that there must be external influences as well as an instinctive component in aggression.

Social Learning Theory

In a radical alternative to instinct theory, Bandura proposed that all human aggression, like other social behaviour, is learnt by imitation and reinforcement. Bandura famously demonstrated that children copy adults behaving aggressively in his 'bobo doll experiment'. Children observed an adult beating a large inflatable doll. They tended to imitate the behaviour and also beat the bobo doll. When children were rewarded or witnessed the adult being rewarded for beating the doll, their level of aggression increased. Clearly, there are instances where children can witness aggression in sport, and there are a number of ways in which aggression can be reinforced. An act of aggression might result directly in scoring or preventing the opposition from doing so. Watchers might cheer; the coach and parents might praise the aggressive child. Children may also witness highly assertive acts and incorrectly imitate them in an aggressive form. To a child with little technical knowledge of football it is difficult to distinguish between an assertive shoulder-barge and an aggressive push. Baron & Byrne suggest the following four aspects of aggression that can be explained by learning: how to be aggressive, who is an appropriate target of aggression, what actions require an aggressive response and in what situations aggression is appropriate. Thus, by observation, we might learn how to commit a foul, whom we can 'legitimately' foul, what they have to do to warrant a foul and under what circumstances a foul is the best response. Because social learning theorists propose that there is nothing inevitable about aggression, but that it results from learning, it follows that we should be able to shape young athletes' aggression by the proper application of reinforcement and punishment. The alert teacher or coach can make sure that, whilst assertive behaviour is properly rewarded, aggression is not.

The Frustration–aggression Hypothesis

This approach, first suggested by Dollard et al, sees the most important factors in aggression as the characteristics of the situation. Dollard et al proposed that, although we have an innate aggressive drive, aggressive behaviour is elicited by frustration;

that is, when we are frustrated we respond with aggressive behaviour. In the original version of the frustration–aggression hypothesis, frustration was seen as always leading to aggression, and all aggression was seen to be due to frustration. Berkowitz, who produced a more sophisticated version of the frustration–aggression hypothesis, proposed that frustration leads to anger rather than directly to aggression. More anger is generated if the frustration is unexpected or seen as unfair. Anger may lead to aggression, but because we can apply our higher mental processes, such as thinking and reasoning, we do not necessarily respond to frustration with aggression. We may do so, however, if our anger is great enough or if, for some reason, we cannot think logically at that moment. Frustration is just one of several causes of aggression. Like instinct theory, and social learning theory, it is a partial but incomplete explanation of human aggression. Although the frustration– aggression hypothesis is not particularly influential in social psychology, it is useful to sport psychologists because sport can involve so much frustration that, even if frustration is a relatively minor cause of aggression in general, it is probably one of the major contributors to sporting aggression. Bakker et al found that aggression increases when a team is losing, particularly when the game is of great importance, presumably in response to the frustration of the situation.

INDIVIDUAL DIFFERENCES IN SPORTING AGGRESSION

A number of factors affect how aggressive individual athletes are. These include gender, motivational factors and the extent of their emotional identification with their team.

Gender

Research conducted in a variety of situations has found that, in general, women are less physically aggressive than men. A number of studies have shown that, in keeping with this principle, female athletes are less supportive of aggressive behaviour than male athletes. In one study, Tucker & Parks assessed the attitudes of 162 toplevel American university athletes to aggression by a standard questionnaire, the Sport Behaviour Inventory. Overall, women were more negative about the role of aggression in sport. This was especially true of those who participated in non-contact sports. This is particularly interesting because it suggests that men and women have different influences on their attitudes, men being more affected by gender role expectations and women by the norms of their sport.

Identification With Team

In team sports, research suggests that athletes who have a particularly strong identification with their team are more willing to behave aggressively toward opposition team members. Most research has looked at instrumental aggression, that is, that aimed at gaining competitive advantage rather than deliberately hurting an opponent. However, a recent study by Wann et al suggests that hostile aggression is also affected by team identification. A total of 175 university students were questioned about the extent to which they identified with their team and what aggressive acts they would consider committing. As expected, those who were highly identified with their team were more

willing to consider hostile aggression toward opponents. The effect was greater for males than females, and (fortunately!) it was greater for minor acts of hostile aggression. Thus, highly identified men were very likely to consider tripping an opponent, but few were willing to consider murder. Daniel Wann's research extends to the effects of team identification on the behaviour of spectators. Wann et al questioned 88 sports fans on their team identification, general willingness to commit murder and willingness to injure a member of an opposing team. There was no relationship between team identification and willingness to murder, suggesting that being strongly identified with a team does not simply make one a more aggressive person in general. However, highly identified fans were more willing anonymously to injure a member of an opposing team.

Motivational Style

It seems that our motives for participating in sport have an impact on how aggressive we become during play. Briefly, athletes tend to have either a task orientation or an ego orientation. Task-oriented athletes judge their success relative to their past efforts and deal well with adversity. Ego-oriented athletes judge their performance according to their success against others and are much more likely to cheat in the face of adversity. An ego orientation is associated with aggression, presumably what matters because to an ego-oriented athlete is the result, not how it is achieved. A study of 240 handball players by Rascle et al supported the association between ego orientation and the tendency to indulge in instrumental aggression. Similar results were found in a study of elite ice hockey players.

SITUATIONAL FACTORS AFFECTING AGGRESSION

Although individuals do vary in their tendency toward aggression, we are all influenced in aggression – and indeed in all social behaviour – by the situation in which we find ourselves. A number of factors in our physical environment, including temperature, noise and crowding, all affect aggression. The circumstances in which a match takes place can also be important; thus, frequency of play and league position can have an effect.

The Physical Environment

There is little doubt that the probability of aggressive behaviour changes with ambient temperature. Anderson et al suggest that there is a simple linear relationship between temperature and aggression; that is, the higher the temperature, the higher the levels of aggression. Evidence for this comes from a study by Reifman et al, in which archived data from the 1986–8 US baseball seasons were analysed. A positive correlation emerged between temperature and the number of batters hit by pitchers in each game. In nonsporting contexts, evidence suggests that crowding and noise levels are also associated with increased aggression. However, there is a lack of research within sporting contexts.

Game Circumstances

The circumstances in which a match is played appear to affect the likelihood of aggression. For example, league leaders tend to indulge in aggression less frequently

than those trailing them. Englehardt analysed 4000 game summaries from the US ice hockey league and found that the higher the team was in the league, the lower the number of penalties. Widmeyer & McGuire analysed game statistics for 840 US ice hockey matches. Intradivisional matches, in which teams play each other up to eight times, were compared to interdivisional matches, in which teams meet only three or four times. Significantly more aggressive incidents occurred in intradivisional matches, suggesting that the more frequently teams meet, the more aggressive are the matches.

THE $64,000 QUESTION – DOES SPORT INCREASE OR REDUCE AGGRESSION?

Instinct theories imply that, in general, sport serves to reduce aggression in society, because it gives us a legitimate way to express our aggressive instincts. The frustration–aggression hypothesis also supports the idea that sport is beneficial because it gives us a release for our frustrations. Most of us would agree that, if we are frustrated and in a bad mood, we tend to feel better if we exercise. Sport may also reduce aggression by helping us acquire self-discipline. From a social learning perspective, however, we run the risk of learning new aggressive behaviours if we indulge in 'aggressive sports'. The martial arts give us one way of directly testing these contrasting views. If the social learning approach is correct, we would expect the learning of aggressive repertoires of behaviour in martial arts training to increase levels of aggression. Research has shown quite the reverse, however; martial arts training appears to reduce aggression. Daniels & Thornton assessed karateka for aggression, using a test called the Buss-Durkee Hostility Inventory. They found that there was a negative relationship between assaultive hostility (reported tendency to respond with physical violence) and length of training ($r = \updownarrow 0.64$). The problem with using martial arts training to investigate the relationship between sport and aggression is that martial arts instructors tend to differ substantially in their philosophy and training methods from other coaches, and so we cannot extrapolate from martial arts to other sports. Evidence that this makes a difference comes from a recent study by Lakes & Hoyt, in which 193 American 5–10-year-olds were allocated either standard PE lessons or tae kwon do sessions at school. After 3 months, the tae kwon do group showed significantly more improvement in their prosocial behaviour as well as better concentration and persistence. An alternative approach to examining the relationship between sport and aggression is to compare aggression in athletes and non-athletes. A recent study by Lemieux et al compared aggression in 86 university athletes and 86 matched non-athletes. Although physical size was associated with aggression, there was no difference between participants in sport and non-participants.

Effects on Spectators

Whilst some research cautiously supports the view that at least some sports help reduce aggression in participants, the reverse seems to be true for spectators. Given the problem of football violence, this should perhaps not surprise us. Arms et al measured the hostility of spectators after they watched aggressive sports (wrestling and ice hockey) and a non-aggressive sport (swimming). They found increased hostility in those who had watched the aggressive sports, but not in those watching the non-

aggressive sports. Phillips tracked the rates of murder in the USA and found that, in the weeks following heavyweight title fights, rates of murder increased. The characteristics of murder victims appeared to be related to the losing fighter; when a white boxer lost, more white men were murdered, and when a black boxer lost, more black men were murdered. All the main theories of aggression could explain these effects. Instinct theorists would say that watching the aggressive sport aroused the aggressive instincts of the spectators but did not allow them a means of expressing their aggression. Frustration–aggression theorists could point to the frustration of having to watch the game and not be able to help one's own team. Social learning theorists might identify the modelling of aggressive behaviours by the athletes as the main factor in the increased hostility of spectators. Interestingly, although there is no evidence to suggest that watching aggressive sport reduces aggression in spectators, it appears that this is in fact a common belief, and that such beliefs may influence spectating habits. Wann et al gave questionnaires to 109 students to assess their sporting preferences and beliefs about aggression. Those who believed that watching sport is cathartic, that is, it helps discharge pent-up aggression, were more likely than others to watch aggressive sport.

THE REDUCTION OF AGGRESSION

There are a number of strategies that can be used to help reduce aggression in athletes. These approaches can be variously applied to preventing young athletes from developing aggressive behaviour in the first place and curtailing aggressive behaviour in those prone to it.

Punishment

Punishment can be an effective tool in tackling athletic aggression. The effects of punishment are most easily understood in the context of social learning theory. The aggressive athlete can learn through punishment that the consequences of aggression are negative. This is clearly most effective if punishment is implemented early in life – before the young athlete has received positive reinforcement for aggressive behaviour. Punishment can also serve as a deterrent. In social learning terms, the witnesses to punishment learn vicariously that aggression does not pay. To be effective, punishment needs to be prompt, severe enough to outweigh the benefits of the aggression and consistent. An example of prompt, severe punishment is football's red card. If this is to be seen as inevitable, it is important that referees apply the sanction consistently.

Catharsis

Both instinct theories and the frustration–aggression hypothesis imply that 'getting it out of your system', or catharsis, will reduce the need for aggression. Sport itself is cathartic; therefore, we would expect that prolonged and hard training will reduce aggression. Baron & Byrne suggest that vigorous exercise can reduce aggression because it reduces both physical tension and feelings of anger. Although catharsis undoubtedly does reduce aggression, there are two serious limitations of its usefulness. Firstly, the effects are very short-term. If we start brooding again about what made us angry a few hours after exercise, we are likely to get angry all over again! Secondly,

exercise in general is less satisfying and therefore less cathartic than hitting the person you are angry with.

Role Modeling

If children can learn aggressive behaviour from watching aggressive adults, it follows that if we expose children exclusively to appropriate, non-aggressive role models, we can, to some extent at least, prevent them from developing an aggressive repertoire of behaviour. This approach underlines the importance of the teacher or coach as a role model. Unfortunately, it is almost inevitable that children will observe other athletes acting aggressively. Tenenbaum et al suggested that the media are irresponsible in over-covering and sensationalising violent incidents in sport. Certainly, unless we prevent children from spectating altogether – something that would probably kill their love of sport – it is impossible to prevent children from encountering aggressive role models.

Contracting

One way of tackling aggression in persistent offenders is by the use of psychological contracts. Athletes signing a contract are committing themselves to eliminate certain behaviours. The terms of each contract are negotiated between the individual athlete and coach or psychologist, but the contract will always specify what behaviours are to be eliminated under what circumstances. Leith suggests that a simple contract should include specification of the behaviour to be eliminated, punishment for breaching the contract, rewards for sticking to the contract, the names and signatures of both parties, and the date.

Anger-management Groups

We all experience anger, and anger per se is not a bad thing, but it can lead to hostile aggression. If athletes often become angry and that anger is consistently manifested in aggressive behaviour, they may benefit from anger-management groups. An anger-management group is a type of therapy group, in which anger is explored and mental strategies for better coping with anger are taught. Some groups – from the psychoanalytic tradition – emphasise exploration of the individual's anger, whilst more cognitive-behaviourally oriented groups emphasise the learning of strategies to control anger.

SOCIAL FACTORS IN SPORTING PERFORMANCE

GROUPS AND TEAMS

As social animals, we spend a considerable amount of our time in groups. A group has been defined by Moorhead and Griffin as 'two or more persons who interact with one another such that each person influences and is influenced by each other person'. A team is more than just a group. Moorhead & Griffin define a team as 'a small number of people with complementary skills who are committed to a common purpose, common performance goals, and an approach for which they hold themselves mutually accountable'. A team in the broader sense is not necessarily a group, because the

members of a team can be working for a common aim without ever coming into contact with one another. For example, the British Olympic Team is clearly devoted to a common purpose, but it is not necessarily a group, because its members could fulfil their team roles without swimmers, boxers and long-distance runners ever meeting and directly influencing one another. Usually, however, when we refer to a team in sport psychology we are also referring to a group of people who play together and have a powerful influence on each other. For this reason, the terms group and team are sometimes used interchangeably.

Group Formation

Merely placing a collection of individuals together does not in itself create a group or a team. Tuckman & Jensen suggested that when groups come together they go through five distinct stages. In the first, forming stage, the group members get to know each other, and basic rules for the conduct of group members are established. In the second, storming stage, members compete for status in the group, and group members take on different roles. In the third, norming stage, the group settles down, and group members develop attachments to each other and to the group. In the fourth, performing stage, the group members become oriented toward the task they have come together for, and begin to achieve their goals. In the final, adjourning stage, the task of the group has been accomplished, and it drifts apart. As Sutton points out, although this model of group formation is useful, not all groups operate in this manner. For example, in football, unless a new team is being started, it is unusual for a group to form in the way described by Tuckman & Jensen because new players join the team at different intervals. For an individual player joining an existing team, things are likely to be rather different.

Group Cohesion

The word cohesion literally means sticking together. Festinger et al defined group cohesion as the sum of the forces that influence members in whether to remain part of a group. A highly cohesive group is likely to be more united and committed to success than a group low in cohesion. It is often said that a team is more than just the sum of the individual players. This is because the cohesiveness of a team can be just as important as the talent of individual team members. If you are a follower of football or rugby, you might have noticed that, in certain seasons, teams composed of brilliant individual performers collectively underperform. This is probably due to the fact that the team members have somehow failed to 'gel' together. This is an example of lack of cohesion.

Elements of Group Cohesion

Widmeyer et al distinguished between two different aspects of team cohesion. Each member of a team has a view of the team as a unit (this is known as the members' group integration) and of every individual within it (this is called the individual attractions). The members may also have different perceptions of the team and its members as regards their sporting performance and their social interactions. In other words, you can think of your team-mates quite differently as individuals and as a team, and as people and co-competitors. We might, for example, see them as socially

unpleasant both individually and collectively but as effective co-competitors. Carron et al devised a psychometric test, the Group Environment Questionnaire (GEQ), which can be used to measure team cohesiveness. The GEQ considers group integration and individual attractions, and both the task achievement and the social life of a team.

Factors Affecting Team Cohesion

In a recent UK study, Holt & Sparkes studied a university football team over the course of one season. Data were gathered by means of observation and interviews. It was concluded that the following four factors affect team cohesion: a clear role for each member of the team, willingness to make personal sacrifices for the good of the team, quality of communication between team members and shared goals for the team as a whole. An additional factor may relate to coaching style. Turman looked at a range of coaching techniques and attempted to relate these to team cohesiveness. It emerged that use of embarrassment, ridicule and inequity, that is, talking down to athletes, has a negative impact on cohesiveness, while athlete-directed technical assistance, motivational speeches and team prayers all had positive effects. Thinking more broadly, Carron identified four types of factors that affect the cohesiveness of a team. Situational factors include the physical environment in which the team meets and the size of the group. Individual factors refer to the characteristics of the athletes that make up the teams. For example, the satisfaction of individuals in being in the team can have a powerful influence on cohesiveness. The third type of factor is leadership. Team coaches, captains and managers have a role in helping to make the team cohesive. Team factors include past shared successes, communication between members and having collective goals.

Cohesiveness and Performance

Numerous studies have shown that there is a relationship between team cohesiveness and success; that is, more successful teams tend to have greater cohesion. In one study, Gould et al interviewed athletes and coaches from the US Olympic teams in a range of sports, assessing a number of factors including team cohesion. It was found that teams with low cohesiveness were more likely to underperform. There is a logical problem of studies like this, however; they do not tell us whether the teams became more successful because they were already more cohesive, or whether, instead, they became highly cohesive because of their shared success. Actually, it is quite possible that both of these relationships hold true. Slater & Sewell measured team cohesion in 60 university hockey players, representing three male and three female teams, early in, midway in and at the end of the season. The researchers were able to see how early cohesion related to later success and how early success related to later cohesion. It was found that, whilst early success was related to later cohesion, the stronger relationship was between early cohesiveness and later success. Interestingly, not all studies have supported the relationship between cohesiveness and performance. In one experiment, Grieve et al randomly assigned 222 male university student basketball players to three-person basketball teams, and manipulated the interactions of each team in order to create either high or low levels of team cohesiveness. Each team was then assessed for cohesiveness, given a series of games and then assessed

again for cohesiveness. In this study, there was no relationship between early cohesiveness and later performance; however, successful early performance was associated with high levels of cohesiveness at the end of the games. This suggests that cohesiveness does not influence performance but that performance does influence cohesiveness.

Developing Team Cohesion

Making a group of individuals into an effective team is an important part of a coach's task, particularly in highly individualist cultures such as Britain and the USA, where we do not tend to be taught as children to put the greater good of our groups above our individual needs. Strategies to develop team cohesion are known as team building. Carron et al offer a four-point model for team building, which aims to increase team distinctiveness, for example, by training attire; to increase social cohesiveness, for example, by social events; to clarify team goals, for example, by having collaborative 'goal of the day' sessions; and to improve team communication, for example, by holding regular meetings. Team building has been tested in a number of experimental studies, but the results have been equivocal. Moran suggests that one reason for this is that team building can improve cohesiveness only if the team lacks it in the first place. Thus, studies on already cohesive teams encounter a ceiling effect and have little impact.

SOCIAL FACILITATION

We have already discussed how being in a strongly cohesive team appears to improve the performance of team members. There are several other ways in which the presence of other people can affect our behaviour and performance. Under some circumstances, the presence of other people, such as competitors, enhances our performance. However, under other circumstances, our effort and our ability to make decisions can be adversely affected by others, leading to poor performance. The term 'social facilitation' describes the ways in which our performance can be affected by the presence of others.

