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DIPLOMA IN SPORTS SCIENCE

(SPORTS PSYCHOLOGY)

Course Materials

Diploma in Sports Psychology

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Introduction *to* **Sport Psychology**

Describing the nature of Sports Psychology is a difficult task because so many different perspectives on the field exist. It is a sub-discipline of Exercise and Sport science as well as sub-area of psychology.

Definition of Psychology

"Psychology is the science of human and animal behavior; it includes the application of this science to human problems" (Introduction to psychology; Tata McG.raw-Hill Publishing Company Ltd; 199.1; P.4.)

Two modern definitions

"Psychology can be defined as scientific study of behavior and mental process" (Psychology; Scott, Foresman and company; 1983; P.4.)

"Psychology is the scientific study of the behavior and cognitive process of individual Organisms Psychology: Scott, Foresman/Little Brown Higher Education; 1990; P.2.

There are four important aspects of those definitions

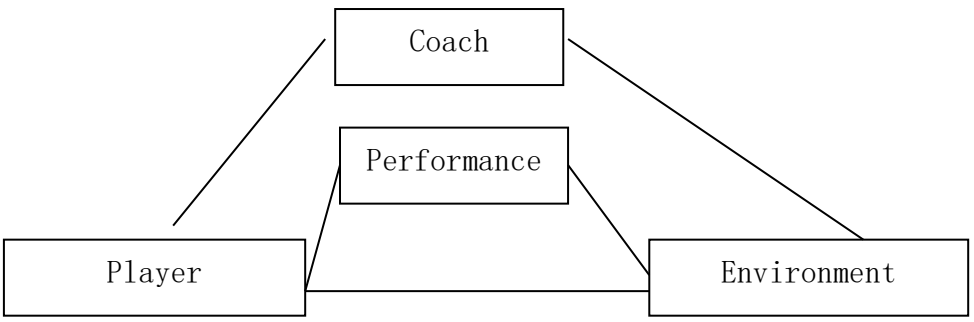
i) Behavior (ii) Menial process (iii) Man & animals (iv) Science.

Sport Psychology is:

" The effect of sport itself on human behavior" (Alderman.1980)
"A field of study in which the principles of psychology are applied in a sports setting" (Cox,1985)

"The branch of sport and exercise science that seeks to provide answers to questions about human behavior in sport" (Gill, 1986)

Sport Psychology is a science. A limited definition of Sport Psychology is that it is the study of human behavior in the context of competitive sport and how behavior (performance) is affected by three primary sources; the sportspersons, the team leader (i.e. the coach) and the environment in which these individuals interact.



Sports Psychology is a sub discipline of psychology.

Sports Psychology is a sub discipline of sport and exercise science.

Scope of Sport Psychology

Sport Psychology, when viewed. as a sub discipline within the larger field of psychology. is defined as an applied psychology or as a field of study in which the principles of psychology) are applied. Not all information in psychology) is equally applicable to exercise and sport. On the other hand, sport psychology is also branch of exercise and sport science. Exercise and sport science is multidisciplinary area. Several areas fall under exercise and sport science such as Exercise and spoil psychology, physical Education, sport Bio-mechanics. Socio-cultural sport Studies. Motor Control and Learning and Exercise Physiology. Exercise and sport Scientist apply selected theories, concepts and methods from the basic discipline to exercise and sport. Sport psychology has slowly and gradually emerged as an independent discipline, which is providing insight. Sport psychology borrows selected relevant information from the associated discipline of psychology, and also develops theoretical models and approaches unique to sport and exercise.

According to American Psychological Association (APA), the scope of sports psychology deals in the following areas-

1. Training in psychological skills of athletes.
2. In the well being of athletes.
3. In the systemic issues associated with sports organizations.
4. In developmental and social aspects of sports participation.

1. **Training in psychological skills of athletes -**

Many strategies and procedures exi.st within the field of sport psychology for addressing the problems faced by athletes and sports participants. Some oft!', psychological skill-training programs include:

- Goal-setting and performance profiling for athletes.
- Visualization and performance planning for athletes.
- Enhancing self-confidence for athletes.
- Cognitive-behavioral self-regulation techniques for athletes.
- Concentration and attention control strategies for athletes.
- I motion management training for athletes.
- Sexual identity issues in sport counseling.
- Aggression and violence counseling in sports.
- Athletic injury and rehabilitation.
- Team cohesion training.

2. **In the well being of athletes-**

- Eating disorders and weight management interventions for athletes.
- Substance abuse interventions for athletes
- Grief depression, loss and suicide counseling for athletes.
- Over training and burnout counseling.

- Career transitions and identity development in sport.
- Interventions to address parental and familial needs involved in youth sports participation.

3. **In the systemic issues associated with sports organizations-**

The role of sport psychology in dealing with associated with sports organization involved resolution of conflict and eradication of confusion amongst administrators, coaches, officials, players, media, families etc.

4. **In developmental and social aspects of sports participation-**

- Moral and character development in sport, and sportsmanship.
- Development of self-confidence, self-esteem and competence in sports.

International committees for sport psychology (ISSP, NASPSPA and AAASP) focus on three areas of applied sport psychology:

1. Health Psychology; 2. Performance Enhancement; 3. Social Psychology

Applied sport psychology involves extending theory and research into the field to educate coaches, athletes, and parents with the goals of facilitating optimal sport involvement and performance. The International bodies offer information in those three focus areas intended for athletes, coaches, parents, and people interested in applied sport psychology.

1. **Health Psychology**

The Health psychology interest area focuses on the role of psychological factors in sport and exercise, particularly as they relate to disease development and remediation, coping with stress, and health promotion. A primary interest the close relationship between mental health and physical health.

2. **Performance Enhancement**

The performance Enhancement/Intervention area utilize research, theory, and practice to improve performance in a variety of exercise, health, and sport settings. This group is also concerned with the effects of sport psychology interventions on the well-being of participants in exercise and sport.

3. **Social Psychology**

The social psychology area addresses: theory, and intervention focusing upon individual and group processes in sport and exercise settings. Social psychological factors are examined as they related to the sport participant, coach, team, and spectators.