Co-action and Audience Effects

Co-action effects occur when other people are carrying out the same task alongside us, as in a race, or when training with friends or teammates. One of the earliest studies in sport psychology, by Triplett, found that children asked to wind fishing reels did so faster when in the presence of other children also winding fishing reels. Triplett also found that cyclists who trained with another cyclist practised at faster speeds than those training alone. Audience effects occur when we are being watched. A study of audience effects was carried out by Michaels et al. Researchers observed pool players in a college student union and selected aboveaverage and below-average players. First those selected were watched, and the percentage of successful shots was recorded. Four researchers then walked up to the tables of the selected players and watched the rest of their game. It was found that the audience had the opposite effect on the below-average and above-average players. The players identified as below average in ability played worse in the presence of an audience, whilst those identified as above average played better when watched. Not all recent studies have replicated the findings of the

Michaels et al study. Geisler & Leith tested the effect of an audience on penalty taking in 40 Canadian ex-university soccer players. There was no difference in the number of goals scored when alone or with an audience. The personality of the athlete may also affect the relationship between audience and performance. Graydon & Murphy assessed the personality of students with the EPI, and identified 10 extroverts and 10 introverts. These 20 were given the task of serving a table tennis ball into a grid. In one condition, they did this alone and in another condition they did it in front of an audience. The extroverts performed better in front of an audience, whereas the introverts did better alone.

The Home Advantage Effect

An important application of research into audience effects is in understanding the effects of playing in home and away matches. The home advantage effect (HAE) operates when performance is enhanced by the presence of a large supportive home audience. This is an extremely powerful effect. In football's World Cup, for example, no team other than Brazil has even won the competition when playing outside its own continent. Interestingly, it appears that audience effects increase as the size of the audience increases. Nevill & Cann examined the size of crowds in home-win games in the English and Scottish football leagues in 1985–96, finding that the HAE was greatest when crowds were large and least when crowds were small.

Explanations for Audience and Co-action Effects

Drive Theory

Zajonc proposed that the presence of others affects performance because it directly raises arousal levels. Drive theory proposes that heightened arousal produces a better performance when the task is simple and/or the performer is an expert. Heightened arousal produces a worse performance, however, when the task is complex or the performer is a novice. Therefore, it follows that the presence of others will lead to a better performance for expert athletes but a worse performance for novices. The Michaels et al study described above strongly supports drive theory. Expert pool players performed better and novices worse when the researchers provided an audience for their game. Aronson et al reviewed studies and concluded that there was overwhelming evidence for drive theory in that performance consistently improved in experts and declined in novices in numerous studies. However, a weakness of Zajonc's application of drive theory is that he failed to explain why the presence of others should lead to increased arousal and how individuals might differ in their reactions to the presence of others.

Evaluation-apprehension Theory

Cottrell offered an alternative to Zajonc's drive theory to explain why the presence of others might lead to increased arousal. In evaluation-apprehension theory, the presence of others causes an increase in our arousal because we feel that we are about to be evaluated. If we are competent in the task to be observed, we are likely to feel confident, and the effect of the observer on performance will be confidence. If we are

novices, however, the anxiety that results from the belief that we are about to be judged and found wanting increases our arousal levels and so spoils our performance. Cottrell discovered that the more expert the observer of athletes, the greater the decline in the performance of non-expert performers. This supports the idea that it is fear of being judged that leads to increased arousal and poor performance. You can imagine, for example, that if you found yourself watched by a panel of England team selectors, your arousal level would be higher than if observed by a group of friends! However, whilst evaluation apprehension is almost certainly one cause of arousal in the presence of others, it may not be the only factor.

NEGATIVE EFFECTS OF TEAM MEMBERSHIP

Social Loafing

In the 1880s, the French engineer Ringelmann discovered that when a group of men pulled together on a rope, each pulled considerably less hard than when pulling alone. When eight men were pulling, each man averaged half the effort he put in when pulling alone. This effect, known as social loafing, has since been demonstrated in a variety of settings, including team sports. In view of this effect, an obvious question to ask is, 'How do we know whether, in a given situation, social facilitation or social loafing will occur?' Aronson et al identified two factors that affect which response takes place: the complexity of the task and the possibility of observers successfully seeing how much effort you make. If your individual efforts can be evaluated easily, you will tend to be highly aroused, and therefore you are likely to do better on simple tasks and worse on complex tasks. If people cannot tell to look at you how hard you are trying, your arousal levels will tend to be lower, and therefore you should do worse at simple tasks and better at complex tasks. This identifiability effect has been demonstrated in a study by Swain, in which 96 15-year-old boys ran a 30-metre sprint under three conditions. In the first condition, they ran individually; in the second, they ran in teams, but each boy's time was recorded. In the third condition, they ran in teams, but only the team time was recorded, and therefore each boy's own performance was not identifiable. Overall, the boys ran slower in the third condition; however, this masked considerable individual differences in the boys. It emerged that goal orientation was the major factor – task-oriented boys ran equally fast in the three conditions, but ego-oriented boys slowed down when they believed their individual times were not being measured. Other factors apart from goal orientation may affect on social loafing behaviour. Heuze & Brunel conducted an experiment in which students threw darts under four conditions. In one condition, they had no opposition. In the other three conditions, fictitious opponents were created who were either inferior, equal or superior in standard. Performance was best against an opponent of equal standard and worst against a superior opponent. This suggests that we tend to indulge in social loafing in situations where we are not expected to succeed, but less so when expectations of us are higher.

Groupthink

The presence of others affects us in many ways, not just in our arousal levels and

efforts. One other way in which we differ when alone or in a group is in the way we make decisions. Janis identified the phenomenon of groupthink, which occurs when group cohesion is so great that it prevents group members, from voicing opinions that go against the majority. Groupthink can cause serious problems for teams, because the entire team can become so focused on a particular goal that important considerations of practicality and safety are abandoned. Janis described the symptoms of groupthink. The group feels that it cannot make a wrong decision, and that fate will support it. Group members decide not to 'rock the boat' by arguing with the majority. Those who do argue are made to conform, or ignored. Searle suggested that groupthink might have contributed to the loss of six climbers on K2 in 1995. Three combined teams of climbers continued to press on toward the summit, despite clearly dangerous and worsening conditions, resulting in the deaths of six climbers. One of the survivors was quoted as saying, 'The most dangerous thing about groups is that everyone hands over responsibility for themselves to someone else.' It appears that, because of the desire to complete the climb, the group went into groupthink and ignored the danger.

LEADERSHIP

Leadership has been defined by Moorhead and Griffin as 'the use of noncoercive influence to direct and coordinate the activities of group members to meet a goal'. Leadership may be informal or formal. When we appoint a team coach and a captain, we know that they have formal leadership roles. However, other team members might also take on informal roles in which they influence and inspire others. For many years, psychologists have been concerned with who becomes leaders and how they carry out their role.

Leadership Style

There is more than one way to lead people. An early but still influential distinction is that between authoritarian, laissez-faire and democratic styles of leadership. The authoritarian leader makes decisions alone and expects unquestioning obedience from the group. This approach has advantages and disadvantages in sport. The main advantage is that team members can still be directed toward purposeful action when they are exhausted, stressed and disillusioned. However, authoritarian leadership has its costs. Other group members are often denied what would be useful input to decision making, and, in the absence of the leader, the members may have difficulty in motivating themselves. By contrast, the laissez-faire leader leaves group members to get on with the task at hand without interference. Such leaders may assist individuals, but do not attempt to organise or motivate the group as a whole. Whilst being a member of a group with laissez-faire leadership might allow you to explore your talents without being unnecessarily restricted, leaders who can operate only in a laissez-faire manner often fail to motivate groups to achieve their potential or cope with crises. Lewin's third category, the democratic leader, can be seen as a halfway house between authoritarian and laissez-faire styles. The democratic leader takes decisions and enforces them, but decisions always take account of the views of the rest of the group. Democratic leadership can cause difficulties when very rapid decision making is required in an emergency, but in most cases this is the most successful style of leadership.

Lewin has offered a useful approach to understanding how leaders may operate. This does not mean, however, that a leader can operate in only one way. Lewin believed that each style of leadership works in different situations, and that the best leaders can use all three styles as appropriate.

Theories of Leadership

Trait Theories

Early psychological approaches to leadership emphasised the importance of being a certain type of person, that is, having certain personality traits, in order to be a good leader. This great-person approach depends on three main assumptions. Firstly, all successful leaders have certain personality traits in common. Secondly, the rest of us 'mere mortals' do not share the characteristics of great leaders. Thirdly, the traits that make someone a leader in one situation will also enable that person to lead successfully in quite different situations. Researchers have attempted for many years to find out what traits make a good leader. Although there appears to be no set of personality traits that are necessary to be a leader, there are certain characteristics that are found in a large number of successful leaders, and which appear to be helpful in leading others. Kirkpatrick & Locke identified the following eight characteristics associated with successful leadership: drive (ambition and persistence), honesty, motivation to lead, self-confidence, intelligence, expertise in the purpose of the group, creativity (imagination and originality) and flexibility. Kirkpatrick & Locke concluded that 'leaders do not have to be great men or women by being intellectual geniuses or omniscient prophets, but they do need to have the "right stuff" and this stuff is not equally present in all people'. The trait approach has failed to identify a combination of personality traits that will invariably lead to a person's becoming a successful leader. However, it has been quite successful in the more modest aim of identifying characteristics that are likely to be helpful to leaders. Looking at Kirkpatrick & Locke's list of characteristics associated with successful leadership, you can see how it might be useful to bear these in mind when choosing a leader, such as a team captain. If someone you are considering as captain lacks a number of these attributes, it is perhaps unlikely that they will turn out to be a good choice. The main problem with the trait approach is that it neglects the importance of the situation in which the leader is operating. Different leaders do best in different circumstances. In the next theory we shall look at, Fiedler has aimed to explain how leaders might be matched to their particular task.

Fiedler's Contingency Theory

According to contingency theory, the success of leadership depends on the characteristics of leaders and the situation in which they are leading. Fiedler identified two categories of leader, those who are task-oriented, that is, their main preoccupation is the task of the group, and those who are person-oriented, that is, their main preoccupation is the members of the group. Fiedler distinguished taskoriented and person-oriented leaders by asking them, by means of a questionnaire, about their least effective team member or, to use Fiedler's terms, least-preferred co-worker (LPC). Those who hold the LPC in low esteem are assumed to be task-oriented, because they

are thinking first of the likelihood of accomplishing their task while handicapped by the ineffective team member. Those who hold the LPC in high esteem are assumed to be person-oriented, because they value the team member despite their lack of contribution to achieving the task at hand. Fiedler proposed that task-oriented and person-oriented leaders are effective under different circumstances. Under very favourable or very unfavourable circumstances, task-oriented leaders get better results. Favourable conditions occur when there is a clearly defined task and good leader–group relations, and the leader has the power to enforce his or her decisions. Under moderately favourable conditions, person-oriented leaders are more effective. Fiedler has contributed to our understanding of leadership by showing how the personality of leaders and the situation in which they are leading are both important to how successful leadership is. Cox has pointed out that there are a number of cases in sport that demonstrate how leaders with particular personalities have been very successful under some circumstances and unsuccessful in others. You have only to look at the changing fortunes of British football managers to see the validity of this principle! However, more questionable are the specifics of Fiedler's theory. Gill reviewed research into the effects of situation and leader personality in sport teams and concluded that results were inconclusive.

The Coach and Athlete: a Special Case of Leadership

Athletes spend much time with their coaches, and rely on them for information, direction, feedback and support. All these factors require trust – advice and direction will be better followed and feedback better received in the context of a good relationship. But what exactly do we mean by a good relationship? Based on an understanding of research into relationships in general, Jowett & Cockerill suggest that the coach–athlete relationship can be understood in terms of three key variables: closeness, co-orientation and complementarity.

- Closeness is the emotional aspects of the relationship, referring to the attachment between coach and athlete.
- Co-orientation is the cognitive aspect of the relationship, referring the commonality of knowledge, views and concerns between coach and athlete.
- Complementarity is the behavioural aspect of the relationship, referring to the interpersonal behaviour between coach and athlete, in particular their effective cooperation.

In a series of case studies and a study of 12 Olympic athletes, Sophia Jowett and colleagues have studied the closeness, co-orientation and complementarity of athlete–coach pairs. In all cases, athletes placed great emphasis on closeness, reporting that their own motivation and confidence were tied up with their experience of being cared for, liked, trusted and respected by their coaches. A particular issue thrown up by Jowett's studies is that of dual-role relationships, in which the coach and athlete have an additional relationship, such as parent and child or husband and wife. Ryan & Deci suggest that athletes need to feel competent, related to others and autonomous (independent). The problem with dual-role relationships is that autonomy is difficult to attain. One way of resolving this type of difficulty, which can of course occur even in the absence of dual roles, is improved communication. Once both parties understand

the nature of their differences, it is more likely that a mutually satisfactory path can be taken. There is a range of techniques for improving communication.

Coaching as Decision Making

Chelladurai points out that all coaching activities involve decision making, and he suggests that we can understand the leadership displayed by coaches in terms of their style of decision making. The main focus of the model is on understanding when athletes will actively participate in team decision making.

Within this model, decision making is affected by the following seven factors:

- *Time pressure:* when decisions have to be made very quickly, the coach often has to make them without athlete participation. Less urgent decisions are more likely to involve athletes.
- *Decision importance:* when problems can be resolved by several options athlete participation is more likely. When there is a single correct answer (such as which goalkeeper to use), the coach is more likely to make the decision singly.
- *Information location:* whoever possesses the necessary information is likely to take a role in decision making. When the coach is the only person in possession of all the facts, they are likely to make a decision single-handed; otherwise athletes with specialist knowledge are likely to be consulted.
- *Problem complexity:* the more complex the problem, the more likely it is that only the coach will possess all the information necessary to make the decision; therefore, he is more likely to do so without participation by athletes.
- *Group acceptance:* a coach is likely to make a unilateral decision either when it will be fully accepted by the team or when its acceptance is not of primary importance. For example, a popular footballer playing his last professional game may tire early. In this case, the coach/manager might wish to substitute a younger, fitter player. However, the decision will also take account of the fact that it might be resented by team-mates and might lower team morale and concentration for the remainder of the match.
- *Coach's power:* coaches may exert power over athletes by means of reward, punishment, the authority of their position, the admiration of athletes, and their superior knowledge and experience. The greater their power, the more likely they are to make unilateral decisions.
- *Group integration:* the more integrated a team, the more likely its members are to participate in decision making. The term integration refers to the extent to which the team members have good interpersonal relationships and equal status.

Influenced by these seven factors, the coach adopts one of three decision-making styles. In the autocratic style, the coach makes the final decision unilaterally. Alternatively, the participative style involves the full participation of athletes, the coach simply functioning as a group member. Finally, the delegative style involves delegating decision making to one or more athletes.

AROUSAL, ANXIETY AND SPORTING PERFORMANCE

Common sense tells us that there are important links between sport and arousal, anxiety and stress. Sport normally involves competition, which in turn tends to induce anxiety, characterised by an increase in arousal. You may have had the experience of performing better than you expected when anxious, or, alternatively, you might have had the less fortunate experience of making mistakes under pressure. Sport psychologists have been concerned with understanding what factors affect arousal, anxiety and stress; how these affect athletic performance; and how we can learn to regulate our arousal and anxiety in order to improve our performance. As Jones has pointed out, at the top sporting levels (at least in many sports), there is very little difference in the skill levels of the participants. It is thus often the ability to handle anxiety and stress that separates the winner and loser. Before going any further, it is important to understand exactly what psychologists mean by the terms 'arousal', 'anxiety' and 'stress'.

DEFINITIONS OF AROUSAL, ANXIETY AND STRESS

Arousal may be defined as 'a general physiological and psychological activation varying on a continuum from deep sleep to intense excitement'. When we are bored, relaxed or asleep, we are in a state of low arousal. When excited, angry or anxious, we are in a state of high arousal. You can see from this that being in a state of high or low arousal is not in itself necessarily a pleasant or unpleasant experience. On the other hand, anxiety is by definition an unpleasant sensation. Weinberg & Gould have offered the following definition of anxiety: 'a negative emotional state with feelings of nervousness, worry and apprehension associated with activation or arousal of the body'. We can thus think of anxiety as an unpleasant state of high arousal. The term stress has a broader meaning than anxiety. Stress is the process whereby an individual perceives a threat and responds with a series of psychological and physiological changes, including increased arousal and the experience of anxiety. We tend to experience stress when we meet demands that are difficult to meet, but which carry serious consequences if we fail to meet them. If stress is longterm, or chronic, it can cause serious harm to both physical and mental health. Whilst it is quite normal – and as we shall see quite beneficial – to experience some anxiety before competing, athletes should not feel constantly anxious and see themselves as facing insurmountable odds.

Cognitive and Somatic Anxiety

Martens et al distinguished between two aspects of anxiety. When we are anxious, we experience the physiological changes associated with high arousal, including increased heart rate and blood pressure, 'butterflies' in the stomach, faster breathing and flushed face. These effects are similar (though not identical) to the physiological effects of excitement and anger. We call the experience of physiological changes associated with anxiety somatic anxiety (from the Greek soma meaning body). We can measure somatic anxiety directly by physiological means, or indirectly by self-rating inventories. Direct physiological measures include urinalysis, galvanic skin response (GSR) and blood pressure testing. Elevated levels of certain hormones released when we are anxious (such as adrenalin) can be detected in urine. We also tend to sweat more when anxious. This can be detected by a GSR meter, which measures the electrical

conductivity of the skin – the more we sweat, the better conductor our skin becomes. Our blood pressure also increases when we are anxious, and this can be measured by a sphygmomanometer. There are two major problems with these physiological measures of anxiety. Firstly, as we vary quite a lot in our normal physiological levels, all individuals studied would have to have physiological measures taken over time to establish their levels with and without anxiety. Secondly, physiological measures require laboratory equipment and are difficult to administer in the field. Selfrating inventories can be used to measure somatic anxiety indirectly. We shall examine two such questionnaires, the SCAT and the CSAI–2. At the same time as we experience somatic anxiety, we may also experience cognitive anxiety. Cognitive anxiety refers to the anxious thoughts that accompany somatic anxiety. Anxious thinking involves worries, self-doubts and images of losing and humiliation. A number of studies have examined how cognitive anxiety and somatic anxiety change before a sporting event. Swain & Jones followed 49 field and track athletes, measuring both the frequency and intensity of their cognitive and somatic anxiety on four occasions (2 days, 1 day, 2 hours and 30 minutes) prior to an important competition. They found that both cognitive and somatic anxiety increased before the event, the most dramatic increase being in the frequency of anxious thinking immediately before competition. Once competition begins, it is commonly believed that somatic anxiety declines sharply, whilst cognitive anxiety fluctuates, depending on how the event is going. Therefore, many researchers have proposed that errors during performance are due to cognitive anxiety, and not somatic anxiety. Cox proposed that cognitive anxiety is negatively related to performance – as cognitive anxiety increases, performance declines. However, in the Swain & Jones study, several athletes reported that they needed a degree of cognitive anxiety in order to perform well. Since it is very difficult to measure cognitive anxiety during sport, we can estimate the frequency and intensity of anxious thinking only whilst athletes are performing. Of course, it is important to consider the demands of different sports. Hanton et al examined self-reported cognitive and somatic anxiety in 50 rugby league players and 50 target rifle shooters. There were no differences in the extent of anxiety between the two groups of athletes or between their perceptions of the effect of cognitive anxiety on performance. However, rugby players were more likely to report that somatic anxiety had a positive impact on their performance, and shooters were more likely to say it had a negative impact. Studies like these are important because they show that it is important to make a distinction between somatic and cognitive anxiety. The relationships between cognitive and somatic anxiety and performance are examined in some detail.

State and Trait Anxiety

Another important distinction was made by Spielberger between state and trait anxiety. Trait anxiety refers to anxiety as an aspect of personality. A person high in trait anxiety will be frequently anxious, almost irrespective of the situation. Eysenck believed that some people are generally more anxious and moody than others because they are genetically programmed to react more to potential threats in their environment. A serious problem with the SCAT is that, although it was intended to measure the trait of anxiety in sporting situations, because items refer to how the individual feels

before competing, it is likely that it actually measures state anxiety rather than trait anxiety. However, some contemporary research still uses the SCAT. For example, Cunningham used the SCAT to look at the relationship between anxiety and golfing performance in 80 students. Moderate SCAT scores were associated with good performance and high SCAT scores with poor performance. During the 1990s, the CSAI–2 became the most widely accepted research tool for measuring competitive anxiety. It includes three subscales measuring cognitive anxiety (e.g. items 1 and 3), somatic anxiety (e.g. items 2 and 5) and self-confidence (e.g. item 4). However, the CSAI–2 has recently been criticised, both for its phrasing and for its usefulness. Some items (such as item 1 above) use the word 'concerned'. It is likely that all athletes are concerned about imminent competitions, so the answers probably do not tell us much about the athlete's anxiety. Collins has launched a particularly vigorous attack on research using the CSAI–2, saying that it is not a good predictor of performance and that it tells us little about the processes involved in the relationship between anxiety and performance. A meta-analysis of 29 studies linking CSAI–2 scores to performance found only weak correlations between items measuring cognitive anxiety, somatic anxiety and self-confidence, suggesting that it is a conceptual error to combine them in a measure of state anxiety.

FACTORS INDUCING ANXIETY AND STRESS

How anxious we feel at any time is a product of both our individual psychological make-up and the characteristics of the situation we find ourselves in. Therefore, when looking at why someone is anxious, we need to take into account both situational and individual factors.

Situational Factors

Event Importance

The more important a sporting event is, the more stressful we are likely to find it. It is probably true to say, for example, that most footballers would find themselves more anxious competing in the World Cup than in a 'friendly'. However, we must remember that it is the importance of the event to the individual that counts. This does not necessarily depend on the status of the competition. For example, athletes who know they are being watched by talent scouts, or perhaps by their family for the first time, may feel particularly anxious. Marchant et al carried out an experiment in which event importance was artificially set up. Pairs of golfers competed for either three new balls (low importance) or a new pair of golfing shoes (high importance). As expected, those competing for the new shoes experienced more anxiety than those competing for golf balls.

Expectations

It seems likely that both high and low expectations can be linked to anxiety. In the 2004 European Championships, it was said by many that England had to cope with very high expectations that they would win. It seems likely that in the end this contributed to their downfall. By contrast the winners, Greece, as first-time qualifiers,

had far less pressure on them to succeed. Individuals as well as teams can be adversely affected by the pressure of high expectations. Too much pressure from teachers, coaches and family can add tremendously to competitive anxiety. Of course, the opposite can also hold true. Hall & Kerr studied 111 fencers, assessing anxiety and ability beliefs. There was a strong relationship between ability beliefs and anxiety, those with low expectations of their performance experiencing more anxiety.

Individual Factors

Trait Anxiety

Some people are prone to suffer more anxiety than others, whatever the situation. This can be explained by genetics, but also by experience. Social learning theorists might explain trait anxiety as having been learned from adults in childhood. The psychodynamic view emphasises the importance of early family relationships, and the fact that those who experience early trauma or family disruption may afterward suffer chronic anxiety. Individuals high in trait anxiety are likely to see competition as particularly stressful. In the Marchant et al study of anxiety in golfers, trait anxiety, as well as event importance, was a significant predictor of state anxiety.

Performance Concerns

One way in which we vary as athletes is the manner in which we are concerned about our performance. Of course, it is essential for our motivation that we show some concern in this direction; however, too much in the way of perfectionism or concern over our image as opposed to our achievement is associated with high anxiety. Hall et al found that high levels of perfectionism were associated with cognitive anxiety in secondary school runners. Wilson & Eklund examined the importance of self-presentational concern in 199 American university-level athletes, who were assessed for somatic and cognitive anxiety and their concerns over their image. Concerns over appearing untalented, non-composed, fatigued and unattractive were all related to cognitive, though not somatic anxiety.

Locus of Control

Locus of control describes the extent to which we believe that we are in control of our lives. The concept was developed by Rotter. Research in a number of contexts has found that individuals low in locus of control are generally more vulnerable to anxiety and stress. There is a range of psychometric tests available to assess locus of control. Ntoumanis & Jones investigated the relationship between locus of control and competitive anxiety in 83 university- and county-level athletes (45 men, 38 women), using the CSAI–2 and a standard measure of locus of control. Interestingly, locus of control was not associated with somatic or cognitive anxiety levels; however, there was a relationship with how the athletes saw anxiety. Those with an internal locus saw anxiety as facilitative, that is, likely to improve their performance, whereas those with an external locus of control tended to see it as debilitative, that is, bad for their performance.

THE RELATIONSHIP BETWEEN AROUSAL AND PERFORMANCE

Drive Theory

Drive theory was proposed by Hull. The theory itself is complex, but its application to sporting performance is relatively simple. According to drive theory, three factors influence performance: complexity of task, arousal and learned habits. The greater the arousal, the more likely we are to adopt the dominant response to a situation, that is, our habit. Provided the task is a simple one and our dominant response is the correct one, the higher is our arousal, the better will be our performance; that is, performance = arousal · habit. This is shown in Figure 7.1.

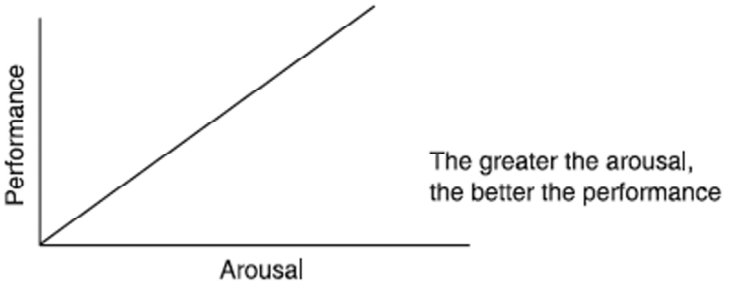


Fig. 7.1 Drive theory of the relationship between arousal and peformanc for expert performers.

If, however, the task is a complex one or the dominant response is not correct, arousal will inhibit performance. Because arousal level is greater in competition than in practice, and increases according to the importance of the competition, drive theory predicts that the best performances take place in high-importance competition. Drive theory also predicts, however, that, because expert performers are likely to have correct habits and novices bad habits, novices are more likely to make mistakes under pressure. An important application of this principle is that if novices are to acquire better skills, they need to practise under conditions of low arousal, that is, with minimal spectators and minimal competition. Drive theory has proved extremely useful in explaining why experts do better in competition and novices are more likely to crack under pressure. It has also given us an insight into how to optimise athletes' arousal during training. However, drive theory fails to explain instances where even expert athletes become too aroused and make errors. It also fails to take account of the type of arousal experienced or psychological factors that may accompany arousal, such as cognitive anxiety.

Inverted-U Hypothesis

By the 1970s, psychologists were dissatisfied with drive theory and had turned to the inverted-U approach to explain the relationship between arousal and performance. The inverted-U hypothesis was originated by Yerkes & Dodson. The idea is that for every task there is an optimum level of arousal. Performance peaks at this level and drops off above and below it. This is shown in Figure 7.2. The optimum level of arousal for a task depends on the complexity of the skill required to carry out that task. For a complex task involving fine motor skills, such as potting a ball in snooker, low levels of

arousal are preferable.

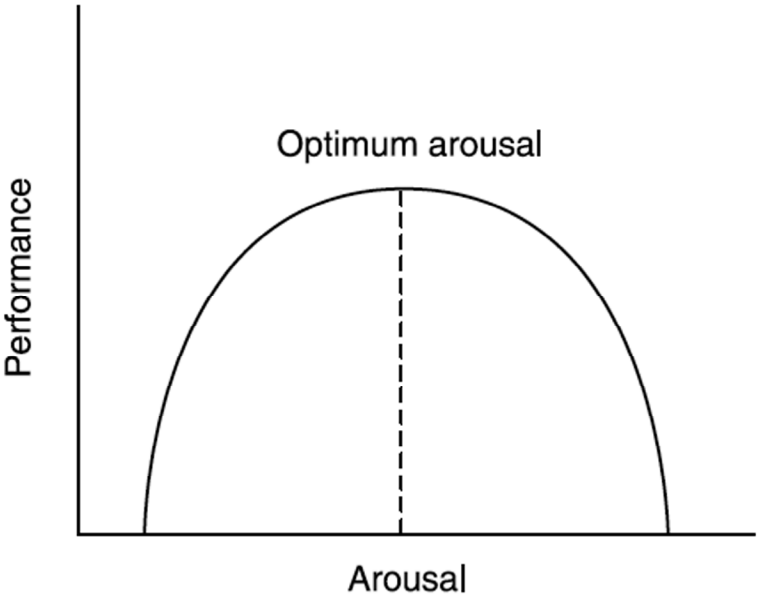


Fig. 7.2 The inverted-u hyposynthesis of arousal and performance.

For gross tasks such as weightlifting, the optimum arousal level is much higher. Support for the inverted-U hypothesis comes from athletes' reports of what factors they believe affect their performance. Thelwell & Maynard questioned 198 county-level English cricketers about what they considered to be the most important variables affecting their performance. Optimum level of arousal emerged in the top four factors affecting both batsmen and bowlers (the others being self-confidence, a pre-match routine and following a performance plan). Like drive theory, the inverted-U hypothesis has important applications in sport psychology. By looking at how fine the motor skills required for a particular sport are, we can then seek to optimise the arousal levels of competitors in that sport. Thus, we may recommend relaxation procedures to lower the arousal levels of darts and snooker players whilst recommending 'psyching up' exercises for weightlifters and rugby players. Unlike drive theory, the inverted-U hypothesis can easily explain why expert performers sometimes make errors under pressure. However, like drive theory, the inverted-U hypothesis fails to take account of the nature of the arousal or the effects of psychological factors, such as cognitive anxiety, on performance.

THE RELATIONSHIP BETWEEN ANXIETY AND PERFORMANCE

In recent years, the emphasis in sport psychology has shifted away from study of simple arousal in favour of looking at the more complex phenomena of anxiety. There are three particularly influential theories seeking to explain the relationship between anxiety and sporting performance: the catastrophe model, zones of optimal functioning and reversal theory.

The Catastrophe Model

Fazey & Hardy rejected the assumption of the inverted-U hypothesis that a small change in arousal will bring about a small change in performance. Instead, they pointed out that when athletes are experiencing high cognitive anxiety (that is, they are worried), a small increase in arousal beyond the optimum level can cause a massive fall in performance. Figure 7.3 shows the relationship between arousal and performance under conditions of low and high cognitive anxiety.

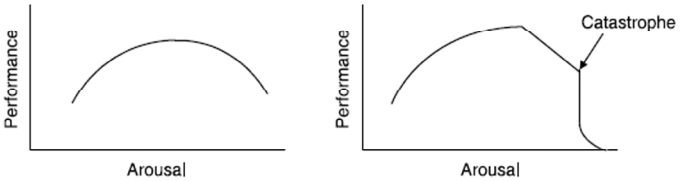


Fig. 7.3 Frazy & hardy catasrtrophe model of the relarionship between anxiety and performance.

Under conditions of low cognitive anxiety, that is, when the athlete is not particularly worried, the inverted-U hypothesis holds true. However, when cognitive anxiety is high, there comes a point just above the optimum level of arousal where performance drops off sharply. This represents a performance catastrophe. The catastrophe model has proved difficult to test directly. However, a study by Hardy et al does support the idea that athletes' best and worst performances occur under conditions of high cognitive anxiety, and that under high cognitive anxiety performance drops off quickly after the optimum arousal level. Eight experienced crowngreen bowlers were asked to bowl three balls at a jack on two consecutive days. On one day, before bowling, they were given neutral instructions designed to create low cognitive anxiety, and on the other day they were given 'threatening' instructions designed to raise their cognitive anxiety. The CSAI–2 was administered to confirm that cognitive anxiety was indeed higher after the 'threatening' instructions. To increase physiological arousal, the participants were given shuttle runs to perform and their heart rates were monitored. The results are shown in Figure 7.4

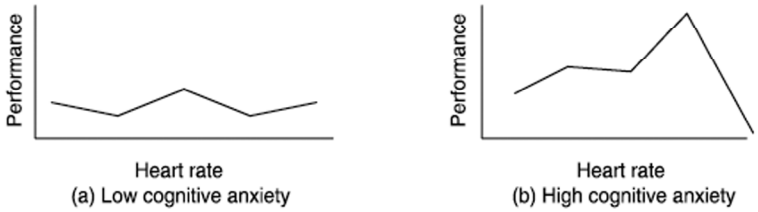


Fig. 7.4 The relationship between arousal and bowls performance under low and high cognitive anxiety. From hardy et al (1994).

It is clear from Figure 7.2 that under conditions of low cognitive anxiety the results showed a weak inverted U, whereas under high cognitive anxiety performance peaked considerably higher but then dropped off quickly. This supports the catastrophe model. The catastrophe model is more complex than the inverted-U hypothesis and offers a more sophisticated understanding of the relationship between arousal and performance. The major practical application of the model is in showing that cognitive anxiety is not

necessarily an enemy of performance, but under certain circumstances is beneficial. This fits in with the results of interviews by Jones et al, who found that many athletes reported that they performed best when worried. There has, however, been criticism of the model. Gill has suggested that it is essentially too complex to be entirely testable.

Zones of Optimal Functioning

Hanin criticised other theories of the relationship between anxiety and performance on the basis that they underemphasised individual differences in our responses to anxiety. When Hanin measured the pre-competitive anxiety scores of 46 elite female rowers, he found a very wide variety of scores (mean score 44, range 26– 67). Given the comparable success of these athletes, this variety of anxiety levels suggested that there was a variety of different responses to anxiety. Instead of proposing a general relationship between anxiety and performance, Hanin suggested that each athlete has their own preferred level of anxiety and that their performance would suffer if their anxiety went below or above their preferred level. The athlete's preferred anxiety level is called the individual zone of optimal functioning. Figure 7.5 illustrates the differences athletes have in their preferred level of anxiety.

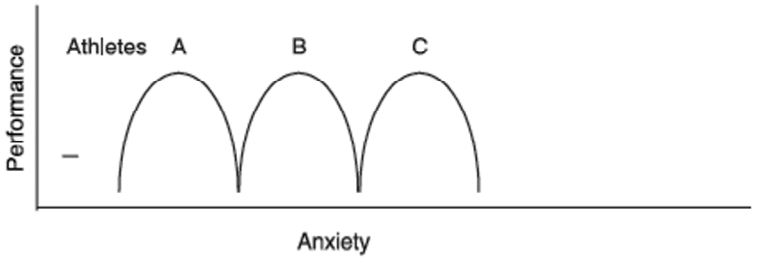


Fig. 7.5 Zones of optimal functioning in three athletes

In Figure 7.5, it is clear that athlete A has a low preferred level of anxiety. We might therefore refer to them as having a low IZOF. Athlete B has a medium IZOF and athlete C a high IZOF. In general, athletes competing in team sports have a lower IZOF than competitors in individual events. Athlete A is therefore typical of a team player and athlete C more typical of an individual athlete. The IZOF approach has clear applications for athletes. By knowing your own ideal level of anxiety for competition, you can monitor your current level and decide whether you need to relax or get more psyched up. Some athletes learn to monitor their heartbeat in order to tell whether they are below, in or above their zone. It is also useful for coaches and teachers to know individuals' IZOF. You might, for example, choose not to use psyching up procedures prior to a competition if you are working with athletes who have a low IZOF and therefore prefer a lower level of anxiety. There is some support for the idea that athletes do best when at the level of anxiety they prefer. Inlay et al investigated anxiety levels in field and track athletes across seven competitions and found that, of athletes assessed as being in their IZOF, 63% performed well and 31% performed badly. This provides moderate support for the IZOF theory. However, there are problems with this and similar studies. Pre-competition anxiety was assessed after the event rather than before. This means that there is some doubt as to the accuracy of

measurement. More recently, Russell & Cox assessed IZOF in 55 American university basketball and football players by measuring their positive and negative emotions during performance. Performances were also assessed. Like those in the Inlay et al study, athletes judged to be in their IZOF because they reported positive rather than negative emotions performed better but only moderately so. This suggests that the IZOF is a valid idea but that it is only moderately important. Randle & Weinberg used the CSAI–2 to assess cognitive and somatic anxiety of 13 college-level female softball players and relate these to performance. No difference emerged between performance when in or out of the IZOF; thus, this study did not support the idea of zones of optimal functioning. A further problem was highlighted in a study of Italian rugby players. It was found that the players' preferred level of arousal fluctuated considerably within individuals as well as between individuals. Thus, the IZOF varies as a function of situation as well as person. Despite these problems, however, Hanin's approach has many practical applications and is popular with athletes, coaches and sport psychologists.

STRESS MANAGEMENT

Regardless of which theories of arousal and anxiety we would consider to be the most correct or useful, there is no doubting the fact that athletes' performance can be seriously affected by their levels of arousal and anxiety. There are a number of psychological techniques for regulating arousal and anxiety that can be applied to sport psychology. We can divide these techniques into three main approaches. Relaxation techniques are designed to reduce the athlete's arousal levels. Cognitive-behavioural techniques are designed to improve the confidence of the athlete and reduce cognitive anxiety. Imagery can be used in a number of ways, both to increase confidence and reduce arousal and anxiety.

Relaxation Techniques

Relaxation means to reduce the body's arousal level. There are a number of ways in which we can learn to relax better. Two important ways of achieving relaxation are biofeedback and progressive muscle relaxation.

Biofeedback

One reason why we are not good at regulating our arousal levels consciously is that we have no accurate way of perceiving how aroused we are. The indicators of arousal, such as heart rate, blood pressure and skin temperature, are all very difficult for us to judge. The principle behind biofeedback is that if we can receive accurate information about our arousal level we can learn to control it consciously. The simplest way to tell how aroused you are is to measure your skin temperature with a biodot, a small disc that changes colour according to the temperature of your skin. The more relaxed you are, the higher your skin temperature will be. By seeing the dot colour change as you relax and tense, you can gradually learn to relax or tense at will. Other simple ways of monitoring arousal include measuring the number of heartbeats per minute with a stethoscope and counting the number of breaths per minute. Of course, as we all have slightly different heart rates, breathing rates and skin temperature, it is necessary before attempting biofeedback to establish what our individual levels are

when we are relaxed and when we are tense. There is a wealth of evidence supporting the effectiveness of biofeedback in aiding relaxation. There is also some evidence for its effectiveness in improving performance. Petruzello et al reviewed studies relating biofeedback to performance and concluded that there was strong support for the idea that biofeedback by measurements of heart and breathing rate is effective in improving performance. A note of caution needs to be sounded at this point. While relaxation procedures such as biofeedback are effective in reducing arousal and aiding performance in over-aroused athletes, they should not be used without knowing that the athlete is over-aroused. There is little point in reducing the arousal of a relaxed athlete – you will merely send them to sleep.