Relationship of Sports Psychology with other Sports Science

Sports psychology is the branch of sports science that seeks to provide answers to questions about human behavior related to performance of sports, exercise and physical activities. As a branch of sports science, sports psychology is part of the overall study of human movement also known as kinesiology. Because sports science is multidisciplinary, applied field, and because it occupies the middle of the physical to social continuum, it has ties to all other sub-areas within exercise and sports science. The most prominent sub areas are sports medicine, sports Biomechanics, exercise physiology, sports training and sports nutrition/diet.

1.Relation between Sports psychology and Sports Medicine:

Sports psychology and sports Medicine, both like all other scientific subjects follow the processes of diagnostic observations to identify the areas of problems to be dealt with; follows the processes of analytical interpretations to ascertain with the cause of the problems, and encourages experimentations for furtherance of knowledge. Both follow specific therapeutic systems for crisis management at the field and afterwards during long-term pre-and-post competitive training sessions, and consider the effective planning for rehabilitation of the injured (physically) and/or mentally disrupted player into actual playing condition.

- The science of sport medicine is dedicated to deal with injury and with the process of physical rehabilitation, while sport psychology deals with provisions for crises management when the injured players passes through absolute, despair and solitude. The science of sport psychology is also committed to render services during the phases of rehabilitation to keep the player in a state of readiness to face with newer competitive challenges.

- Menstruation is regular source of stress to most of the female athlete engaged in sports and physical activities all over the world. The specialists in sport medicine deals with this problem under a purview of menstrual distress, menstrual irregularities, and amenorrhea, while the task of sport psychologist is to guide the players facing these crises with their modification of cognitive make-up. Its an actual task of sport psychologist is to educate the players with complex gynecological issues in simpler ways so they can accept the monthly situations as simple usual happenings.

2.Relation between Sports Psychology and Sports Biomechanics;

These two areas of scientific study intersect between each other in specific areas related to movement coordination.

- Performance of majority of the sports involve-balance; maintenance of bilateral coordination; and adequate ability to transfer the body-weight (laterally and back-and-forth). These all are possible with the effective utilization of the core muscles-strength. The subject of sport Biomechanics deals with the issues related to movement disorder. Sport

psychology as a science deals with the mental aspect of these coordinative activities. Actually the feelings and understandings related to these movement coordination issues come under the purview of sport psychology, i.e. the problems related to player's realization of the changes in body-balance, transfer of weight and coordination are discussed. The maintenance of emotional stability in aiding the optimization of all these movements related aspects fall under the purview of the study of sport psychology.

3.Relation between Sports Psychology and Exercise Physiology;

Both of them study the differential roles of human brain and the nervous system in shaping behavior in the field of sports.

- Both of these studies consider cardiovascular (heart-rate-HR), circulatory (blood-pressure BP) processes as the indexes of autonomic activities. The study of exercise physiology is concerned with the pros and cons, and the structure and function of the circulatory and cardiovascular system, while sport Psychology contributes in understanding the I-IR and BP as autonomic regulatory measures as indexes of emotional disturbances, and the detrimental consequences if any. on the performance of sport.

- Both of these studies consider cortical activation (cerebral functioning) as the key to all the sensory and motor processing related to accurate decision-making. But Sport Psychology as such is concerned with the functionality and implications of those Physiological processes in shaping appropriate behavior facing competitive challenges and the adverse consequences, if any. related to the performance outcomes.

4. Relation between Sports Psychology and Sports Training:

- The study of sport training is aimed at achieving peak conditioning required for successful performance, whereas the goal of the study of sport psychology is to identify the specific types of problems (those the player may face) in learning newer techniques, and in practicing those learned techniques to become skillful;
- In training newer skills the coaches and trainers demand adequate attention focus, adequate cognitive ability of the trainees to understand and to learn newer skills-trainings, while the task of the sport psychologist would be. identification of the specific problem areas related to the mental make-up of the trainees and their preparation for psychological skills-training, to cope with those training related problems (faced during practice-sessions).

5. Relation between Sports Psychology and Sports Nutrition/diet:

- The goal of the study of sports Nutrition is the assessment of nutritional status and proper dietary management of the trainees and accordingly dietary -planning is done. This is always done keeping a parity with the training-sessions (for evaluation the players), and pre-competitive

requirements, and post-corn on the training loads given and the related nutritional requirements of the players), and pre-competitive requirements, and post-competition recovery requirements to compensate the nutritional deficits, and to keep the trainers physically prepared for the next phases of training. The task of an expert sport psychology consultant in a training set-up will focus on effective implementation of the dietary-regimes to every one of the players. This refers to the question of player's individual perception related to the task and food habits. Actually in sports the question of nutrition appears absolutely important compared to taste of food. Food may not be fell suitable to a player for his/her own desire for palatable (tasty) foods. But if s/he get habituated those with own interest, those can be immensely (extremely) beneficial to him/her. An expert sport psychologist will be able to help every trainee with the adequate knowledge about the prescribed nutritious food, and how those are going to help in performing with excellence.

Development of Sport psychology

- Physical educationists the initial efforts in the development of Sport Psychology. They were interested in psychological aspects of sport.

- Sport psychology as a scholarly field is relatively young, but in practice it has existed as long as people have engaged in sport and physical activities. The roots of Sport Psychology were founded in the beginning in physical education departments and institutions, where the teachers and coaches made individual efforts as per their interest in various aspects of psychology.

- The president of International Olympic Committee Coubertin made the first forma! effort to institutionalized Sport Psychology. At the time of executive body meeting of IOC in 1918, a conference was also conducted in which professionals and people interested in Psychology and Physiology were invited. It is difficult to say how much this conference has contributed for the development of Sport Psychology, but it was the formal start.

- Gradually in many countries such as USSR (Russia), USA, Germany and Japan development of Sport Psychology started, which was mainly based on individual efforts.

- In 1920 the first sports psychology laboratory was established by Carl Diem in Germany.

- In 1918 Colman Griffith who is the Father of American Sport Psychology initiated his research program. He was interested about the effect of reaction time, personality, mental awareness, muscular tension and relaxation on sports performance and from 1919 to 1931 published 25 sport psychology research articles.

- In 1923 Griffith offered the first course in sports psychology.

- In 1925 Griffith established sports psychology' laboratory in North America. But due to financial constraint this lab was closed in 1932.