Progressive Muscle Relaxation (PMR)

PMR was the first of the modern relaxation techniques. Jacobson proposed that, by relaxing each group of voluntary muscles, we can induce relaxation in the involuntary muscles as well. He developed a technique whereby each group of voluntary muscles is relaxed in turn. In the modern version of PMR, four sections of the body are relaxed in turn. These are the arms; face, neck, shoulders and upper back; stomach and lower back; and the hips and legs. Participants are taught to tense each muscle group before relaxing it, helping them to appreciate the difference in sensation between tense and relaxed muscles. A training session lasts about 30 minutes. Once athletes have mastered the techniques of PMR they can induce relaxation much more quickly. As with biofeedback, numerous studies have shown that PMR is effective in inducing relaxation. However, Cox reported finding no studies showing that PMR alone improved performance, although several studies showed that PMR combined with other techniques was successful in enhancing performance.

Cognitive-behavioural Techniques

Cognitive-behavioural techniques for stress management, although only recently developed by psychologists, are rooted in the writings of the first-century philosopher Epictetus, who wrote that people are disturbed not so much by things as by the views they take of them. The principle behind cognitive approaches to stress management is that if we can make athletes perceive events as less threatening, they will not respond to them with the same anxiety. There are many forms of cognitive-behavioural therapy that can be applied to controlling competitive anxiety. These are cognitive-behavioural approaches that help to increase confidence and reduce anxiety. Another approach of particular importance in sport psychology is Locke & Latham's goal-setting theory.

Goal-setting Theory

Over the last decade, the goal-setting approach has become popular in industry and education as well as in sport. The idea behind goalsetting theory is that, faced with the broad, general aims of whatever we are trying to achieve, we are likely to feel overwhelmed, demotivated and anxious. By breaking down the general goal to a number of smaller and more specific goals, we can make what we are trying to achieve appear less intimidating and more achievable. Thus, goalsetting theory is both a theory of motivation and stress management. A rugby back might wish to improve his game.

However, this broad aim is difficult to achieve because there are so many aspects to the game of rugby, and because the size of the task is so daunting that it creates anxiety. According to goal-setting theory, players should first identify one or two specific aspects of their game to work on. They should then set themselves small manageable goals for improvement. For example, the players might identify their tackling as an area to improve. They could then set themselves the highly specific task of successfully bringing down opponents 75% of the time in the next game, and increasing this to an average of 80% by the end of the season. There are two types of goal that can be set in sport. In the above example, the rugby back has set a performance goal, that is, to improve an area of his performance. The alternative is to set an outcome goal. An outcome goal would involve winning contests as opposed to improving personal performance. This can create problems, as winning is not entirely in the control of the athlete. If athletes set themselves an outcome goal of winning a match and vastly improved their performance, but were then beaten by stronger or more experienced opponents, they would probably be needlessly demotivated. This illustrates that goal setting is no panacea, but must be carefully thought out to be effective. Broadly, research has supported the usefulness of goal setting in improving performance. However, researchers have been divided on the importance of specific rather than general goals, and that of difficult rather than easy goals. Weinberg et al conducted an experiment on the impact of goal setting on sit-up performance and found no difference in the performance of participants given moderate or difficult goals and those told to 'do their best'. This would appear to contradict goal-setting theory. However, 83% of participants in the 'do your best' condition reported that they had set themselves goals. Thus, success in this condition could be attributed to goal setting. Weinberg & Weigand reviewed goal-setting research and concluded that most studies had found that goal setting by an instructor had led to better performance than informal self-setting of goals. Goal setting has been applied to teams as well as individuals. Johnson et al randomly allocated 36 novice bowls players to different goal-setting conditions. One group was told to 'do your best'. The second group was set individual goals. The third group was set group goals. After 5 weeks, the three groups were assessed on their performance, and those in the group-goals condition were found to be performing significantly better than the other groups. Interestingly, performance was no better in the individual-goals group than the 'do your best' group. These findings suggest that somehow teams respond powerfully to goal setting, perhaps by increasing communication and cooperation. Athletes and coaches rate goal setting as an important strategy. Weinberg et al surveyed 328 Olympic athletes on their use of goal setting, and found overwhelming support for the technique. All those surveyed used goal setting and reported it to be highly effective. The three most important goals reported were improving performance, winning and having fun. Weinberg et al followed this up by investigating coaches' perceptions of goal setting. Fourteen American high-school coaches were interviewed and reported extensive use of goal setting. They believed that the purpose of goals was to provide structure and focus, and that goals should be both negotiated with athletes and dictated by coaches. Long- and short-term goals were set. This is interesting in that research has found that the most effective goals are short-term and negotiated with athletes – clearly, many coaches do not subscribe to these principles.

Imagery Techniques

The golfer Jack Nicklaus once said that a good shot is 50% due to the golfer's mental picture of what the shot should be like. The use of the 'mind's eye', or imagery, is considered important both in stress management and in focusing athletes on their task. Imagery can be used in various ways to aid relaxation and focusing. Sport psychologists distinguish between external imagery, in which athletes picture themselves from outside performing, and internal imagery, in which they view themselves performing from inside their own body. A good example of internal imagery is in the mental rehearsal of sporting techniques.

Mental Rehearsal

Most of us that have participated in sport have, perhaps before a match, mentally rehearsed some of the actions that will be required during the contest. Mental practice of techniques does not necessarily involve imagery – we can mentally rehearse a tennis serve without visualising a tennis court and opponent in front of us. However, many athletes find that visualisation of themselves carrying out techniques is particularly helpful. Mental rehearsal probably works for a number of reasons. The psychoneuromuscular theory emphasises the importance of 'muscle memory'. When we imagine carrying out a sporting technique, the nervous system and muscles react in a similar manner to that expected if we were actually carrying out the technique. This means that imagery helps us to learn and practise techniques. Another reason mental rehearsal works is that it desensitises us to the anxiety of competitive situations. The more we are exposed to things that cause us anxiety – whether in real life or in our imagination – the less anxiety they cause. Vealey & Walter have described the use of imagery by the Soviet Union Olympic Team in the 1976 games. The team, who had never seen the Montreal stadium sites, were given photographs of the various sites so that when they could visualise themselves performing at those sites. This may have helped the Soviet team to be less affected by the new environment when they encountered it. Numerous studies have shown that mental rehearsal involving imagery is effective in enhancing performance. Grouios reviewed studies and concluded that mental rehearsal is more effective than no practice although less effective than real-life practice. In general, it appears that imagery is of most use to elite performers rather than novices and to those skilled in imagery.

MOTIVATION AND SPORT

One of the fundamental questions about human nature that psychologists need to answer is, 'Why do we do things?' We could simply answer, 'because I want to', 'because I need to', or even 'because I just do'. However, although all these statements are

useful starting points, psychologists are not satisfied with these answers, and seek to uncover the reasons underlying our experiences of wanting to, needing to or 'just doing' things. We can examine some basic types of human motivation, theories about specific motivators and research findings concerning what motivates us to participate and succeed in sport. A useful starting point is to examine intrinsic and extrinsic motivation.

INTRINSIC AND EXTRINSIC MOTIVATION

An important distinction in types of human motives is that between extrinsic and intrinsic motivation. Extrinsic motivation results from external rewards. Intrinsic motivation comes from within the person. Both extrinsic and intrinsic motives are important in sport, and sport psychologists can work with both extrinsic and intrinsic motives to improve the performance of the individual. Intrinsic motives for taking part in sport include excitement, fun, love of action and the chance to demonstrate and improve our skills – in short, all the reasons that we enjoy sport. We will discuss some techniques designed to increase intrinsic motivation. The reason these can be used so effectively to motivate athletes is that they directly affect our intrinsic motivation. Extrinsic motives can come in the form of trophies, prizes and less tangible rewards such as praise and status. Although there has been an enormous amount of research into how motivation can be improved in those already participating in sport, rather fewer studies have examined what motivates people to choose to take up sport. Ashford et al interviewed 336 adults at a community sports centre in Leicester about why they participated in sport, and what they enjoyed about it. Four main motivations emerged, physical well-being, psychological well-being, improvement of performance and assertive achievement, the last meaning to accomplish personal challenges and to gain status. Age and gender significantly affected motivation. Older people were more motivated by psychological well-being than younger people. Men were more motivated by assertive achievement than women. These motives are all intrinsic rather than extrinsic, lending support to the idea that most people come to sport for reasons of intrinsic motivation. Of course, children's motives for taking part in sport may be different from those of adults. Daley and O'Gara investigated the motives of 145 children in a British secondary school for taking part in non-compulsory sport, using a questionnaire called the Participation Motivation Inventory (PMI). As in the Ashford et al study, the motives for sport participation differed according to gender and age. Between 11 and 15 years, intrinsic factors were more important and extrinsic factors less so. Girls emerged as more motivated by team affiliation and achievement than boys. Given that intrinsic motivation is so important, a key aim of research has been to identify influences on intrinsic motivation. One recent study by Amorose & Horn assessed 72 American athletes on their intrinsic motivation at the beginning and end of their first year of college-level participation. They were asked about how much time they spent on training, the nature of their coaching and whether they had sport scholarships. The behaviour of coaches had the strongest effect on intrinsic motivation. Students whose coaches spent more time on technical instruction tended to display significant increases in their intrinsic motivation during the year. By contrast, those whose coaches threw their weight about experienced a decline in intrinsic motivation.

The Additive Principle

Generally, we tend to come to sport motivated more by intrinsic than extrinsic factors. However, extrinsic motivators have been used in an attempt to boost intrinsic motivation. The additive principle states that athletes low in intrinsic motivation can have their motivation boosted by adding some extrinsic motivation. However, this common-sense approach has not been well supported by research. There are numerous case studies of athletes whose performance sharply declined as soon as they received lucrative contracts. Psychologists are always a little wary of case studies as evidence, but there are other ways of investigating the additive principle. One approach is to compare the motivation of athletes competing for pleasure and those competing for other reasons. Fortier et al compared the intrinsic motivation levels of Canadian athletes who participated for recreation with those involved in collegiate competition. The collegiate athletes, who were highly focused on the goal of winning, showed less intrinsic motivation than those participating for pleasure. An alternative approach to researching the additive principle is to follow up athletes after changes in their circumstances. In one such study, Sturman & Thibodeau followed the progress of 33 US baseball professionals for two seasons before and two seasons after they signed new contracts that substantially increased their income. Although there were substantial individual differences, performance typically dropped off after signing the contract. One way in which extrinsic motivators can be used successfully to boost intrinsic motivation is in the grading systems of the Eastern martial arts, usually symbolised by a coloured belt or sash. Contrary to popular belief, such belts are not an ancient tradition, but a relatively recent innovation in the martial arts. They are designed to provide regular tangible rewards for students' achievements, with the aim of motivating them to continue.

THEORIES OF MOTIVATION

Maslow's Theory of Needs

Maslow developed a theory of human motivation that aimed to explain all the types of human need and rank them in the order people seek to satisfy them. Maslow's hierarchy of needs is shown in Figure 8.2. The idea behind the hierarchy of needs is that we ascend the hierarchy, satisfying each motive in turn. Our first priority is to satisfy our physiological needs, such as food and warmth, because we cannot live without these. Only when these needs have been satisfied do we seek out safety. Once we are safe, the next thing we need to worry about is our social needs, that is, to belong to a group and have relationships with others. When our social needs are satisfied, esteem needs become paramount. To satisfy them, we need to achieve, to become competent and to be recognised as so. Once this has been achieved, our focus will shift to satisfying our intellectual needs, which include understanding and knowledge. Next in Maslow's hierarchy above intellectual needs come aesthetic needs, that is, the need for beauty, order and balance. The final human need identified by Maslow is for self-actualisation, that is, to find personal fulfilment and achieve one's potential.

Fig. 8.2 Maslow's hierarchy of needs.

According to Maslow, we are all striving to ascend the hierarchy of needs, but very few of us achieve self-actualisation. Sport, however, does provide a possible path to self-actualisation. Athletes who rise to the very top of their field, holding world records and championship titles, could be said to be self-actualised in that they have fulfilled their dreams and their potential. On the other hand, we should be careful not to equate self-actualisation with success. There are numerous sporting celebrities who, despite rising to the top of their chosen sport and appearing to fulfil their potential, have clearly not found personal fulfilment and have, by contrast, 'gone off the rails'. Maslow's theory has been enormously influential. Most importantly, he has opened our eyes to the range of human needs. If you have carried out the exercise above, you have probably seen that you have multiple reasons for participating in sport, and that your reasons are grouped above the physiological and safety needs. If you are motivated principally by physiological and safety needs (say, for example, if you are homeless and starving), it is unlikely that you would be able to raise much motivation to take part in sport. Sport is an excellent way of providing us with esteem and social needs. For some, it may also provide a path to self-actualisation.

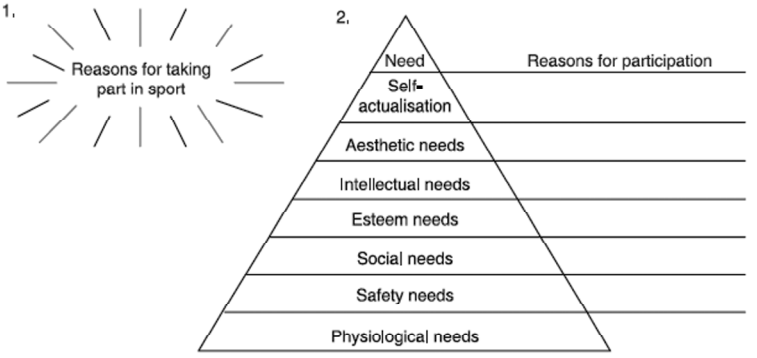


Fig. 8.3 Fitting resons for sport participation into the hierarchy of needs

Despite the usefulness of Maslow's work, his prediction that we are all motivated by these needs and that everybody seeks to satisfy them in the same order is suspect, particularly when we look at elite athletes who have put success ahead of other considerations. Saul has pointed out that 65% of ballet dancers have chronic injuries and suggested that they have sacrificed physiological needs in pursuit of aesthetic needs. This is perhaps an extreme example, but it illustrates that sometimes aiming for higher needs means not satisfying the more basic needs – contrary to Maslow's theory.

Achievement Motivation

The link between the wish to achieve and sporting success is an obvious one. A strong wish to succeed in your chosen sport will be a huge asset in determining how hard you train and how hard you try in competition. All participation in sport involves achievement, regardless of whether you regard competition as important. You are in fact probably more likely to boost your performance by setting yourself goals of personal achievement, such as 80% of first serves in, 90% of penalties in the net, rather than goals of victory. Some psychologists see the drive to achieve as innate, whereas others see it as acquired by experience. Some believe that the most important factor is to achieve success, whereas others emphasise the motive of avoiding failure. The most influential theory of achievement motivation comes from McClelland et al and Atkinson.

The McClelland–atkinson Theory of Need Achievement

The aim of the McClelland–Atkinson theory was to explain why some individuals are more motivated to achieve than others. The athlete's intrinsic motivation is seen as the motive to achieve. Acting against this intrinsic motivation, however, is the motive to avoid failure. When faced with a task such as sport, we face an approach– avoidance conflict. We are motivated to approach and take part by our desire to succeed, but we are also motivated to avoid taking part by our desire to avoid failure. Our individual decision to participate in sport is determined by the relative strength of these two factors.

This is shown in the following equation:

- **Achievement motivation = desire to succeed – fear of failure.**

To McClelland and Atkinson, achievement motivation is a personality trait. For some of us, the desire to succeed far outweighs the fear of failure, and we are said to

be high in achievement motivation. For others, the fear of failure is the more important factor, and they would be said to be low in achievement motivation. This personality trait is not the only factor that affects motivation. The situation is also important, specifically the probability of success and the incentive for success. Thus, even if athletes are low in achievement motivation, if the probability of success is high, and the rewards for success are great, they are likely to be motivated. Gill reviewed research on choice of high- and low-difficulty tasks and concluded that there is much support for the prediction by the theory that high achievers seek out difficult tasks and low achievers prefer easier tasks. However, the theory does not reliably predict sporting performance. Of course, this does not mean that the theory is worthless. As Cox says, the value of measuring achievement motivation is not to predict performance, but to predict long-term patterns of motivation.

Achievement Orientations

The most influential and researched approach to motivation in sport psychology, as well as in other arenas such as educational psychology, is Nicholls' theory of goal or achievement orientations. Nicholls makes the important distinction between two styles of achievement motivation, task orientation and ego orientation. These appear during different stages of psychological development. They result from the ways in which athletes explain their perceived ability. Task orientation appears at 2–6 years of age. Children at this stage tend to judge their sporting competence on the basis of how well they performed the task at the last attempt. Crucially, their judgements of their performance are strongly influenced by their effort; that is, if they try hard, they think they have done well. However, a change takes place in the way children come to view their sporting competence at around 6 years. Ego-oriented children base their judgement of their competence on their success relative to their peers. As adults, we have access to information about both our past performances and the performances of others to judge our competence. Task and ego orientations are not mutually exclusive and can exist in the same person. However, some athletes prefer to rely on past performance whilst others prefer to look at performance relative to others. Athletes can be classified as task-oriented or ego-oriented according to these preferences. Table 8.1 compares the characteristics of task and ego-oriented athletes. Both task and ego motives can be helpful to the athlete. However, as we can see from Table 8.1, a task orientation has the advantage of greater persistence in the face of adversity. One way in which sport psychologists can enhance athletic motivation is to help athletes develop a healthy blend of task and ego orientations. In a recent study of golfers, Steinberg et al compared the progress of 72 novice golfers who were assigned to one of four training conditions. In the first condition, training focused purely on competition; in the second, it was based purely on task mastery; in the third, there was a balance between mastery and competition; and in the fourth, there was no systematic orientation toward tasks or competition. After 6 weeks, only the group with combined training orientations had significantly improved their performance.

	Task-oriented	Ego-oriented
Criterion for judging success	Past personal performances	Comparison with others
Judged cause of success	Practice and skill development	Chance and natural ability
Response to difficulty/failure	Persistence	Cheating

Table 8.1 Comparison of task- and ego-oriented athletes

Mastery and Performance Environments

Particular environments seem to foster task and ego orientations. A mastery environment can be defined as one in which there is a focus on the mastery of skills. This is associated with promotion of a task orientation. By contrast, the emphasis in a performance environment is on comparison of the individual abilities. In training, the latter can disadvantage low-ability participants, who simply experience the humiliation of comparison with more skilled athletes in response to their efforts. It is widely agreed that a task-oriented training environment is preferable to an ego-oriented environment. Ames has suggested the TARGET system for ensuring that a training environment is task oriented. An interesting contrast is that between the environments in which martial arts are practised. Wing chun is taught in an extremely taskoriented environment with close attention to perfecting technique and without competition. By contrast, the emphasis in tae kwondo is very much on competition. There is a similar division amongst the grappling styles. Gernigon & Le Bars compared achievement orientation in French practitioners of judo and aikido, the former being more of a competitive sport and the latter a highly traditional art. Task orientation was greater in aikidoka whilst ego orientation was dominant in judoka. The disparity was wider in more experienced practitioners. Of course, once we are in competition, our environment is inevitably oriented to performance, and this appears to affect the orientation of competitors. Pensgaard tracked the orientations of the Norwegian women's soccer team throughout the 1996 Olympic Games. As we might expect, given the emphasis on medals at the Olympics, task orientation declined and ego orientation increased throughout the games.

Attribution Theory

Because we have a desire to understand the world around us, we have a powerful tendency to make attributions about the causes of events and behaviour. This means that we come to a conclusion about why something happened or why someone behaved or performed in a certain way. We make attributions about our own behaviour and about the behaviour of those around us, whether or not we have the evidence to arrive at accurate conclusions.

Internal and External Attributions

Broadly, we can make two types of attribution, internal and external. Internal attributions place the responsibility for behaviour or performance with the individual, whereas external attributions place the reasons in the situation. Consider the following example. A college rugby team has just returned home after their first match, having lost 72–0. They have the unenviable task of explaining the score to others. They make a number of internal or external attributions to explain why they lost so badly. Examples of these attributions are shown in Table 8.2.

Internal	External
We are just no good	The referee was biased
We didn't try hard enough	The crowd was on their side
I let the team down	They have played together many more times than we

Table 8.2 Examples of some internal and external attributions following failure

Table 8.2 shows various attempts to make sense of the catastrophic result. The players adopting the internal attributions are blaming themselves, whereas those adopting the external attributions are blaming other characteristics of the situation. As you can imagine, after a humiliating defeat, most of us would tend to adopt external attributions and blame other factors, whereas after a success most of us tend to adopt an internal position and take the credit. This phenomenon is known as self-serving bias. Whether we make internal or external attributions appears to be related to self-esteem; hence, this can affect performance. Biddle and Hill conducted a study in which 58 sixth-form and university students fenced, all for the first time. The outcome of each match was manipulated by the experimenters so that some participants consistently won and others consistently lost. After a series of matches, the attributions and emotional states of the participants were measured. Statistical analysis of the results showed that the attributions made by the students to explain the results were strongly related to the emotions they experienced, particularly in those participants who consistently lost. This shows that the main predictor of self-esteem in losers is the perception of why they lost.

Weiner's Model of Attribution

Weiner produced a model of self-attribution based on two factors, whether an internal or external attribution is made, and whether this attribution is stable over time or varies from one situation to another. The relationship between attribution and stability is shown in Figure 8.6.

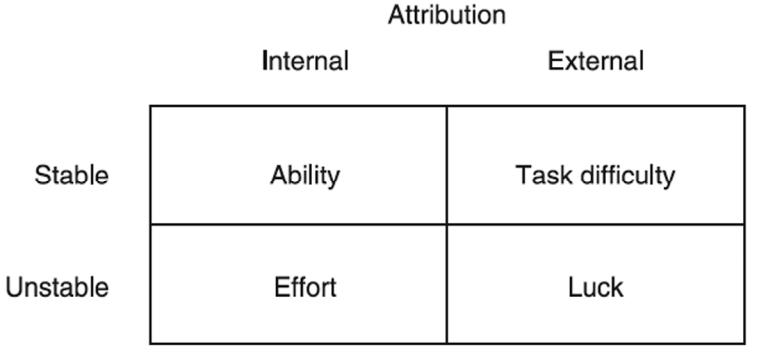


Fig. 8.6 Weiner's model of attribution

If we consistently succeed or fail, our attributions are likely to be stable. This means that we are likely to attribute the outcome to either our ability or the difficulty of the task. Because of self-serving bias, it is more likely that we will attribute success

to ability and failure to task difficulty. If our results are less consistent, we will probably attribute them to effort or luck. Again, self-serving bias means that we are likely to attribute success to effort and failure to bad luck. Weiner's model gives us a starting point to work with athletes to correct their attributions. We may wish to shift the attributions of lazy athletes toward the unstable-internal position so that they realise more effort is needed. We may also wish to shift the attributions of depressed athletes away from a stable-internal position, so that they cease to blame their lack of ability. This is examined further below when we look at the idea of learned helplessness. Altering an athlete's attributional state is called reattribution training, and is a form of cognitive therapy. An example of the use of attributional therapy comes from Orbach et al, who investigated the effectiveness of attribution training with 35 inexperienced tennis players. They were given false feedback over four training sessions, in order to lead them to attribute successes to internal factors. As hoped, the players changed their attributions in response to the feedback, and these changes led to improved self-esteem and performance.

SELF-EFFICACY

Appearing to be important in the link between attributions and performance. Bandura has introduced the related but distinct concept of self-efficacy. Self-esteem refers to how we feel about ourselves, and it is generally stable across a range of situations. Self-efficacy, by contrast, refers to what we believe about our abilities. Unlike self-esteem, self-efficacy is situation specific. For example, if you are a natural athlete, but have some difficulty in getting to grips with sport psychology, your self-efficacy will probably be considerably greater on the field than in the classroom. Schunk has suggested four sources of information that we draw upon in order to arrive at our academic self-efficacy. Self-efficacy can exert a powerful effect on performance. As Bandura put it, 'once extraordinary performances are shown to be doable, they become commonplace'. Bandura proposed that self-efficacy could be boosted by successful performance, verbal persuasion and feedback about performance. Wells et al set out to test whether self-efficacy could be affected by feedback, and whether changes in self-efficacy could affect performance on a weightlifting task. Three groups of students were randomly assigned to three groups. Two of the groups were misled about the weight they were successfully lifting. One group, termed the 'light group', lifted less weight than they believed. A 'heavy group' lifted more than they believed. The third group received accurate information about how much they were lifting. The 'light group', who had received false feedback designed to boost their self-efficacy, were able, in a later trial, to lift more than they had originally. This finding underlines the importance of giving positive feedback to athletes – even if you exaggerate a little about how well they are doing! There is little doubt that self-efficacy is a valid construct. It can be measured, and studies such as that by Wells et al have demonstrated that it can be manipulated, as predicted by Bandura, in order to improve performance. For a coach or teacher, self-efficacy is a useful idea to bear in mind during training. It is, however, a weaker predictor of success than previous performance. Krane et al looked at self-efficacy in wrestlers, and found that it was most important as a predictor of victory when competitors were evenly matched. Like other psychological factors, self-efficacy

may make all the difference at very high levels, when competitors are probably physically well matched.

COUNTERFACTUAL THINKING

Sometimes our attributions about sporting successes and failures can be quite unrealistic. This type of thinking is called counterfactual thinking (CFT) because it runs counter to the facts of the situation. On occasion, our general tendency to make attributions about the causes of events can lead us to think about past events, over which we no longer have any control. Thus, athletes who have underachieved can waste time 'torturing' themselves about what might have happened had they approached things differently or not made an error. This is called upward CFT. The opposite phenomenon also occurs, and we might indulge in thinking excessively about how much worse things might have been. This is called downward CFT. CFT tends to occur when an outcome is negative, unexpected and upsetting, particularly when the result constitutes a near miss. Wolfson discusses the example of the 1998 World Cup quarterfinal, when David Beckham was famously dismissed for kicking out at an Argentinian player after an aggressive tackle. The England team was by no means certain to win had Beckham remained on the pitch; however, England's loss was almost universally attributed to his actions, and the UK press and public engaged in an 'orgy' of CFT, focusing on the likely outcome of the championship had the incident not taken place. Interestingly, had England been clearly losing at the time, probably little attention would have been given to Beckham's action – this illustrates the importance of the near miss in activating CFT. Both upward and downward CFT can lead to positive and negative consequences. Upward CFT can be a depressing experience if it just leads us to relive unhappy and humiliating experiences. However, it can also be helpful in pointing us in the direction of improvement. Thus, a batsman who takes a thrashing from a bowler using a high bounce might feel humiliated and dwell on this, thinking about what might have happened if he had survived the over (an example of upward CFT) or what might have happened if the ball had hit him and damaged his brain (an example of downward CFT). However, if it leads him to work on his defence, it may improve his performance in the long run. Downward CFT has a defensive function, and may make us feel better after something has gone wrong; for example, a footballer who breaks an ankle after a tackle might comfort himself with the thought that if the tackle had been higher there might have had serious knee damage ending his career altogether. However, there is a risk that downward CFT can lead to complacency. Thus, the martial artist who scrapes through a brown belt grading and then dwells on this achievement, ignoring the nearness of failure and the harder task of gaining a black belt, is likely to lose the necessary motivation to continue training hard (this is known as the 'brown belt blues'). Martial arts instructors often introduce new challenges and work students particularly hard after a grading in order to avoid this.

PATHOLOGICAL MOTIVATION AND SPORT

It is unusual to be involved in sport psychology if we don't feel positively about sport. One of the consequences of this is that we often find it difficult to consider sporting behaviour in a bad light. Most of the time, we think that being highly motivated to

participate and achieve in sport is a good thing. However, sometimes when it is possible to be too motivated. We might think of motivation as pathological when it leads to overtraining and burn-out, or when athletes compromise their health in pursuit of sporting excellence, as in effecting rapid weight loss.

Burn-out

The phenomenon of burn-out was first described by Freudenberger. It is not unique to sport but can occur in any situation in which people respond to pressure by overworking. Its symptoms are depersonalisation (becoming emotionally cut off from other people), impaired performance and satisfaction, and emotional exhaustion (feeling weary and resigned). There has been relatively little research into burn-out in athletes (the most researched group are teachers). Gould et al have studied burn-out in young tennis players. They concluded that young athletes are under considerable pressure to succeed, and that those particularly vulnerable to burn-out are those who take on too many commitments in order to please others. Parental expectations emerged as a particularly significant factor in burn-out. Burn-out is thus not simply a result of the fatigue of overtraining and competing, but is also the emotional consequence of stress. Burn-out is associated with the personality characteristic of perfectionism. A degree of perfectionism is of course essential in maintaining the motivation to perform at elite level. However, there appear to be different types of perfectionism, and not all are positive. Frost et al distinguish between positive achievement strivings and maladaptive evaluation concerns. Positive achievement strivings are associated with high personal standards and organisation. They broadly represent the positive aspects of perfectionism. Maladaptive evaluation concerns, on the other hand, are associated with excessive concern over mistakes, self-doubt and concern with parental criticism. It appears to be maladaptive evaluation concerns that are associated with burn-out.

Eating Disorders

Sporting performance is associated with aesthetic satisfaction; that is, it is appreciated as a form of beauty. Some sports, such as diving and gymnastics, are partially scored on aesthetics. Cheerleading, which can be considered a sport in itself is a predominantly aesthetic activity. The problem with this emphasis on appearance is that it creates pressure for athletes to conform to narrow definitions of attractiveness, often requiring weight loss. In this case, the motivation for sporting excellence can directly lead to unhealthy behaviours. Gymnastics creates particular problems, as it requires a particular body type, and at the elite level maintenance of this body type is short-term and associated with long-term health problems such as osteoporosis (brittle bones). Participants in combat sports such as boxing and wrestling, in which there are many weight classes, may also be at risk, as athletes can be required to lose weight extremely rapidly to shift to a different competition weight. Weight loss is usually achieved by restricting food intake (as in anorexia) or by using vomiting and laxatives to prevent food uptake (as in bulimia). Surveys have been conducted to assess body dissatisfaction and symptoms of eating disorders in athletic populations. Dobie surveyed American high-school athletes and found that 5.4% overall and 6.6% of girls reported sufficient symptoms to be diagnosed as having an eating disorder. Body dissatisfaction,

the athlete's sense of being overweight, is much more common. In a survey of 155 American cheerleaders, Reel & Gill reported that 84% of respondents felt under pressure to maintain a low weight, and 40% agreed that they would be better cheerleaders if they lost weight. Given that body dissatisfaction is associated with the development of eating problems, these statistics are very worrying. Surveys of coaches suggest that as a group they are not well informed about the early signs of eating problems or in encouraging healthy eating habits. This represents a serious failure among professionals and a role for sport psychology.

RESEARCH METHODS IN SPORT PSYCHOLOGY

This stage is devoted to understanding the sort of research conducted in sport psychology. There are two purposes of this. First, it should give you a slightly deeper understanding of the research you will come across in this and other books whilst studying sport psychology. For example, you might wish to understand better why a study was done the way it was, or what the strengths and limitations are of the different research methods. Second, it should help you begin to plan your own research. There is no attempt to include everything you might ever want to know about carrying out research; that would be a book in itself, and there are several good books of that sort. However, it should give you a sound background in some basic principles.

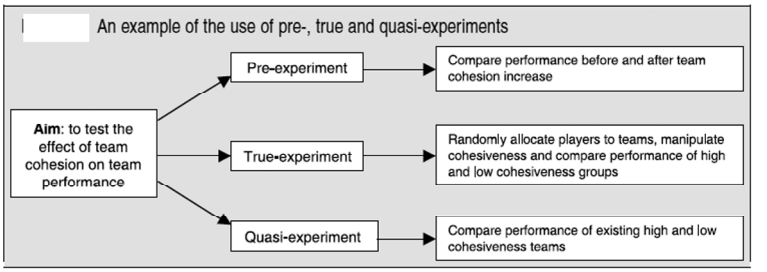
QUANTITATIVE AND QUALITATIVE RESEARCH

Hayes defines quantitative methods as those 'which involve the manipulation of numerical data'. In other words, the researchers are dealing with information in the form of numbers. Qualitative approaches, on the other hand, attempt to draw out the meanings of data; that is, they interpret that when people say something that they are revealing something important. Some research methods such as experiments generate mostly quantitative data, whilst others such as interviewing are looking mainly for qualitative information. Of course, sometimes we can extract some interesting numbers from interviews (e.g. the percentage of people answering a particular way), and sometimes some of the most interesting findings from experiments are not so much the numbers we obtain but observations of comments participants make about the procedure. Some psychologists have very strong feelings about the usefulness of qualitative and quantitative research. Some qualitative researchers believe that quantitative methods are clumsy and miss uncovering the most important details available from research. On the other hand, some quantitative researchers see qualitative methods as informal and lacking in scientific rigour. A simple and pragmatic way of thinking about the qualitative–quantitative debate is that we need both approaches because they tell us different things. When we want to know whether two variables, say, extraversion and success as a track athlete, are related, or whether there is a difference in the numbers of goals scored in home and away games, we are clearly dealing with variables that can be measured numerically. In these cases, there is no doubt that quantitative data should be gathered. However, if we are using a focus group method to find out about people's motives for taking up sport, we will soon find that if all we analyse is the frequency with which people identify a particular reason, we will begin to ignore some of the most important things our participants are telling us. In this case, we would do well to concentrate on collecting qualitative data.

THE EXPERIMENTAL METHOD

The aim of an experiment is to establish a cause-and-effect relationship between two or more variables, that is, whether one (called the independent variable) causes an effect on the other (known as the dependent variable). For example, we might investigate experimentally whether high levels of team cohesion affect the team's scores. This is achieved by comparing two or more conditions, whilst keeping other factors constant. In the above example, we might compare the performance of teams known to be high and low in team cohesiveness, or see how performance changes after a change in cohesiveness. There are some variations in the ways we could test this experimentally. Pre-experiments, true experiments and quasi-experiments Pre-experiments (also known as pre-post-test comparisons) involve measuring the dependent variable before and after the manipulation of the independent variable in a single group of participants. For example, we might assess team cohesiveness, then follow a programme known to increase team cohesiveness, and finally reassess the team's performance. This allows us to infer (that is, make a logical judgement) that any improvements in team performance are a result of the increase in team cohesiveness. The limitation of the pre-posttest design is that we can infer only that any change is the result of the course. In a real-life sporting setting, many other variables also have effects on athletic performance over time, and it may be that any change in performance is due to other factors. An alternative to the pre-post-test comparison is the true experiment. A true experiment involves the random allocation of participants to conditions, including a control condition. The purpose of this randomisation is approximately to match all the relevant variables between the experimental and control groups, making the experimental and control groups truly equivalent. When this has been achieved, it is possible to attribute differences to the variations in the independent variable. In the team cohesiveness example, to test the hypothesis that high levels of team cohesiveness lead to good team performance, we could randomly allocate athletes to teams, manipulate their cohesiveness to create teams high and low in cohesiveness, and then compare their performance. In fact, this has been done. Grieve et al randomly assigned 222 male, university student, basketball players to three-person basketball teams, and manipulated the interactions of each team in order to create either high or low levels of team cohesiveness. Each team was then assessed for cohesiveness, given a series of games and then assessed again for cohesiveness. No relationship emerged between early cohesiveness and later performance. The third experimental design is the quasi-experiment. We conduct quasi-experiments whenever we compare two groups that already exist as distinct groups, as opposed to having been randomly allocated. We could, for example, compare the performance of existing sports teams who are high and low in team cohesiveness. This is the quickest and easiest way of investigating the effect of cohesiveness on performance, and it has the advantage of looking at real teams in the real-life situation of their sporting league as opposed to in the artificial settings in which randomly allocated teams perform. There are many cases where we have to adopt a quasi-experimental design because we cannot create two truly equivalent groups. Say we wanted to compare the crowd behaviour of fans of two football clubs.

We cannot randomly allocate fans to two clubs because by the time they are football fans their loyalty to one team is already established. All we can do is to compare existing football fans. Similarly, if we want to compare men and women in the ability to perform a sporting technique, we cannot randomly allocate them to conditions because they are already male or female.



Laboratory and Field Experiments

Another important distinction is that between laboratory experiments, that is, those carried out in artificial and controlled conditions, and field experiments, which are carried out in the natural environment of the participants. There are advantages to both these procedures. Take the issue of social loafing. Heuze & Brunel tested whether the reputation of an opponent affects the likelihood of social loafing. They conducted an experiment in which students threw darts under four conditions. In one condition, they had no opposition. In the other three conditions, fictitious opponents were created who were inferior, equal or superior in standard. This sort of study could be carried out fairly easily in a laboratory or the field. The advantage of doing it in the laboratory is that we can control the conditions, whereas in the field all sorts of factors can affect performance. The natural environment of the darts player is the pub. Here, anything from the quality of the beer to the attractiveness of the bar staff can affect concentration and hence performance. In the laboratory, we can make sure that there are no distractions, and so we can be more certain that all that actually varies between the four conditions is the independent variable in which we are interested. On the other hand, what we gain in experimental control in the laboratory we can lose in realism. When athletes are performing in their natural environment, they are more likely to behave naturally. There is thus a trade-off, and it is important to carry out experiments in both the laboratory and the field.

Discussion of the Experimental Method

Experiments are the most direct way of testing cause and effect, and they form a very important part of sport psychology. Despite their usefulness, however, there are a range of problems that limit the validity of experimental findings, and it is important to be aware of these. One particular problem in experimental research is the Hawthorne effect. This occurs when participants in an experimental condition realise they are the subjects of study and accordingly perform better than those in the control condition. The Hawthorne effect may lead researchers to attribute more importance to the experimental condition than is justified. This can be made worse by a statistical

phenomenon called regression to the mean. This means that low pre-test scores have a general tendency to become higher in post-test assessment, further exaggerating the significance of pre-post-test differences.

THE CORRELATIONAL METHOD

The aim of correlational research is to establish relationships between two or more measured variables. Wherever a psychological variable felt to have a bearing on performance is measurable, such as personality traits, motivational style or team cohesion, it becomes possible to assess its relationship to other variables, most obviously measures of performance outcome such as team scores, league positions or individual statistics. We might also look for relationships between these apparently independent variables, to see, for example, whether a personality trait is associated with a motivational style. Correlations are usually presented as a coefficient, that is, a figure between 0 and 1. The nearer it is to 1, the stronger is the relationship between the variables. This may also be presented in graph form. Some examples are shown in Figure 10.1.