- The first book in sports psychology was published by Griffith in 1926, named the psychology of Coaching and in 1928, the psychology of Athletes.

- In North America no academic oriented research activity was carried out in between 1932 to 1964. After 1960 some physical Education Department offers Sports Psychology Courses.

- In 1965 International Society of Sport Psychology (ISSP) was formed. Then on that year its first World Congress of Sports psychology held in Rome.

- In 1966 a group of Sport psychologists met in Chicago and formed the society, named North America Society for the psychology of Sport and physical Activity (NASPSPA).

- In 1986 Association for the Advancement of Applied *Sport* Psychology (AAASP) was established.

- In 1987 American Psychological Association (APA)was started.

- In 1991 Association for the Advancement of Applied Sport Psychology (AAASP) established certified consultant designation.

- Journal established -

- 1979 - Journal of Sport Psychology

- 1986 - Sport Psychologist

- 1989- - Journal of Applied Sport Psychology.

Today Sport Psychology is an independent, chiefly practice related branch of Psychology and is an integral part of sport physical education as well as an important sport and exercise science. It has close relationship with other sport sciences. It has been accepted as a branch of applied psychology in 1978 and sport psychologists arc regularly participating in International Congress of Applied Psychology.

The areas of special interest for Sport Psychology arc professional preparation, practical orientated approach (PST), development of sport specific psychological test and the future direction for the well being of the sportspersons.

Importance of Sports Psychology

The importance of Sports Psychology in the professional preparation of coaches and PE teachers is universally recognized. The proof is the fact that Sport Psychology forms an integral part of teacher's/coach's training all over the world. Psychology has played a role in sport from the sport time sport exists i.e. coaches have been using psychology from the very beginning of organized sport, but may not be appropriately, systematically and correctly professionally trained and knowledgeable coach will be able to use Sport Psychology in a constructive way.

1. **To understand relationship between biological and Psychological factors in motor learning:**

(i) Influence if growth and development
(ii) Individual differences
(iii) Maturation and sex differences
(iv) Role of heredity and environment.

2. To develop the ability to understand and analyze behavior to grasp learning and coaching situation better:

The fast and foremost requirement of the coach is to understand sportspersons with whom he has to work for long duration of time. The knowledge of sport psychology equips" the coach of understand and analyze the behavior of self as well as others more accurately. Good environment will provide better understanding between the coach and sportspersons. then only the coach will be in a position to bring conducive and productive training atmosphere and fulfill the need and aspirations of the sportspersons.

3. To motivate Sportsperson for better training and performance in competition:

Motivation is one of the key factors in developing performance and giving good performance in competition. It is the energizing; force for task to be performed successfully. There are numerous ways to motivate sportspersons but no single way can be effective for all. Various techniques are to be used in combination to develop motivation and sustain it for training and competition.

4. To understand and develop specific Psychological demands of particular sport:

Every sport has specific physical and psychological characteristics, which are to be understood to be able to develop them. Generally, coach pay attention to physical characteristics and ignore psychological, thinking they will automatically develop. It does, but with trial and error method by wasting a lot of time, even them sometimes faulty psychological skills arc developed which do more harm than benefit for the performance.

5. Talent identification in Sport:

Training is time consuming and expensive today. The trial and error technique cannot be adapted and the best possible selection has to be made, where potential talented sportspersons are spotted as early as possible. Therefore, along with physical, psychological factors are also to be considered when is found out. Motivation, coach ability, emotional maturity, desire to achieve are some of the influencing factors to make an outstanding performer.

6. To enhance and stabilized the level of performance:

Psychological skills play a dominant role is determining if the sportsperson will reach to his ultimate potential. Goal setting, attention, self confidence, imagery, mental toughness, arousal management and decision making abilities are required to attain higher levels. These psychological skills are to be learned in a systematic way to enhance performance. These skills are similar to physical skills, which cannot be developed without regular training along with physical skills.

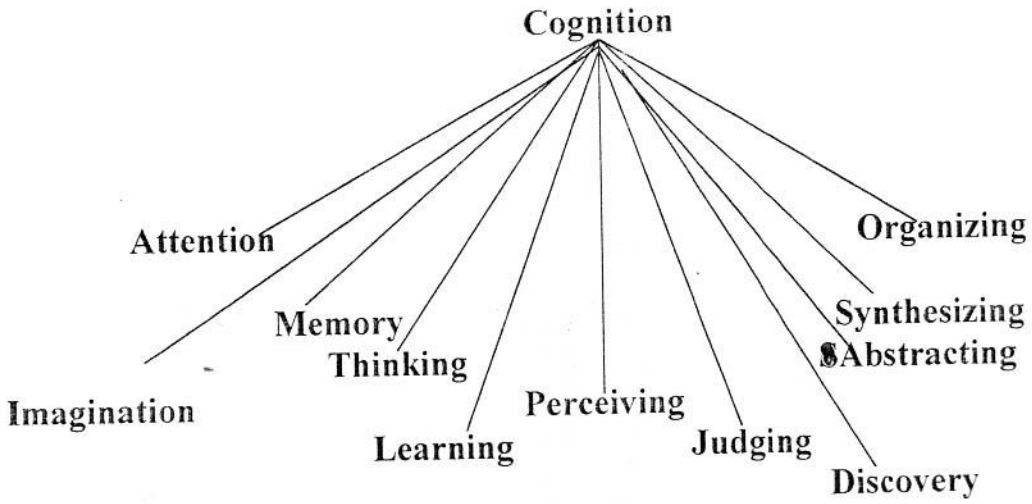
The main reasons for fluctuation in performance are psychological and psychological skills are mainly responsible to stabilized performance. Therefore, mastery over these skills helps in maintaining the higher level of performance over long duration of time.

7. To develop and transmit the knowledge:

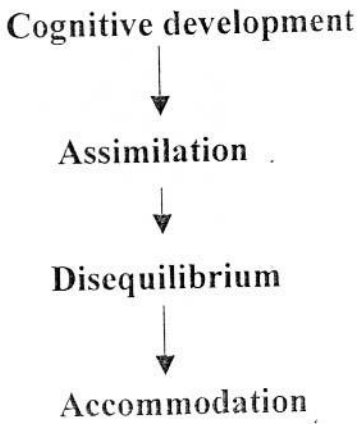
Sport Psychology is a young developing sport science and a practice oriented science. It is essential that there is a relationship between theory and practice. Gaining new knowledge with research and the ability to imparting the knowledge further for its effective use is key to the development of the field. Important areas such as sport specific investigation methods, counseling, termination of carrier, psychological well being of sportsperson, moral ethical questions and future direction for development of sport psychology need constant attention of experts.

Cognition in Sport

Defining cognation: It is an expression for every process by which a living creature obtains knowledge of some object or becomes aware of its environment. Cognitive processes are: perception, imagination, recognition, discovery, thinking, judging, memorizing, learning and often speech. Cognition to a human activity intellectual and communicable.



Piaget's (1970) theory of cognitive development



Piaget's (1970) theory of development explained that, the children get motivated to develop cognitive structures because they need to interact with and master the environment. According to Piaget there are three stages of cognitive development.

1. Assimilation - A child simply processes the information according to their available cognitive fame or structures, which according to Piaget is termed as assimilation.

2. Disequilibrium - Gradually the child realizes that the basic structures or cognitive frames are not sufficient to process all the available stimuli present in

the internal and external environment. Here, the child feels confused. Piaget defined this stage s disequilibrium.

3. Accommodation - This disequilibrium motivates child to develop newer cognitive structures in order to understand complex situations, a process defined by Piaget as accommodation.

Thus, according to Piaget, precisely cognitive development, and development as a whole is a lifetime process in which we continually move between disequilibrium and equilibrium. Thus, cognitive theories by and large, imply that the development of cognitive structures is linked to the process of motivation. Theories suggest that the motivation as a process may be conceptualized as some kind of discrepancy between what the individual needs to realize in order to make majority of the information or stimuli available as comprehensible.

Characteristics of cognition

Cognition as a mental process has some specific characteristics, which play their significant roles in explaining behavior, for instance, sports behavior.

1. Cognitions arc often based on past learning. Children learn to categorize, to develop beliefs and attitudes by imitating and modeling their parents and other seniors. Alteration and modification of one's own beliefs, values and attitudes occur with newer experiences of the 'self.

2. Cognitive processes have a tendency to make our beliefs, attitudes, ideas etc. Consistent with social, moral or ethical values. Thus a child tries to organize, to conceptualize, or to process information according to certain rules and principles. These rules help the child to recognize the world as more meaningful, consistent predictable.

3. Cognitive processes are relatively rigid. Once our cognitive structures are formed, we appraise all the newer information on the basis of that cognitive frame or structure. When we perceive that, these frames are no longer useful for explaining a lot of aspects present in the ever-changing world, we see that, these cognitive frames are naturally very much resistant to change (not easily changeable) or to get modified.

Depending on the aforesaid characteristics of cognition, behavioral problems arising out of conflicting situations arc explained on the basis of the theory of cognitive dissonance.

Cognitive processes in sport

1. Cognitive processes operate very quickly in sporting situations.

2. Cognitive processes require identifying and differentiating information and selecting appropriate information.

3. Cognitive processes are to be executed under high physical load

4. Cognitive processes are to be executed under high psychological pressure

5. Cognitive processes are influenced directly or indirectly by opponents.

THE THEORY OF COGNITIVE DISSONANCE: STATE AROUSAL

Cognitive dissonance theory implies that basically people in this world need to experience cognitive consistency in some sense. It helps to explain why categories, beliefs, attitudes values and stereotypes are highly resistant to change. According to the theory of cognitive dissonance, human being is susceptible to process all information in such a way that it will be consistent with existing information, stereotypes, values, attitudes etc. and behavior- and otherwise to ignore information those do not fit with the existing beliefs, attitudes etc.

The most major area of research in Cognitive Dissonance concerns with any specific situation wherein an individual sport performer has already committed an action that is inconsistent with his/her cognition. For instance, those who are habitual smokers won't believe in the campaigning that, smoking has significant with cancer, while non-smokers would definitely believe in that.

Conceptually the theory suggests that, when we encounter new information that is inconsistent with our existing ways of thinking about the environment as a whole, a state of cognitive dissonance typically arises. It has been suggested that, the cognitive dissonance creates a motivational state within us that disposes us to look for ways of reducing it. To do this, we can add new cognition or change existing ones, seek information that is consistent with existing cognition or simply avoid information that is inconsistent with the existing cognition.

THE BILOGICAL COMPONENT

Previous researches were of the opinion that, cognitive dissonance has a motivational or drive-like state, what actually produces physiological arousal. Croyle & Cooper (1983), evidenced definite increase in arousal followed by cognitive dissonance, while Elkin & Leippe (1986), found in two different studies that, cognitive dissonance caused elevation in galvanic skin response (GSR), which was later on further supported by the extensive studies taken away by Losch & Cacioppo (1990). Thus, it has been discussed that, arousal has been closely related to cognitive dissonance when people need to process information; to think about some issue, or to resolve some conflict, the brain and the neural mechanism as a whole typically becomes active. However, when brain is highly aroused in one task, it is able to perform other tasks less well.

THE LEARNED COMPONENT

Researches have also suggested that, a perception of an inconsistency among an individual's cognitions generates a psychological discomfort-intrapersonal tension -and that this aversive state motivates individuals to take remedial actions (Elliot & Devine, 1994). The learning perspective suggest that some strategies arc used to reduce dissonance, and if these strategies are found effective and are observed to reduce psychological discomfort, whenever the individual in concern faces cognitive dissonance once again repeated use of these strategies in future gets reinforced.

THE COGNITIVE COMPONENT

The cognitive dissonance theory explains why people are inclined to maintain their existing beliefs. The theory also suggests that it is possible to change other people attitudes. Sometimes, people engage in behaviors that are not consistent with their underlying beliefs and attitudes. If that happens people may change their attitudes to match their behavior. Festinger (1957) argued that, since it is quite impossible to change their behavior, people usually try to change or alter or to modify their beliefs.