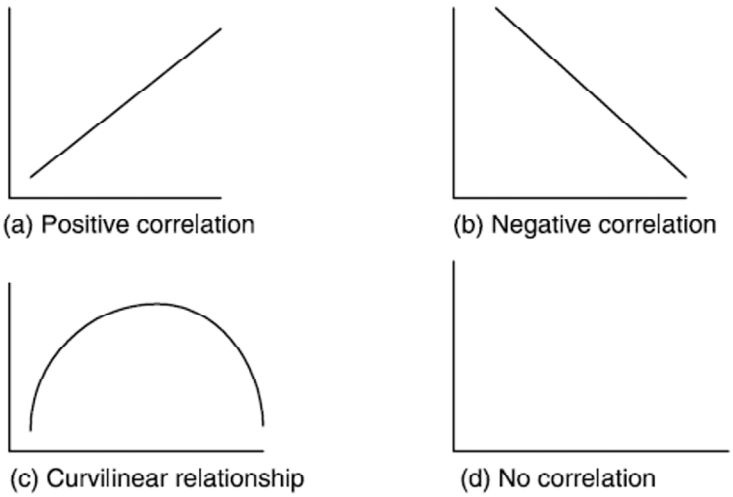


Fig. 10.1 Some correlation patterns

In Figure 10.1 (a), there is a positive correlation between two variables. A sporting example of a positive correlation would be that between team cohesiveness and performance. In (b), there is a negative correlation. A sporting example of a negative correlation would be that between number of goals scored and the size of the opposing team's crowd. In (c), there is a curvilinear relationship between two variables. An example of a curvilinear relationship is that between arousal and performance. In (d), there is no correlation between the two variables. Two unrelated variables in sport psychology are performance and hair length. As well as the obvious use of correlation to look for relationships between individual and team characteristics and outcome measures, it can also be used to look at the relationships between independent variables and process variables. For example, we know that the personality trait of conscientiousness is positively related to athletic performance. However, this raises

the question of why this might be. One likely explanation is that highly conscientious people spend more time training. We can investigate this by correlational techniques, and it is important to do so because if we find that it is really training time, not personality, that affects performance, we can overcome the problem of athletes low in conscientiousness by supervising their training more closely. There are a range of correlational techniques that we could apply to this situation.

Partial Correlation

Partial correlation can be used to assess the relationship between two variables whilst controlling for a third. For example, we might be interested in the relationships between conscientiousness, training time and individual performance. If we suspect that the relationship between conscientiousness and performance is the result of the influence of a third factor of time spent training, we could carry out a partial correlation in which the relationship between conscientiousness and performance is calculated while controlling for training time. If there is still a relationship once training time is controlled for, we may infer that there is a direct relationship between the two variables. If there is not, we would conclude that conscientiousness is important only because it affects training time.

Multiple Regression

Multiple regression (or multiple correlation) is another variation on the basic correlational procedure. In multiple regression, a set of variables are all intercorrelated. This is useful when we want to know about a range of factors that might be related to a dependent variable. For example, we might be interested in a range of factors underlying the performance of boxers, including their aggression, conscientiousness, achievement orientation, team cohesiveness and the quality of their relationship with their coach. By multiple regression, we can in one calculation compare the strength of the relationship between each of these variables and the boxers' performance. In addition, multiple regression also allows us to see the relationships between each of these variables – for example, whether achievement orientation is associated with personality traits. To return to our example of the relationship between conscientiousness, training time and performance, we could use multiple regression to calculate the correlation between each of the three variables. Thus, we would know the strength of the relationship between conscientiousness and training time, between conscientiousness and performance, and between training time and performance. Looking at the strength of these three relationships together will give us a sophisticated understanding of the relationship between these three variables.

Cross-lagged Correlation

Sometimes we have the opportunity to measure two or more variables across time and look at the relationships between each at the beginning, middle and end of a period. For example, we might wish to measure the relationship between team cohesion and performance. Measuring the relationship on one occasion (assuming we find a significant correlation) will not give us much of a clue as to whether the cohesion actually caused the performance, because, of course, it may be that the converse is true – team

cohesiveness increases as a result of good results. We can get around this problem by cross-lagging our correlation. Slater & Sewell did just this when they assessed team cohesiveness in 60 university-level hockey players from six teams, early, midway and at the end of the season. The relationship between early cohesiveness and later success and between early success and later cohesiveness could thus be calculated. It was found that, whilst early success was related to later cohesion, the stronger relationship was between early cohesiveness and later success. This suggests that there is a two-way causal relationship – team cohesiveness does affect performance, but performance also affects cohesiveness, though to a lesser extent. Cross-lagged correlation can also give us some insights into our example of the relationship between conscientiousness, training time and performance. If we were to measure the three variables at the start, middle and end of a season, we could see whether conscientiousness at the start of the season influenced training time and performance later in the season. If these were strongly related, this would suggest that the conscientiousness caused the training time and performance. If, however, performance early in the season correlated more strongly with later conscientiousness, this would suggest that the early success caused the later conscientiousness – this is certainly possible.

Discussion of the Correlational Method

Where we are dealing with measurable variables and are interested in whether one thing is related to another, correlational techniques are invaluable. They are particularly important when we are dealing with multiple variables. Say, for example, we want to know about the relationship between performance and several factors that might affect it, such as achievement motivation, conscientiousness and the relationship with the coach. We could establish a quasi-experiment with nine conditions (e.g. condition 1: mastery orientation, extravert, conscientious). However, this would be a very complex business to organise, and results would still be in the form of comparisons between extremes – this would not necessarily tell us much about the relationship between performance and the three other variables. In this sort of case, multiple regression would be a better way of analysing the data. The major limitation of the correlational methods is that we need to be a little cautious about using them to infer cause-and-effect relationships. Just because training time is positively correlated with performance does not necessarily mean that it directly causes it. Success may be highly motivating, and this may lead an athlete to spend more time on training. Alternatively, a third factor might underlie both variables. For example, athletes with a good relationship with their coaches may wish to train harder to please them and are likely to learn technique from them more efficiently. Nevertheless, we can use correlational techniques such as cross-lagging and partial correlation to give us a better idea of causal relationships. The problems of using correlational methods to make judgements about cause and effect are sometimes exaggerated, but they are still worth bearing in mind.

SURVEY METHODS

Sometimes in sport psychology what we are interested in is not so much 'what is' as what people think, feel or believe. In this case, the most direct way of finding out what we want to know is to ask them. This is done by survey. We can survey people

on paper or electronically by questionnaires. Alternatively, we can speak to them individually in an interview or in focus groups. Questionnaires, interviews and focus groups tend to generate different sorts of data and are useful in different situations.

Questionnaires

There are several ways of asking questions in a questionnaire. You might, for example, simply ask open questions and leave a space for answers. This is useful when you don't really know what people are going to say, but it can make analysis of the results harder because answers will not come in the form of neat categories. Alternatively, you might prefer closed questions, which require a choice between a number of options. Sometimes, particularly when we are measuring emotional responses or attitudes, we want to know the strength of participants' responses. For example, if we are using a questionnaire to measure attitudes to boxing, we want to know not just whether they are pro or anti but how strong their views are. We can do this by means of Likert scales and semantic differentials. There are strengths to questionnaires. They can be distributed to large numbers of people with little effort or expense. They can easily be designed to generate quantitative data, meaning that they can be used in correlational and experimental designs. On the other hand, response rates to questionnaires are typically quite poor (except for 'captive audiences', less than half of people who receive a questionnaire typically complete and return it). There is also little chance to collect interesting ideas that people would like to tell you but for which there is not an obvious place on the questionnaire.

Interviews

Interviews are verbal interactions that can be conducted face to face or by telephone. Interestingly, some studies have found that people are less truthful in telephone interviews. Interviews can be used to collect quantitative or qualitative data, but they are best suited to the latter – there is little advantage to using an interview rather than the much quicker questionnaire method to collect quantitative data. For this reason, interviews are more likely than questionnaires to have open rather than closed questions. We can think about four major types of interview. In structured interviews, the format of questioning has been worked out in advance, and all respondents are asked the same questions in the same order using the same wording. Unstructured interviews are more open; respondents are asked the same questions, but they are allowed to diverge considerably from these when they respond. In nondirective or clinical interviews, there are no fixed questions, and the interviewer just identifies the broad area, and then respondents explore the issues according to their own thinking. Focused interviews are used to assess responses to a particular experience. As far as possible, they are non-directive; however, the interviewer identifies a hypothesis in advance and aims to test this by looking at respondents' answers.

Focus Groups

Focus groups are group interviews in which the interactions between group members stimulate the generation of ideas and opinions and add to the information

gathered. The use of focus groups has advantages over traditional interviews. Participants speak in a group of peers and are thus more inclined to speak freely. They are also prompted by others to think of a view that, alone and put on the spot, they might have thought about too late to be recorded. On the other hand, it is possible that respondents are more influenced by the social desirability of particular answers.

Discussion of Survey Methods

Often, what we are interested in are people's opinions, motives, feelings, attitudes, etc. When these are the focus of our research, it is advisable to use a survey method to determine them. It is possible to design experiments to demonstrate that people behave in a particular way and so presumably have a particular attitude. However, this is usually inadvisable, as there can often be a significant difference between people's attitudes and behaviour. They might, for example, like sport but not bother to participate. However, the reverse is also true – surveying people's attitudes and beliefs will not tell you how they will behave in a particular situation. For that, you require a different approach, perhaps an experiment.

CASE STUDIES

A case study involves the detailed analysis of a single case; this may involve a single athlete or a team in a particular set of circumstances. We may, for example, be concerned with how a particular athlete responded to an anxiety-management technique, or how a football team responded to the sacking of its manager. The sort of data we gather in a case study can vary widely, but it typically involves preexperimental designs in which the athlete or team is compared before and after an event. It is also likely to involve some sort of surveying. Some cases trace change in an individual athlete or team after a targeted intervention strategy. These studies can be thought of as preexperimental, because the effect of an independent variable is being observed. For example, we might track motivational change in an athlete whose coach is using goal setting for the first time. Such case studies are sometimes called n=1 experiments, n being the number of participants. Case studies provide rich information with which we can understand a situation; in some cases, they provide the only available data with which to understand the effect of independent variables. This is particularly so when a situation is highly unusual or cannot be replicated for ethical reasons. For example, a football team traumatised by the unexpected death of the manager will have a complex emotional response requiring in-depth analysis. Such a situation is sufficiently unusual for it to be impractical to gather a large sample size, and it is obviously impossible to replicate experimentally – we can't go around murdering managers just to see what happens! The limitations of case studies are clear, however. They are oneoffs, and it is impossible to know whether the results can be generalised to other individuals or institutions. Take the above hypothetical case of the athlete newly introduced to goal setting. It is very likely that whilst tracking one case might reveal improved motivation and performance, another apparently similar case might not show any change at all.

ARCHIVAL STUDIES

Sometimes in sport psychology research, we are interested in analysing sporting

statistics – for example, the percentage of wins under different circumstances such as when playing at home and away. Sometimes we are interested in slightly more subtle statistics such as number of fouls. In such cases, we could sit through a season's worth of games and systematically note the fouls, goals, final scorelines, etc. However, in many cases, this would be a waste of time because those statistics are already gathered and archived. When we want to access this sort of data, it is easier simply to go to a source of archived data and analyse it. Archived data facilitate correlational and quasi-experimental research. For example, we might be interested in the relationship between the number of fouls a team commit and the number of goals they score – a positive correlation would suggest that aggressive play is beneficial to a team. Comparison of scores in home and away matches is a quasi-experimental design, because we are looking at the effect of an independent variable (where the game is played) on a dependent variable (the score), comparing two conditions that already exist as opposed to being experimentally set up. Reliable archived data may be extremely useful, as a large body of information can be accessed instantaneously without the time and effort involved in collecting it. However, the key word here is 'reliable'. It is important that you can trust the source of your archived data. Generally, national professional bodies such as the Football Association are highly competent at collecting and recording match statistics. However, local associations or more amateur outfits, such as your university or college magazine, may not be so skilled at data management, and you should be more wary about relying on their archived data.

REVIEW METHODS

Often when you go to the sport psychology literature, you find, as well as papers describing individual studies, review papers that aim to overview a field of research, perhaps attempting to reach conclusions about what the bulk of studies say about an issue. Some research reviews are relatively informal – rather like the way issues are tackled in this book, with a selection of relevant studies and their findings being described. Typically, these papers finish with a tentative conclusion about what the bulk of studies point toward and identify directions for future research. However, two formal review methods are worth looking at in more detail.

Systematic Review

A systematic review is, as the name suggests, rather more systematic than an informal review. Whereas informal reviews may aim to provide a general overview of the state of play in a field, systematic reviews tend to have one or more highly specific aims – for example, to identify the most commonly used or most effective psychological strategies with which to intervene in a sporting situation. They are most useful when there has been a large volume of research in an area, but results are variable and overall conclusions are different to reach. The first stage in conducting a systematic review is to define precisely the area that is being researched and to gather as many studies as possible that seem relevant to that issue. Typically, this is done by manual searches (going through the journals in a university library), electronically by keyword searches of databases such as PsycINFO, and by consulting experts. In some fields, this stage can generate several hundred studies; however, sport psychology is a relatively small

discipline, and usually a more manageable number will be turned up. The next task is to cut down the number of studies being examined. There are two parts to this. First, studies that appear from their titles to be relevant but in fact have a different focus are discarded. Then more rigorous criteria are applied to eliminate studies that are relevant to the research question but not methodologically up to the highest standards. This is the most tricky part of a systematic review; by deciding that a particular approach to researching a problem is not appropriate, you may find that you are taking a leading researcher or team of researchers out of the reckoning altogether. Finally, a small number of studies are left that focus precisely on the issue being examined and have been carried out to the highest standards. Looking at their findings, it is possible to come to a conclusion about what the research in this field shows.

Meta-analysis

If systematic review is a qualitative method of arriving at overall conclusions from large numbers of studies, meta-analysis is its quantitative equivalent. A large proportion of sport psychology research involves small samples studied in a particular situation, which may or may not generalise more widely. Meta-analysis involves combining the results of a number of smaller studies, weighting each for sample size, and arriving at an overall figure. For example, we might have 20 small-scale studies concerned with the effectiveness of team building in boosting team performance. Combining their results can have several benefits. First, we end up with a large sample size encompassing a good range of situations. Second, the statistical method of meta-analysis expresses findings as an effect size. This allows us to see just how powerful are the benefits of team building. Effect size is expressed in standard deviations, and plotted on a normal distribution curve.

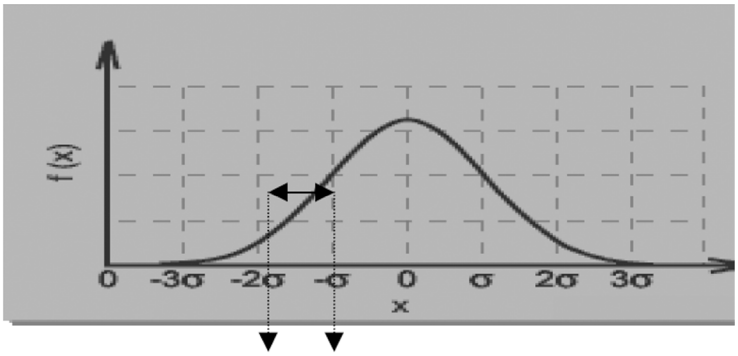


Figure 10.2 An effect size of one standard deviation.

For example, in Figure 10.2, meta-analysis shows a shift of one standard deviation. A psychological intervention with an effect size of one standard deviation would move an athlete or team, on average, from the 2nd percentile (that is, the bottom 2% of the population) to the 34th percentile, putting them in the top two-thirds of the population. Thus, this would be highly effective.

Discussion of Review Methods

Systematic review and meta-analysis have been a tremendous step forward in understanding the factors affecting sporting outcome and the success of various psychological interventions. Small-scale studies, rather that being limited in usefulness by their size and the specific situation in which they were conducted, become part of a greater whole. However, there are important limitations to both techniques. First, the validity of the results depends on the quality of the data analysed. As computer programmers say, 'garbage in, garbage out'. Combining the results of methodologically poor studies may simply compound the problems of each. Although the researcher can try to select the 'best' studies, in practice there is never universal agreement on which studies are in fact the best. Moreover, there is a serious risk of bias in the selection of studies, meaning that reviewers or metaanalysts can influence their findings (unconsciously or deliberately) by favouring one research tradition over another. The knack of using systematic reviews and meta-analyses effectively is to be able to look at the selection criteria of the studies included and decide for yourself whether they are fair.

Chapter 4

Training Methods and Feedback

TRAINING METHODS

TRAINING: MEANING AND CONCEPT

We would like below to present the Pro-Skills training concept as devised by the European project group. As already mentioned, we do not offer a standardised training programme. Different groups of socially disadvantaged individuals have very different characteristics and needs which have to be taken into account and with which the flow and design of the training course, selection of the materials and exercises need to be coordinated. This training concept offers a good theoretical grounding as well as guidelines relating to the goals, content, methods and general framework for a Pro-Skills training course. For practical illustration, you will find reports on the four pilot training schemes in the following chapter.

Training Goals

The Pro-Skills training concept aspires to achieve the following with the participants:

- ***Motivation:*** **The training course would like to inspire interest and motivation for lifelong learning in the participant.**
- ***Human rights:*** **Participants shall become sensitized for their right to education and equal access to educational offerings.**
- ***Recognising own opportunities:*** **Participants will be made aware of the opportunities available to them to further their education and change their life.**
- ***Taking personal responsibility:*** **Participants will no longer feel they are guilty and victims of society; they will learn not to accept this role if they have been assigned it by others.**
- ***Recognising own resources and strengths:*** **Participants are to recognise their existing resources and strengths and develop ideas as to how they can enhance them and acquire new ones.**
- ***Acquiring skills:*** **Participants will actively upgrade their skills and be given the opportunity to experiment with new skills and behaviours in the protected environment of the training course.**
- ***Self-worth and self-efficacy:*** **The training course aspires to support participants'**

sense of self-worth and instil in them the feeling of self-efficacy which is a fundamental precondition for the remainder of the learning process.

- *Empowerment for self-regulated learning:* Participants will be empowered to plan and implement their own individual learning process independently and on their own authority.
- *Equal access to educational offerings:* Participants will be helped to find equal access to formal and informal educational offerings.

Training Content

The specific content of the training course depends on the attributes, needs and prior knowledge of the target group in question. In turn, Pro-Skills offers training modules containing materials and exercises relevant to many and diverse aspects and topic areas. There follows a description of the three core training modules. In each case, the Pro-Skills toolbox refers to selected materials and exercises that have been collated by the project partners and are deemed to be good practical examples. You are also welcome to contact a project partner in your own country and request additional material in your own national language. We will also be happy to advise you on how to design your own training projects. We would like to point out from the outset that many basic skills are interlinked and that categorising them as personal, social and self-management skills is not always clear-cut.

Personal Skills

What we mean by personal skills is the ability to reflect on and regulate internal concepts and processes such as emotions, cognitions and one's own identity.

Aspects of personal skills are:

- *Emotions and emotion regulation:* The ability to perceive and express one's own feelings and deal appropriately with them;
- *Cognition:* Self-reflection, realistic self-assessment, overcoming problems, perception of one's own desires and goals, identifying barriers and resources, goal-setting and decision-making;
- Identity regulation and self-worth, self-confidence and self-efficacy.

Social Skills

Social skills are abilities and behaviours that help to direct the focus of one's own behaviour away from one's own self towards a shared alignment with other individuals. Socially competent behaviour combines the individual's goals with the values and goals of a social group.

Aspects of social skills are:

- *Cooperation and ability to work in a team:* Openness and tolerance, sociableness, use of social resources, conducting negotiations, leadership skills, intercultural skills;
- *The ability to communicate:* Language skills, active listening, feedback, empathy, giving and receiving recognition;
- Conflict resolution/ the ability to compromise;
- Group dynamic processes.