IMPACT OF COGNITIVE DISSONNCE ON SPORTS PERFORMANCE

A good deal of research indicates that cognitive dissonance may lead to performance decrements. It has been postulated that, while cognitive dissonance can facilitate performance in subsequent over-learned or well-learned tasks, this may often interfere with performance on subsequent difficult or complex task. The basic interpretation of these and other findings is that, cognitive dissonance increases arousal and it is the increased arousal that mediates this effects. According to a well-accepted attention model, increase in arousal narrow attention (Easterbrook, 1978,1980; & Nideffer, 1989). While narrowed attention can facilitate in performance on an existing highly practiced skill, high arousal would interfere with learning that required broad as opposed to narrow attention. Further, if high arousal tends to focus attention on survival related cues, it would be difficult for the individual to integrate new information that did not pertain to survival.

Since, cognitive dissonance can make it difficult for people to focus or concentrate, they sometimes attempt to control this type of arousal by managing information input. In the course of a sporting competition, an opponent may attempt to use cognitive dissonance to distract a competitor by saying, for instance, - "My grandmother can run faster than you", or "your team always folds under playoff pressure".

Cognitive Rehearsal Techniques for Peak Performance

Peak performance is not a regular incidence, it happens once and thereafter the competitor tries hard to maintain his/her peak level of performance. Actually following the periodization procedures in sports training, coaches train up their athletes and the athletes following training schedules gradually reach up to that level of performance excellence. Rut there are a lot of factors, which can hinder the peak performance.

High trait arousal is always viewed as a major obstacle for peak performance. One of the major problems for the players who face problems of high arousal and anxiety that they cannot focus their attention on the competitive task; instead they tend to focus on the potential threats, potential difficulties and on their own problems. In order to prevent these anxiety-focusing or threat-focusing attempts, the performers could be trained to appraise the positive aspects at hand and the available coping resources to perceive the situation more positively.

Players who were born with anxious predisposition could be trained to alter their schemata or hidden assumptions about their world with more positive outlook. The real idea is to alter the anxious perception and apprehension of relatively non-threatening situation into an altogether positive perception.

Anxious players always tend to perceive failure as a regular event. Instead of accepting failure as the outcome of a specific situation, they tend to conclude that all of the future competitive situations are going to end up with failures too. Development of a positive assumption can help to resolve this problem.

Anxious players also need to develop the faith in them that, they can really bring effective changes to make things better for themselves, and they can perform better even under pressure. Researches showed that, players with good coping skills experience far less amount of anxiety than people with poor coping skills.

In addition to all, the anxious players and persons need to know that, high arousal is necessary for peak performance. High arousal could also be experienced as positive emotion. Our perception of high arousal as negative or positive actually depends on whether we view the situation as a threat or a challenge. Peak performance involves rising to the challenge. Thus learning to appraise the situation in more positive ways can help anxious individuals to deal with their high arousal.

Depending of the previously mentioned notions a number of cognitive rehearsal techniques arc developed to help the athletes to maintain their performance.

1. Refutation of irrational thought-This technique follows absolute elimination of the negative or performance-inhibiting thoughts. The players are thoughts. The players are taught with the techniques so that, they can identify their own irrational thoughts, and try to negate them as best as possible. In doing so, they systematically desensitize the negative ideas to a neutral thought, and then proceed to make reconsider the positive sides of the competition and the incentives of the peak performance, which lead then to have challenging feelings to meet the competition.

2. **Cute controlled thought modulations-** This technique takes helps from already developed competition cues, which are developed during previous competitions. The athlete is trained to recall those specific cues more and more to nullify crises of present situation, and try to develop his/her own strategies to overcome deficiencies and to identify the positive aspects of his performance, competition situations, but never focuses on the matters related to the opponents and the possible negative outcome of the competition.

3. **Positive self-talk**- Pre-planned and framed phrases and personally arousing words such as - kill them, Fire, wash out all of them etc. are used by the athletes to keep themselves aroused. They use these techniques as autogenically arousing phrases, which keeps them optimally aroused to put forth peak performance.

Finally, one has to realise that too high for a longer time certainly develops stress reaction. Hence, the players and anxious persons in general must need to learn how to rest and relax.

Perception: Perception is the result of interaction between sensory and central nervous system process. Sensations are elementary impressions gathered by sense organs while in perceptions the sensory impressions are interpreted.

Perception is defined as meaning attached to an object, event or situation occurring in spatial and temporal proximity to the individual. Perception depends on:

1. Selectivity - ability to attend to relevant information and disregard irrelevant information/ cues.
2. Previous experiences - which are recalled, back on the basis of memory.
3. Situation and also on the context in which the event occurs.
4. Anticipation.
5. Motivation.

Types of perception:

- Time perception
- Rhythm perception
- Space perception
- Depth perception
- Distance perception

Imagination: Imagination takes us beyond the realm of personal experiences the material for imagination is recalled experiences. Imagination involves the constructing of elements derived from past experiences into new whole. Imagination depends on experiences (personal and collective human experiences). One can imagine only what exists in the world.

Thinking: Thinking is mental activity in its cognitive aspects. Thinking is behavior which is often implicit and hidden and in which symbols (images, ideas, concepts) are ordinarily employed.

Characteristics of thinking

- It is essentially a cognitive activity
- Directed toward some purpose/end
- Problem solving behavior but related only to cognitive behavior.
- Mental exploration through various means

Two types of thinking processes are used in sport

- Pre-planned thinking process
- During performance thinking process

Memory/retention: Retention is essential if the person is to put to use what has been learned. Motor memory refers to the persistence of knowledge or skills, which have been learned and can be recalled when required. In fact, there can be no improvement from trial to trial to trail without some relation because the learning of advanced skills depends on retention m\\certain level of ability.

Retention or long term memory may be dependent on number of factors, namely the nature of tasks, meaningfulness of the task to the learner, time lapse between original learning and recall, motivation, attention, conditions under which the task was learnt memory aids, teaching methods, practice schedules etc. and over learning.

Decision making in sport

Decision-making plays a very important role in sport performance. Decision-making can be understood by three separate but interrelated phases, which often overlap each other. The decision making takes place as a unit.

The whole decision-making takes place as a unit.

- Receiving information
- Processing and decision

making

- Evaluation of task

performance

Receiving information:

Perception is required for the collection of information. Information related to sporting activities are perceived through various receptors present in the body.

- Visual (many facets of vision following a moving projectile, determining peripheral activity, spatial relation, color and brightness).
- Auditory (hearing)
- Kinesthesia (body awareness in joints, tendons and muscles - information the body of its conscious change in position and relationship of its part in space)
- Tactile (touch pressure and temperature nerve endings under the skin
- Vestibular (giving information connecting the total body position in space in the inner

ear)

Processing and decision-making:

Processing of information and making a decision on the basis of analysis of information is required. Imagination and thinking is involved in this process.

In case of changed decisions alternatives (2^{nd} and 3^{rd} choices) also must be present. They are very essential for high level of performance.

Evaluation of task performed:

A constant evaluation of the task performed is required. It is done on the basis of the goal and the result of the task performed. On the basis of the evaluation, the correction in the task to be performed should made.

3. Attention and its role in sports

3.1 Concept of attention

Attention is the act of fixing or focusing the mind on an object. It consists in the direction of mental activity to an object or content of consciousness. Attention is the key process in taking information. Attention is the process that directs our awareness, as information becomes available to the senses.

Some characteristic features of attention are:

1. ***Attention is selective.*** At any moment numerous stimuli act upon the same sense organ. All these things make a bit of our attention. We continuously select some of them and attend to them.
2. ***Attention has two aspects-positive and negative.*** When we attend to a thing, we focus our mind on it. and withdraw it from other things. Focusing of mind is the positive aspect *of* attention. Withdrawal *of* mind is the negative aspect of attention.
3. ***Attention is mobile and shifts from one object to another.*** Attention to a specific thing cannot last for more than eight to ten seconds. Sometimes it shifts even more rapidly.
4. ***Attention is exploratory.*** Sometimes we attend to a new object. Newness is favorable to attention. When we attend to a new object, we explore its qualities.
5. ***Attention is a set of readiness.*** It arouses in the individual a set or readiness to attend to a particular object to the exclusion of others.
6. ***Attention is a motor adjustment.*** It involves a general attentive attitude and a special adjustment of a sense organ to a particular object. Attention to a visible object involves the adjustment of the eyes to it. Attention to a sound involves the adjustment of the ears to it.

Attention is critical and essential for both learning and performing in sports. Superior performance occurs when sports persons are in the optimal prepared state, characterized by attention being directed totally at the process of performing the skill and nothing else. Good concentration, which implies full attention being given to the task, is necessary for success in sports performance. The difference between attention and concentration should be understood. Concentration and attention are often synonymous in the language of sport, but they should not be used interchangeably to avoid any kind of confusion. Concentration has been defined as the narrowing of attention, a fixation of attention to certain stimuli, and sustaining attention on selected stimuli. Concentration should be limited to the latter meaning-the ability

to sustain attention on selected stimuli for a period of time. We commonly call this attention span. Therefore, concentration refers to attending to only a small number of task relevant stimuli at one time. It is the ability to maintain focus on relevant environmental cues. When environment changes rapidly, attentional focus must also change rapidly.

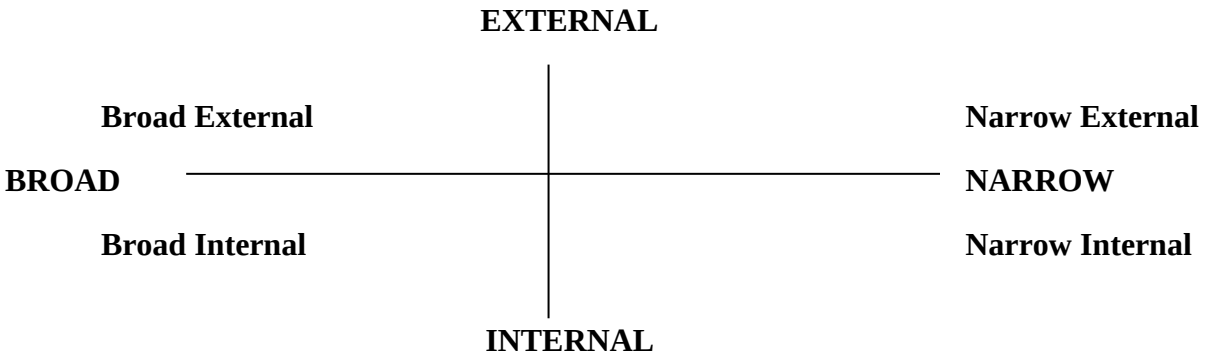
When we attend to one thing, very often our attention is distracted by other things. When we read a book, our attention is diverted to music in an adjoining house, or a talk among your friends. Anything that interferes with attention is a distraction. Here comes the question of problems related to remain attentive to any particular subject matter or event. When we try to attend to any object, such as reading material- we try to keep that matter at the center of the focus of attention. But there may exist a lot of other related matters, which could be less important or more important than which on we are focusing on. These matters remain in the periphery of attention as long as we focus on the matter at the center of our focus of attention. These other matters may also attract our attention.

Now, here comes the question of Shifts and Fluctuations of attention. When our focus of attention moves from one object of interest to another one, this change in focus of attention mean the other object becomes the center of attention and the pervious one moves into the periphery of the attention. So, this movement of attentional focus from one to another specific one is termed as Shift of attention. Thus attentional focus may move from one point of interest to another and may return to the previous one once again. For instance, you are focusing at point A and your attention may shift to point B, and can once again be back to A.

In times we can experience some other kinds of changes in focus of attention. Such as we may try to attend to A, after a while we can perceive that we are no longer focusing at point A. we are attending to point B. and then once again to C, D. E and so on, may be it may come back to A or B or C once again, and back and forth. This kind of continuous change in focus of attention from one point of interest to another and continuous changes are termed as Fluctuation of attention.

3.2 Attentional focus and sports performance

The Nideffer model of attention (Nideffer, 1981) is based on the existence of two dimensions of concentration: direction and width, which is known as "focus of attention*. Width varies from broad to narrow and direction from internal to external. It is proposed that we can direct our attention in one of two ways in order to attend to relevant performance cues.