Self-management Skills

Self-management skills are crucial to successfully planning and implementing activities. Each activity – if it is done more or less consciously – is based on a sequence of cognitive and active steps. Psychological theories deal in detail with the cognitive processes.

With regard to learning processes, the following steps can be distinguished:

- ***Goal-setting:*** **The individual must set a specific learning goal. The overriding goal may for example be earning one's living, a higher standard of living or a higher level of educational attainment. What is now needed is to define interim goals en route to the higher-level goal, which in turn requires additional cognitive and active processes to be performed.**
- ***Calculating resources and barriers:*** **The individual has to weigh up resources such as time, money, social support and resolve practical problems such as childcare during a training course, reaching the event venue and suchlike. Weighing up resources and barriers can influence which goals are chosen.**
- ***Effective planning of the project:*** **The individual develops a sort of work plan as well as a realistic timetable having regard to the resources available and the existing barriers.**
- ***Step-by-step implementation:*** **The planned steps of the activity now have to be successfully implemented in the correct sequence. To this end, resources have to be mobilised, obstacles overcome and timetables and deadlines adhered to. In the process, further obstacles and questions may surface which were not previously discernible or had not been taken into consideration. The individual must respond flexibly to these circumstances when selecting techniques and using resources so as to achieve their interim goals.**
- ***Maintaining motivation:*** **Putting the steps the activity entails into practice may take some time and require unforeseen obstacles to be surmounted. To achieve this, the individual requires patience and stamina as well as constant motivation.**

TRAINING: PRECONDITIONS AND FRAMEWORK

Training courses for the socially disadvantaged are not significantly different from other training courses if modern didactic principles are taken into account. However, this target group requires greater didactic and educational expertise on the part of the trainer. Motivation, group dynamics, communication and cultural aspects assume greater prominence. In particular, the trainer needs to think about the perceived balance of power if he wishes to empower individuals who not infrequently carry the stigma of powerlessness.

Three interacting components of the training course mutually influence one another: The trainer, the participants and the training course itself. In addition to these principal actors, the situational context should not be overlooked. We would like to address the above-mentioned components in more detail below.

The Trainer

In the following pages we would like to shed more light on the trainer's skills, characteristics and tasks which we consider to be necessary for positively and successfully implementing this training concept for the socially disadvantaged. We are aware that we are portraying an optimal picture and thereby setting high standards. It seems to us to be important to strike a balance between the maximum amount of available staffing resources that can be employed and the minimum number of personnel required to ensure the quality of the training course. Nevertheless we would like to encourage small institutions as well to conduct a training course such as this. Before we turn our attention to the characteristics of the trainer, we would like to discuss the preferred number of trainers to implement the training course.

Individual Trainer or Team

Is it enough to have one single specialist available to implement the training course or is it necessary to work in a team? Our training concept aims to develop different skills areas using diverse methods which require the trainer to possess multiple skills. We would like to mention that we recommend training teams of at least two people for any type of training course.

There are many reasons for this:

- Implementing an interactive training course and coordinating the group requires a great deal of work, especially if the training course is to be designed to be interesting and maintain the participants' motivation. Nobody can deliver 100% performance throughout the entire day.
- It requires very different capabilities and skills to implement a training course and coordinate a group of participants. Nobody is perfect – a number of trainers can complement one another's strengths and specialist skills.
- To ensure that flexibility is designed into the training schedule and that the course is tailored to the participants' needs and resources, one needs to look at the entire sequence of events and processes as they relate to group dynamics.
- As with every human, trainers and participants as well are influenced by sympathy and antipathy. It would be regrettable if the training were to miss its mark because a participant could not get on with the trainer as an individual. Employing a training team increases the chance of each participant finding a contact person he can trust.

What appears to be optimal is:

- An interdisciplinary team in which different professional groups complement each other's skills and expertise;
- A team comprising different characters and both sexes;
- Including an individual who is familiar with the target group and its life situation.

It goes without saying that forming such an ideal team is not always easy, especially if the training course is being staged by a small institution. In this case it may help to cooperate with other institutions. When we talk about "the trainer" below, what we invariably mean by this is the option of a training team as well.

Skills and Knowledge

The trainer requires a number of fundamental skills and background knowledge enabling him to implement the training course effectively and successfully. A number of these skills are necessary for any training course but assume particular significance when dealing with the socially disadvantaged target group, especially if the latter are carrying the baggage of adverse previous experience with conventional education systems.

From our perspective, the following skills and knowledge are of particular importance for this training concept:

- **Sensitivity to cultural aspects (in particular to the target group's social culture)**
- **Communication skills**
- **Moderating and organisational skills**
- **The ability to cooperate and work in a team**
- **Background knowledge of group dynamics processes**
- **The ability to excite and maintain the participants' motivation**
- **Observation skills (observing group dynamics and the entire training process**
- **The flexibility to adapt the training course to the relevant participating group and its needs**
- **Expert knowledge of (interactive) educational approaches**
- **Expert knowledge of lifelong learning**
- **The ability to encourage participants to get involved and take an active part**
- **Knowledge of and methods for planning learning processes**
- **Practical experience of staging training courses**
- **The awareness of one's own value system**

In summary, our conclusion is that the trainer should have completed basic pedagogical, social or psychological qualification.

Experiences With and Attitude Towards the Target Group

Sensitivity to cultural background is an additional important precondition the trainer should possess. To align the training course with the relevant target group, the trainer requires solid background knowledge of the target group's life situation, needs and resources. If he does not have any personal experience of dealing with the target group, it can be helpful to establish advance contact with someone representing the target group's interests or even to integrate them into the training team. Personal contact should be established with the participants a few days prior to the training course and an interview of sorts organised in which questions can be asked about the participants' specific expectations of the training course. Based on this, the trainer can develop the necessary empathy for the target group. In order to be able to work effectively with it, the trainer requires a certain degree of sympathy for and interest in the target group and should show tolerance for the participants' life experiences and values. Self-regulated learning in terms of empowerment can only be achieved if the trainer does not foist his own values and perspectives on the participants. Instead, the participants should be engaged with on their own ground and be able to contribute their own experiences. The trainer can explain his own attitudes and offer new or complementary

value concepts but should never present these as the "only true" point of view. The trainer supports the participants in devising new goals and skills by themselves; he is a sort of coach but not a leader. It seems to us to be very important that the "balance of power" between trainer and participants remains in equilibrium. What this requires is for the trainer constantly to reflect on his own influential position and the socially disadvantaged situation of the participants.

The Trainer's Tasks

The trainer is responsible for the following general aspects of the training course:

- **A clearly defined framework and clear and realistic objectives should be made transparent for the participants.**
- **The trainer should work with the participants' resources and align the training course with their experience and previous knowledge.**
- **He ought to observe and evaluate the training process and tailor it to the participants' needs if so required.**
- **The participants should be able to comprehend the training process so that they can appreciate their experiences within the group.**
- **The trainer should be aware of his role and in particular of his boundaries within the training course context (e.g. education vs. therapy).**
- **Linked to this, he should collaborate with other organisations and, if necessary, make contact with institutions and experts capable of supporting participants with other goals and questions.**

The Training Course

The training course can follow particular principles to meet participants' needs and to ensure a positive and productive atmosphere.

Trust

It is very important for the participants to feel accepted and to develop trust in the trainer and training.

This can be fostered by the following aspects:

- **Training should always take place under the aegis of a known organisation or institution and not under the personal responsibility of an individual trainer.**
- **It can be helpful for participants to get to know the trainer and the premises before training commences. As a result they will be familiar with the setting and will already feel somewhat more confident when the training gets under way. Individuals who do not feel confident can cancel their participation in the training without losing face.**
- **The participants should receive detailed prior information about the content, techniques and rules of the training course.**

Acceptance and Good Atmosphere

A good atmosphere within the group and mutual acceptance between participants are essential for staging a successful training course, especially when we are working with target groups who are familiar with rejection and social exclusion in their day-to-day lives.

This requires a number of basic rules:

- **The group atmosphere has first priority. Conflicts between participants should be discussed immediately. Quite incidentally, these situations lend themselves to practicing social skills in a practical context.**
- **A number of basic rules should be agreed at the beginning of the training course, for example feedback rules, accepting different opinions and previous experiences etc. Depending on the group and timeframe, these rules can be developed together with the participants.**
- **Training should be fun. Sufficient time should be scheduled for breaks, relaxation or games and exercises to lighten the atmosphere.**

Take Account of Participants' Needs

The training course should take account of the participants' needs and specific characteristics:

- **When the training course gets underway, participants should have the opportunity to express their needs and expectations.**
- **Participants should be actively involved in designing the training course. In the process they can be helped to identify and select their learning goals for the training course themselves.**
- **The training course design and techniques should be consistent with the target group's cultural and social background. Participants should be able to introduce their cultural identity.**
- **The training course content and techniques should tie in with the target group's previous knowledge and everyday life.**
- **Participants need to be motivated and empowered to transfer their newly acquired skills to everyday life and try them out in "real" situations.**
- **The learning process should envisage small steps from the familiar to the unfamiliar and from simple to more challenging material. It is the trainer's responsibility to ensure that each participant is able to follow the learning process.**
- **The participants' questions and expectations should be answered.**
- **If possible, the participants should be able to continue their learning process after the training course. For example, this can be in the form of an ongoing training course or by group meetings for exchanging information.**
- **The results and learning successes should be acknowledged upon conclusion of the training course. Firstly, respect should be shown for the participants' commitment and successes. Secondly, the participants should receive a form of certificate or written reference that they can specifically use for their own purposes (e.g. applications).**

The Participants

Not only the trainer and training course but the participants as well should satisfy certain fundamental criteria:

- **So that the participants really can benefit from the training, they need to**

possess a modicum of capabilities enabling them to interact, comprehend and learn. This means for example that there has to be a certain command of the language in order to ensure communication.

- The participants must be motivated to take part in the training course and exercises. They should be open to learn new things and for the possibility of personal development or change.
- This presupposes that the participants' involvement in the training course is voluntary.
- One aspect which cannot categorically be answered is the question about the group's homogeneity or heterogeneity. A homogenous group may be easier to handle, the course content can be tailored to specific questions relevant to many or even all the participants. In a heterogeneous group, on the other hand, the participants can benefit from their differences and learn from other people's different experiences and knowledge. It seems advisable to maintain a balance between diversity and similarity and thereby take account both of the social learning objective while also enabling participants to feel quickly at home in the group. In the same manner, no one-size-fits-all statement can be made about the participants' familiarity and anonymity. Anonymity affords the participant the opportunity to speak and behave freely without the others having a preconceived opinion about him and without misgivings about how one's behaviour on the training course will affect existing relationships. On the other hand, depending on the target group, participants in a familiar peer group can operate in a more free and less inhibited manner and provide one another mutual support during the training course. The trainer has to weigh up the influence of dependencies and strong social ties within the training group and select the set-up that seems to him to make the most sense in terms of promoting individual development.
- Thought should be given to exclusion criteria before and during training. Depending on what the training course purports to achieve, physical or mental illnesses, dependency, substance use etc may have a counterproductive effect on participation in the training course.

Contract Between the Trainer and the Group

It can be helpful to conclude a contract between the trainer and the participants. This contract defines the training course's overriding goals, states what both parties are to contribute to the training and can lay down from the outset a number of fundamental rules and obligations (e.g. regular participation, punctuality or the like). This type of agreement is an initial contribution to ensuring that participants themselves assume responsibility for the training course.

Training Context

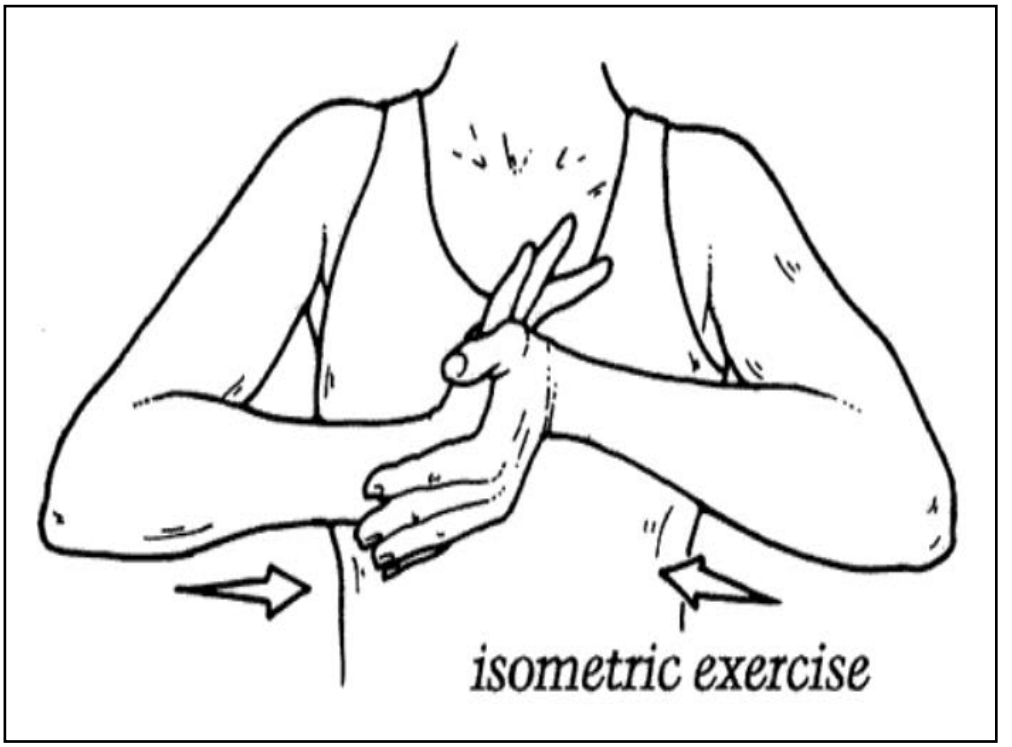
A number of other underlying conditions can influence the way a training course proceeds. The premises are of particular importance.

They should:

- Be readily accessible for the target group (travel costs and distance).

- **Be known to the participants and accepted by them.**
- **Provide all the necessary resources for the training course.**
- **Provide for complimentary or low-priced meals and overnight accommodation if required.**
- **Be independent of institutions that the participants associate with other obligations (e.g. therapeutic centre, job centre or police station).**

Isometric Exercises



Isometric exercises allow you to perform flat belly exercises as well as full body workouts anytime and anywhere. If your like a lot of people you can find yourself thinking up all kinds of excuses not to do your strength exercises. The most popular reason is having a busy schedule. With today's busy lifestyle it is often difficult to find time or the energy to train regularly. Even if you have a home gym, a tight schedule might still not allow you to workout. There is a way to strength train your muscles without any equipment what so ever. And it will only take you 10 seconds at a time out of your busy schedule. That's right, 10 seconds is all you need to perform an exercise. If you

do this 10 times during the day, you have yourself a total body workout including your belly muscles. They're called Isometric Exercises and they might be what you need when you know you won't have time to train that day. Now they're not a total replacement for traditional abdominal or total body training but isometrics are a very effective alternative and addition.

What Are Isometric Exercises?

The official definition is: Any activity in which there is no visible change in muscle length in which the muscles exert force. For example, carrying a bag of groceries or pushing up against a wall. They allow your muscles to get stronger through resistance without having to move. It works on the overload principal: In order to build strength, you must work your muscles harder then they are used to. This will result in your muscles responding by adapting and becoming stronger. If you gradually increase the weight or resistance, the muscle will grow in size, strength and endurance. Just by trying to move a weight or object long enough will make you stronger. You don't have to move the weight or your muscles to make them respond. There are three ways that a muscle can contract to make it build strength.

- ***Isometric Contraction:*** **Like I explained above is when your muscles don't move but are exerting maximum force. A very popular isometric exercise is the plank pose.**
- ***Eccentric Contraction:*** **This is when your muscles are in a lowering part of an exercise. For example, when doing stomach crunches, it's when you lower your shoulders back down to the floor.**
- ***Concentric Contraction:*** **Occurs when your muscles contract by getting shorter. Like in the crunching or lifting part of stomach crunches. A term that is often confused with Isometric is Isotonic. Isotonic movement is when you lift weights or resistance bands and your muscles are moving. Making them go through a full range of motion in which the amount of force the muscle generates changes throughout the movement.**

Benefits of Isometric Exercises

There are several reasons why you should include isometrics to your regular flat belly routine. Isometric exercises can be done without any kind of machines or equipment anytime, anywhere. If you have 10 seconds, you can work a muscle group without no one even noticing you are using isometric training. They also help create endurance in your muscles to handle everyday activities. Like when you are holding a baby, carrying boxes or grocery bags or squatting down for long periods. Isometrics will prepare your muscles to handle these situations and reduce the risk of injury. They activate more muscle fiber. When you place maximum force on your muscles, they activate and train all the fibers which will help your muscles get stronger faster when you weight train. The convenience and time saver cannot be overlooked. Doing isometric exercises 7 seconds at a time during the day can substitute your workout. Check out the worlds fastest and most efficient isometric workout. No time to fit in a good ab core workout, no problem. Sit in a chair with your feet off the floor about 6 inches, suck in your belly button while tensing your abs. When that becomes too easy,

simply push down on your knees with your hands while forcing to keep them from touching the ground. These are called abs isometrics and they will give your core muscles a good workout. Pressing your palms together as hard as you can will work your arms, shoulders and chest. To work your neck and upper back muscles, cross your fingers behind your head, push your head back in your hands using your neck muscles while trying to push your head forward with your hands. Find a wall to push up against or something you can pull against that won't move like a door jam. The only thing you need to remember is to use as much force as possible for 10 seconds. Using maximum force will give you all the benefits an isometric workout has to offer.

Disadvantages of Isometric Exercises

Warning: Consult Your Doctor! Isometric contraction can produce sharp rises or spikes in blood pressure because they restrict blood flow. If you have a history of high blood pressure, heart disease or are pregnant, isometric exercises can be dangerous for you to perform. If you do an exercise and display any of the following symptoms: headache, dizziness or nausea you should stop immediately and consult your doctor. Another disadvantage is that each hold you perform only strengthens that muscle in that position and not through its full range of motion. This means when you push your palms together you will only build strength in that position or within 20 degrees of the angle of your elbows. However, as I stated earlier, they involve all the muscle fibers which will enable you to build strength faster when you do lift weights. Never hold any position at maximum force for more than 10 seconds and don't hold your breath. Breathing at a normal pattern will ensure your working muscles keep getting the oxygen they need.

Incorporating Isometric Exercises

In order to ensure that you are placing maximum overload on your muscles, you can incorporated isometrics in your eccentric and concentric strength training exercises. There are a few ways you can do this using isometric contraction. You can pause for a couple of seconds near the top of a movement or near the bottom. This will create an overload and you will benefit from all contractions making it more effective. It is a good idea to vary the point where you pause in the range of motion at every workout. For example, when doing stomach crunches, pause at the top of every rep on you first set. Then on your second set, pause just before you return to the starting point (shoulders about 2 inches from the floor). For more information and videos check out the best isometric ressource site we found "Strong in 7 Seconds". It's filled with the best information and a complete program to sculpting your physique. Be sure and pick up a copy of the No.1 Ranked training guide – 7 Seconds to A Perfect Body, The Scientifically Proven Method for Transforming Your Body in Just Seconds! Over 250 pages and filled with more than 100 photos it will transform your body from your face down to your toes, sculpting your physique and letting you develop astonishing strength with just seconds of exercise. Now that you have a good grasp of isometric exercises do them everyday and add them to your regular routine.