We can focus our attention on cues which are external to us (e.g., a target, ball, team mate or opponent) or we can focus on internal cues (e.g.. thoughts, images, and feelings). Nideffer (1981) states that we can choose to attend to a large number of cues or a small number and that this dimension probably extends along a continuum. This dimension produces four kinds of attentional focus: 1. Broad-internal. 2.narrow-internal, 3. broad-external. 4.narrow-external. The player will need to adopt each of the four types of attentional focus depending on the requirements at any time.

Sports persons and coaches certainly recognize the importance of proper attentional focus in achieving high level of performance. Attentional focus, which plays a key role in sport performance is influenced by the following aspects:

1. Maintaining attentional focus:

Maintenance of attentional focus for the duration of the competition is very important for high level of performance. Many sports persons have the ability to concentrate instantly, yet few can sustain a high level for the completed duration of competition. Maintaining focus over long time periods is no easy task. It has to be learned and practiced.

2. Focusing on relevant environmental cues:

It refers to focusing on the relevant environmental cues, or selective attention. Irrelevant cues are either eliminated or disregarded. This refers to as selective attention because you are selecting what cues to attend to and what cues to disregard. It is ability to select the correct cues or stimuli to which sportsperson should attend from countless irrelevant and competing stimuli.

3. Types of attentional focus:

Most people think attention is an all-or-none phenomenon - you either pay attention or you don't, however, researchers have discovered that various types of attentional focus are appropriate for specific sports. To date, the most useful research on the role of attentional style in sport has developed from the theoretical framework of Nideffer (1976.1981). who views attentional focus along two dimension: width (broad and narrow) and direction (internal and external).

A broad attentional focus allows a person to perceive several occurrences simultaneously. This is particularly important in sports where athletes have to be aware of and sensitive to a rapidly changing environment. A narrow attentional focus occurs when you respond to only one or two cues, such as, when a batsman prepares to swing the bat to play the ball. An external attentional focus directs attention outward to an object, such as, a ball in basketball or to an opponent's movements, such as, in a doubles match in tennis. An internal attentional focus is directed inward to thoughts and feelings, such as when a coach analyzes plays without having to perform or a high jumper prepares to start his run-up.

4. Shifting attentional focus:

Often it is necessary to shift attentional focus during an event. Let's take an example from tennis. As the player prepares to serve, she needs to assess the external environment, the direction of the wind, note current playing conditions, surface of the court, and where to serve. This requires a broad external focus. After appraising this information, she might recall previous experience of playing with her. the types of service she knows, and her ability to return the service, and her own ability to serve at that point. After analyzing the information, she has gathered, she will select a particular type of service. These considerations require a broad internal focus. Once she formulated a plan, she might toss the ball on the ground a few times, image a perfect shot, takes a deep breath as part of a pre-shot routine. She has moved into a narrow internal focus. Finally, shifting to a narrow external focus, she addresses the ball. At this time, her focus is directed on the ball. This is not the time for other internal cues and thoughts, which would probably interfere with the execution of the service.

5. Situation awareness:

One of the least understood but most interesting and important aspect of attentional focus in sport is a sportsperson's ability to understand what is going on around him or her. It is known as situation awareness. In essence this ability allows players to size up game situations, opponents and competitions to make appropriate decisions based on the situation, often under acute pressure and time demands. This ability is called situation awareness and is critical for performance. Sportspersons with the ability seem to be able to do just the right thing at the right time. Their awareness of the court and competitive situation always makes it seem as if they are a step ahead of everyone else. In fact, research has indicated that experts (high - ability sportspersons) are able to analyzes situations more quickly and use more anticipatory cues than their less expert counterparts (Abernathy, 1993). Being able to size up a situation to know what to do - and possibly what your opponent is about to do - is a key attentional skill.

3.3 Arousal attention relationship in peak performance

Arousal is blend of physiological and psychological activity in a person and it refers to the intensity dimensions of motivating at a particular moment. Arousal is defined as a general physiological and psychological activation, varying on a continuum from deep sleep to intense excitement. The intensity of arousal falls along a continuum ranging from not at all aroused to completely aroused. Highly aroused individuals are mentally and physically activated, they experienced increased heart rates, respiration and sweating. Arousal is not automatically associated with either pleasant or unpleasant events. You might be aroused by learning you have won one million. Learning of the death of a loved one might equally arouse you.

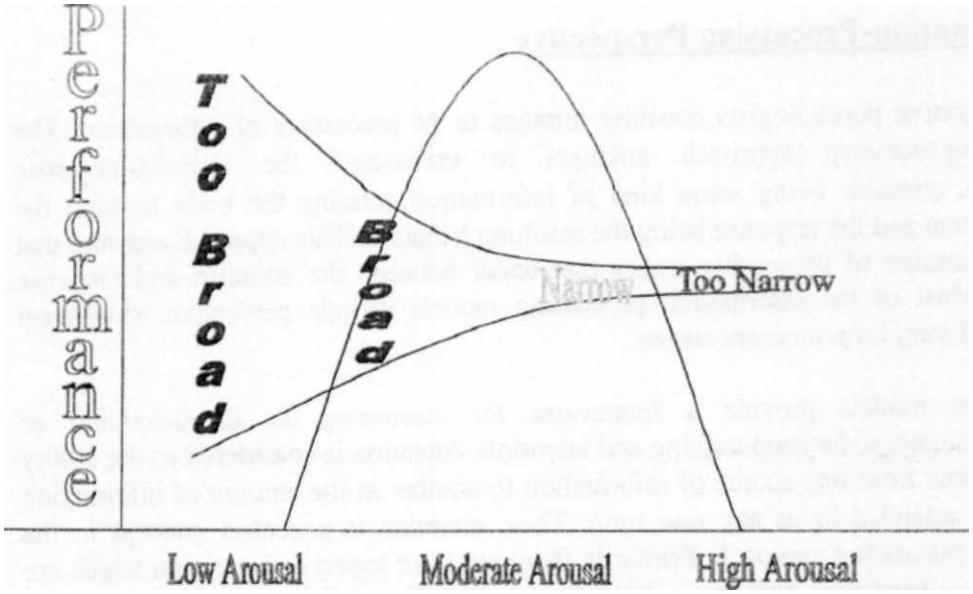
One of the most compelling relationships that sports psychologists study is how arousal affects performance positively and negatively. Arousal is a multidimensional consisting of both physiological activation and a sportsperson's interpretation of the activation. We must help sportspersons find the optimal mix of these emotions for best performance. Moreover, these optimal mixes of arousal related emotions are highly individual and task specific. Two sportspersons participating in the same event may not have the same optimal arousal level, and a person's arousal level for performing a balance beam routine would be quite different from an optimal arousal for a maximum bench press in power weightlifting. Some optimal level of arousal leads to peak performance, but the optimal levels of physiological activation and arousal related thoughts are not necessarily the same. An optimal level of arousal is considered related to peak performance. Similarly, attention plays a dominant role at high level of performance by sportspersons.