Isokinetic Exercise

Even some of those who work out every day may not know about isokinetic exercise. Many of us have no idea what this means. Today's technology has produced popular definitions of isokinetic exercise that can help individuals find different and better ways to train muscles.

What Is Isokinetic Exercise?

Within the traditional array of different kinds of muscle contractions, what scientists refer to as isokinetic contractions are very rare. However, when talking about using various fitness machines, many in the fitness industry have begun to refer to isokinetic exercise as a variable resistance type of training. According to this definition, isokinetic exercise is an exercise that provides a variable resistance to a constant limb movement. These kinds of adaptive exercises require equipment that can quickly accommodate changes in resistance.

Isokinetic Exercise Equipment

One example of an isokinetic exercise is a stationary bike that responds to a constant leg movement by the user. The resistance offered by the stationary bike may vary, while the speed of limb motion and subsequent revolutions per minute stays the same. Some fitness trainers refer to an active dynamometer which can also provide for isokinetic exercise training. In gyms and health clubs, isokinetic equipment might be present in the form of elastic bands, exertubes or specialized machines.

Benefits of Isokinetic Exercise

Because the variable resistance in these types of exercise equipment is so controlled, it helps to prevent a lot of different kinds of injury for users. Isokinetic exercise also offers more direct response and customization of challenges to a body's momentum. This kind of exercise and gear can be especially helpful after injury, where participants want to take care not to strain muscles with excessive resistance.

Contrasting Exercise Types

Traditional types of exercise include isotonic exercise, where tension or resistance remains unchanged. Dumbbells and other free weights are good examples of this kind of exercise, where bicep curls and other movements take place against a static resistance.

Isotonic exercises require two specific types of muscle contractions according to the load placed on the body:

- **A concentric muscle contraction occurs when the body is able to manipulate a weight load in a certain direction.**
- **An eccentric muscle contraction occurs when the weight is too much for the body, and the muscles focus on distributing impact, rather than raising or lowering a weight load.**

Another kind of conventional training is isometric training. In isometrics, there is no movement, and the muscle length and joint angle do not change. Someone holding free weights while not in motion is an example of this kind of training.

The Future of Isokinetic Exercise

As more adaptive resistance equipment becomes available on a broader scale, fitness experts continue to look at how isokinetic exercise can be useful for specific target audiences, with attention to gender and age. It may be that tomorrow's fitness schedules will include more of this kind of customized activity for fitness participants who can use these adaptive training methods to get muscles prepared for specific athletic and recreational activities.

Continuous Training

Continuous training is when low- to mid-intensity exercises are performed for more than 15 minutes without resting intervals. Generally, this type of training is used to prepare the body for longer endurance activities, such as a marathon or triathlon, and allows the body to work from its aerobic energy stores to build muscles. In contrast, interval training allows the body to rest between periods of activity. Some studies have shown that interval training allows the body to sustain activity up to four times longer than continuous training does. Chief benefits of continuous training include burning fat, building muscles, and increasing maximum aerobic potential. As with all forms of exercise, the primary benefit of continuous training is general health and fitness. There is some debate as to which type of training method is better for endurance event training. Continuous training, however, does provide measurable results for improving endurance even if it is at a slightly lower performance level. It can improve the cardiovascular system, as well. Most athletes typically should not jump into continuous training since the body needs to be prepared for this kind of activity. Someone who is considering continuous training for aerobic and weight loss benefits usually needs to take the current fitness level of the body into consideration. It generally is recommended that an athlete begin continuously training for 12 to 15 minutes and should add two minutes for every week that the exercise routine is maintained. Increasing the duration of the exercise beyond two minutes can increase the risk of injury. This level of continuous exercise should plateau between 20 and 25 minutes. Once this level of training has been maintained for six or more months, the athlete usually can then consider increasing training. Greater levels of continuous training are generally reserved for long distance runners, cyclists, and swimmers. The athlete typically should focus on the time he or she is spending doing the activity and not the speed of the exercise. By keeping speeds low, the athlete decreases the chance of injury while building the specific endurance related to his or her sport. When continuously training at this intensity, the athlete must still give the body sufficient time to recover, as well.

Interval Training

Interval training is basically exercise which consists of activity at high intensityfor a period of time, followed by low intensity exercise for a period of time. These 'sets' are repeated.

Sprint Intervals

The high intensity portion are called Sprint Intervals. Sprint intervals are measured

either by time or distance. They can be as short as 15 seconds in activities like HIIT or as long as 20 minutes for aerobic interval training. An example of a Sprint Intervals would be running at full pace along a stretch of field for 30 seconds, another would be an indoor cyclist spending 15 minutes simulating a climb on the bike.

Rest Intervals

The periods of recovery are called Rest Intervals. During an rest interval athletes do not stop the activity but generally exercise at a low intensity which allows the body to recover from the sprint interval. The length of these rest intervals are determined primarily by your fitness levels and the type of the sprint interval. The intervals are important; the basis of the interval training is to ensure that your sprints are done at an optimal intensity, without sufficient rest your interval training will resort back to an aerobic type of activity.

Intensity

The intensity of the sprint intervals is how hard you push yourself during the sprint. For simplicity sake the intensity is usually measured on a scale of 1 to 10, 1 being no effort whatsoever while 10 represents the maximum effort possible. Now this is a completely personal scale depending on your own fitness levels and the type of interval training. For example a seasoned athletes may be training on improving his speed work, the sprint lasts for 15 seconds and his '10' may be a flat out sprint with the athlete going as fast as he or she can. Another example would be someone who has not exercised in a while decides to do intervals while walking; a 1 minute walk at a brisk pace may leave the person completely out of breath. This would be their 10. Now take the original athlete who sprinted for 15 seconds and change the interval to 5 minutes. They couldn't maintain the same original 15 seconds pace for 5 minutes, but the maximum effort still represents a 10. A '10' is merely the maximum amount of effort a person can safely expend for that particular interval.

Fartlek

It has a strange name but this can be one of the toughest workouts you'll ever try. Fartlek cardiovascular training is a form of interval training, or HIIT. It is considered an advanced technique but can be used by anyone. Fartlek conditioning can be applied to any form of cardiovascular exercise, and it is also considered one of the greatest endurance exercises. Used primarily by long distance runners, Fartlek's training benefits are now being realized in the fitness community as well. Endurance exercises such as Fartleks are an outstanding way to burn up some serious calories while improving your cardiovascular stamina. This technique can be a great way to increase running speed too, and it is excellent for endurance conditioning. It will also raise your anaerobic threshold, giving you the ability to train longer and harder. How is Fartlek training different? With regular interval training, the participant alternates periods of high and low intensity in fixed time segments. Fartlek interval training differs from other training methods in that there are no predetermined intervals and there is no predetermined pace. It allows you to run at any pace and distance you wish. You stagger high, medium, and low intensities for as long as you like. Combine interval training with your workout

routine for a serious 1-2 punch. This approach can be used outdoors or indoors. While it was developed by runners, you can utilize this technique with your favorite cardio exercise. Of course with this freedom to choose pace, time, and distance you must be conscientious of your level of exertion. You will need to closely monitor your breathing and heart rate. You also need to be honest with yourself to ensure you're working hard enough. This freedom also allows you to enjoy the training session more. Interval training is more structured and deliberate; whereas Fartlek conditioning lets you explore your own ability level and aerobic capacity. I can assure you that you will not be bored with this type of training.

Circuit Training

Circuit training is an excellent way to improve mobility, strength and stamina. The circuit training comprises of 6 to 10 strength exercises that are completed one exercise after another. Each exercise is performed for a specified number of repetitions or for a set time before moving on to the next exercise. The exercises within each circuit are separated by a short rest period, and each circuit is separated by a longer rest period. The total number of circuits performed during a training session may vary from two to six depending on your training level (beginner, intermediate, or advanced), your period of training (preparation or competition) and your training objective.

Planning

Identify on paper 3 to 4 circuits of 6 to 10 exercise that can be performed with the available resources. In each circuit try to ensure that no two consecutive exercises exercise the same muscle group. e.g. do not have press ups followed by pull ups. The exercise circuit should be set up so that you work each body part as follows: Total-body, Upper-body, Lower-body, Core & Trunk, and Total-body etc. For each circuit I have a set of linoleum squares (6 inches by 6 inches) with an exercise written on each that I lay by the equipment to indicate to the athletes the required exercise at each stage of the circuit. You could use plain card or paper and include an explanation as to how to perform the exercise, duration and recovery It is important to conduct a warm up at the start of the session and a cool down at the end of the session.

The following are examples of exercises that can be used in a circuit training session:

- **Upper-body**
  - **Press ups, Bench dips, Pull ups, Medicine ball chest pass, Bench lift, Inclined press up**
- **Core & trunk**
  - **Sit ups (lower abdominals), Stomach crunch (upper abdominals), Back extension chest raise**
- **Lower-body**
  - **Squat jumps, Compass jumps, Astride jumps, Step ups, Shuttle runs, Hopping shuttles, Bench squat**
- **Total-body**
  - **Burpees, Treadmills, Squat thrusts, Skipping**

Example Circuit Training Sessions

Exercises:

- **Treadmills, Press ups, Squat Jumps (forward astride), Sit ups (bent knees feet on the ground), Squat Thrusts, Bench Dips**

Exercises:

- **Treadmills, Press ups, Squat Jumps (forward astride), Sit ups (bent knees feet on the ground), Squat Thrusts, Bench Dips, Shuttle runs, Back extension chest raise**

Duration:

- **20 to 30 seconds work on each exercise with a 30 second recovery between each exercise**
- **3 to 5 sets with a 3 minute recovery between each set**

The duration can be based on time (e.g. 30 seconds) or set to half the number of repetitions of the exercise the athlete can complete in 60 seconds of 100% effort. If training is based on the number of repetitions then regular testing (e.g. every 4 weeks) will need to be carried out to determine the maximum number of repetitions that can be completed in 60 seconds for each exercise. Training can be based on a four week cycle comprising of an easy week, medium week, hard week and test/recovery week. The workload can be varied by changing the number of exercises, duration, sets or repetitions and recovery time. A selection of upper body, core and trunk, lower body and total body exercises are available on the Circuit Training Exercises page.

Advantages and Disadvantages

Advantages of circuit training are:

- **Develops strength and endurance**
- **Appropriate form of training for most sports**
- **Can be adjusted to suit age, fitness and health of the athlete**
- **Exercises are simple enough to make each athlete feel a sense of achievement in completing them**
- **A wide range of exercises to select from which will maintain the athlete's enthusiasm**

Disadvantages of circuit training are:

- **Many exercises require specialised equipment - e.g. gym equipment**
- **Ample space required to set up the circuit exercises & equipment**
- **In general can only be conducted where appropriate facilities/equipment are available**
- **Use of additional equipment requires appropriate health and safety monitoring**

Stage Training

In stage training, the required number of repetitions and sets are performed for each exercise before moving to the next exercise. A rest is allowed between each set (e.g. 30 seconds). The number of repetitions can be based on time (e.g. 20 seconds) or set to one third of the number the athlete can complete in 60 seconds of 100% effort. The number of sets - five to eight.

Example sessions from Owen Anderson

Warm up with 10 to 15 minutes of easy jogging, swimming or cycling, and then perform the following exercises in order. Move quickly from exercise to exercise, but do not perform the exercises themselves too quickly (do not sacrifice good form just to get them done in a hurry).

- **Run 400 metres at current 5k race pace (if you're a swimmer, swim 100 metres at high intensity; if you're a cyclist pedal for 1600 metres at a high rate of speed)**
- **Do 5 chin-ups**
- **Complete 36 abdominal crunches**
- **Perform 15 squat thrusts with jumps (burpees)**
- **Do 15 press-ups**
- **Complete 30 body-weight squats (fast)**
- **Run 400 metres at 5k pace again (if you're a swimmer or cyclist, see step 1)**
- **Do 12 squat and dumbbell presses (with 10-pound dumbbells)**
- **Complete 10 feet-elevated press-ups**
- **Perform 36 low-back extensions**
- **Do 15 bench dips**
- **Complete 15 lunges with each leg**
- **Run 400 metres at 5k pace again (if you are a swimmer or cyclist, see step 1)**
- **Repeat steps 2 to 13 one more time (for two circuits in all), and then cool down with about 15 minutes of light jogging, swimming, or cycling.**

Once your fitness and strength have increased so much that the above circuit sessions are no longer challenging, you can then move on to a more challenging circuit workout, as follows: Warm up with two miles of easy running, and then perform the following exercises in order. Move quickly from exercise to exercise, but do not perform the exercises themselves too quickly (do not sacrifice good form just to get them done in a hurry).

- **Run 400 metres at 5k race pace**
- **Complete 8 high bench step ups with jumps**
- **Do 6 plyometric press ups**
- **Perform 3 series of the 6 way lunge with arm drop**
- **Complete 8 reps of the hanging scissors plus double knee raise**
- **Do 12 one leg squats with hops**
- **Perform 8 prone trunk extensions with arm raises**
- **Run 400 metres at 5k race pace**
- **Repeat steps 2 to 8 once more (for two circuits in all), and then cool down with 2 miles of easy ambling.**

A 5k Circuit

Warm up with two miles of easy running, follow with some stretching routines and then perform the following activities in order. Move quickly from exercise to exercise, but do not perform the exercises themselves too quickly (do not sacrifice good form just to get them done in a hurry).

- **Run 4 x 100 metres at close to top speed, with short recoveries**

- **Run 200 metres (or ¼ mile) at 5k race pace.**
- **Complete 20 squat thrusts with jumps (burpees).**
- **Do 15 "side sit ups" on your left side and then 15 on your right. To complete a side sit up, lie on your left side with your left leg flexed at the knee and lying under your right leg, which is straight. Let the left side of your upper torso lie relaxed on the ground, and fold your arms over the front of your trunk. Then, slowly raise your torso with a twisting motion so that you end up with your torso upright and perpendicular to the ground, and your chest and face facing forward. Slowly lower your upper torso back to the starting position on the ground (don't let your upper body plummet downward in an uncontrolled manner!) to complete one rep. Complete 15 sit ups with your left side down and then shift over to the right for 15 more.**
- **Perform 20 lunges with each leg. Do each lunge from a six inch platform or step, so that the forward, lunging foot undergoes an exaggerated downward acceleration.**
- **Run 400 metres at 5k pace.**
- **Do 15 feet elevated press ups.**
- **Complete 15 one leg squats with your right leg and then 15 more with your left.**
- **Perform 30 low back extensions with a twisting motion (I, instead of lifting your upper body straight up as you lie flat on the ground with your belly touching earth, your arms at your sides, and your palms on the ground, lift and twist your upper body to the right during the first rep, lift and twist your torso to the left during the second, to the right during the third, hectic. Naturally, you will need to untwist your upper body each time your trunk moves back toward the ground so that your stomach and chest, not your sides, touch the ground. Always do this rhythmically and smoothly, while maintaining good control.**
- **Run 400 metres at 5k pace.**
- **Carry out 20 bench dips.**
- **Hop on your right foot, covering 20 metres as fast as you can; then do the same on your left foot.**
- **Complete 15 high bench step ups with each leg.**
- **Run 1600 metres at 5k pace.**
- **Repeat steps 3 to 14 one more time (for two circuits in all), and then cool down with 2 miles of light jogging.**

Half Marathon Circuit

Warm up with two miles of easy running, follow with some stretching routines and then perform the following activities in order. Move quickly from exercise to exercise, but don't perform the exercises themselves too quickly (do not sacrifice good form just to get them done in a hurry).

- **5 x 100 metres at close to top speed, with short recoveries.**
- **Run one mile at your goal half-marathon velocity.**
- **Complete 20 squat thrusts with jumps (burpees).**

- **Do 70 abdominal crunches.**
- **Perform 20 lunges with each leg, with your no lunging foot on a step or platform which is about six inches off the ground.**
- **Carry out 70 low back extensions.**
- **Do 20 press-ups.**
- **Complete 15 one leg squats with your right leg and then 15 more with your left.**
- **Run one mile at goal half marathon velocity.**
- **Carry out 30 bench dips.**
- **Complete 15 high bench step ups with each leg.**
- **Jump 100 times in place, getting your propulsive force from your ankles, not your knees, and carrying out the last 30 jumps at an especially quick tempo (for all 100 jumps, don't try for great height - your feet should only come off the ground a few inches; what you're really looking for is quick reaction with the ground, I, minimised ground contact times).**
- **Carry out 30 cross body leg swings with each leg. To do these, lean slightly forward with your hands on a wall (or other support) and your full body weight on your left leg. Then, swing your right leg to the left in front of your body, pointing your toes upward as your foot reaches its farthest point of motion. After this, swing your right leg back to the right as far as comfortably possible, again pointing your toes up as your foot reaches it final point of movement. Repeat this overall motion 30 times before performing 30 reps with your left leg.**
- **Run one mile at goal half-marathon velocity.**
- **Repeat steps 3 to 14 one more time (for two circuits in all), and then cool down with two miles of light jogging.**

Marathon Circuit

Warm up with two miles of easy running, follow with some stretching routines and then perform the following activities in order. Move quickly from exercise to exercise, but don't perform the exercises themselves too quickly (do not sacrifice good form just to get them done in a hurry).

- **Run 800 metres at what feels like 10K intensity.**
- **Complete 15 burpees (squat thrusts with jumps).**
- **Perform 12 press ups.**
- **Do 12 one leg squats with each leg.**
- **Run 800 metres at a little faster than marathon speed.**
- **Carry out 50 abdominal crunches.**
- **Complete 12 lunges with each leg.**
- **Perform 50 low back extensions.**
- **Run 800 metres at a little faster than goal marathon speed.**
- **Do 12 feet elevated press ups.**
- **Do 15 bench dips.**
- **Carry out 12 high bench step ups.**
- **Run 1600 metres at a little faster than goal marathon speed.**

- **Repeat steps 2 to 13 twice more (for three circuits in all).**
- **Cool down with two miles of easy running.**

These circuits build a tremendous foundation of whole body strength and fatigue resistance, both of which are critically important for marathon running. The circuits also improve efficiency while running at marathon intensity and help to raise lactate threshold. Finally, the marathon circuits enhance your ability to run at goal marathon tempo when you are very tired, and they are a tremendous confidence builder.

Alternative Approach

Over the 30+ years as a coach Frank Hourly has experimented with different methods of circuit training and the one that he found gave the best results is called muscle fatigue saturation. The athlete completes three sets of maximum repetitions of each exercise with a one minute recovery between each set and two minutes recovery between each exercise. In the first week, one exercise is done each day, second week two exercises each day, third week three exercises and so on up to the seventh week when 7 exercises are completed each day.

The first week could comprise of:

Day 1 - Press Ups,
Day 2 - Abdominally,
Day 3 - One Leg Squats,
Day 4 - Squat Thrusts,
Day 5 - Chin the Bar,
Day 6 - Step Ups,
Day 7 - Dips.

After the seventh week the seven exercises are completed every other day during the general training phases and then once a week during the specific training phases.

Pace Race

A competitive pace race is a timed race in which the objective is not to finish in the least time, but to finish within the prescribed time and in the best physical condition. In some races, the prescribed time is very narrowly defined and the winner is the competitor who finishes closest to the prescribed time. In other races, the prescribed time is a window and competitors who finish outside the window (too early or too late) are penalized or disqualified. As a rule, pace races use staggered starts.