Researchers comparing successful and less successful athletes have consistently found that attentional control is an important discriminating factor. In general, their studies reveal that successful athletes are less likely to become distracted by irrelevant stimuli, they maintain a more task oriented attentional focus, as opposed to worrying or focusing on the outcome. Some researchers have argued that peak performers have developed exceptional concentration abilities appropriate to their sport. These observations led Gould. Eklund and Jackson (1992c) to conclude that optimal performance states have a characteristic that is variously referred to as concentration, the ability to focus, a special state of involvement, or awareness of and absorption in the task at hand.

Another line of research demonstrating the key role of proper attentional focus relates to differences between expert and novice athletes. Neither physical characteristics nor perceptual motor factors fully account for the differences between expert and novice performers. Rather, a growing body of evidence suggests that 'knowledge based' factors, such as, where an athlete directs his attention, can account for performance differences between expert and novice athletes in a variety of sports (Moran, 1996).

Understanding why arousal affects performance can help a sportsperson to regulate arousal as increased arousal influences changes in attention level (Nideffer, 1976). First, an increased arousal causes a narrowing of a performer's attentional field (Landers. Wang and Courtet. 1985). For normal conditions, the goalkeeper can maintain his optimal focus, but if he is under aroused, his attention focus may be too broad, focusing on both task relevant (e.g the opponents) and irrelevant cues (e.g. the crowd). When he experiences excessive level of arousal, his attention focus narrows too much and he is unable to survey the entire playing area.

Easterbrook's cue utilization theory (1959) states that increasing levels of stress cause a peripheral narrowing of perceptual sensitivity. This implies that the sports person may miss important cues or game situation information. This kind of phenomenon applies to both visual and auditory perception. When arousal and anxiety is low then the range of cues or information available, and the degree of perceptual sensitivity to the periphery is high. Although, at first glance, one would think that this sensitivity to a wide range of cues would be advantageous, it seems that the athlete actually becomes overburdened with non-specific stimuli because of a lack of concentrated attention. In other words, he or she is distracted and not focused on the task at hand. One can now think of this range of cues as representing a funnel; under low arousal we are at the broad mouth of the funnel (i.e. a wide range of perceptual cues) and as we experience a progressive rise in anxiety the range of cues progressively decreases and we proceed toward the thin end of the funnel. Moderate anxiety seems to have an integrating effect upon the athlete's attention because the range of available cues or stimuli is automatically reduced by the increased arousal-this means that distractions may be reduced. However, this peripheral narrowing with arousal is conducive to increased attention only if the athlete has been "coached' in the important cues to which he should attend.



Arousal Attention Performance relationship (Easterbrook, 1959)

When arousal is increased, sportsperson also tend to scan the playing environment less often. For example, a wrestler who experiences high levels of arousal becomes preoccupied with executing one move on an opponent so does not visually or kinetically scan the opponent's total body position for other potential opportunities. Thus, his performance deteriorates as he scans less often, and potential scoring opportunities become less utilized.

Arousal also causes changes in attention and concentration levels by affecting attention style (Nideffer. 1976). Sportspersons must learn to shift their attention to appropriate task cues. For example, a football midfielder need to shift from a broad external span when surveying the field for a player in good position to a narrow external focus when delivering a pass. Each sportsperson has a dominant attention style that may be inappropriate for the skill at hand.

Increased arousal also causes sportspersons to attend to inappropriate cues. For instance, most sportspersons perform well-learned skills best when they fully concentrate on the task. Unaware of their levels of concentration, they perform on automatic state or in a “flow zone”. Unfortunately, excessive cognitive slate anxiety sometimes causes sportspersons to focus on inappropriate task cues by 'worrying about worrying' and becoming overly self-evaluative. This, in turn, affects optimal concentration.

3.4 Theories of attention in sports

A) Information-Processing Perspective

Cognitive psychologists consider humans to be processors of information. The information-processing approach attempts to understand the stimulus-response relationship, stimulus being some kind of information entering the body through the sensory system and the response being the resulting behavior. This approach assumes that there is a number of processing stages that occur between the stimulus and response initiation. Most of the information processing models include perceptual, short-term memory and long-term memory stages.

These models provide a framework for examining the characteristics of perception, memory, decision making and attention. Attention is considered as the ability to switch focus from one source of information to another as the amount of information that can be attended to at any one time. Thus, attention is a central concept in the information processing approach. Primarily there are three aspects of attention which are considered as interactive processes, they are - 1. Attentional Selectivity, 2. Attentional Capacity, and 3. Attentional Alertness.

1. Attentional Selectivity:

Selective attention means ability to selectively attend to cues, events or thoughts while disregarding others at the time of performance. It refers to the process by which certain information from internal or external environment enters the information processing system, whereas, other information is screened out or ignored. A sports person is constantly getting lots of information from internal and external environments and can only assimilate a certain amount at a particular moment and therefore selection is necessary to process few stimuli. Selection can take place in a large variety of behavioral situations, that is, a sport person may choose to focus inwardly on certain strategies and past experiences or outwardly on a wide range of environmental cues. Thus selection is multifaceted and is essential for sport performance.

Selective attention plays a central role in both learning and performing of sports skills and changes with skill improvement. For example, basketball players first learning to dribble a ball must devote much attention to watching the ball and are unable to lift their heads to focus on the players around them with practice, however, dribbling is carried out without watching the ball, and the skill becomes more automatic.

With practice, attention can be changed from a difficult conscious process xo a smooth unconscious process. These two aspects of attention have been called control and automatic processing. Control processing is used to process new or inconsistent information and is slow, effortful and capacity-limited. It is deliberate and controlled by the individual. In sport, control

processing would be involved when decisions are required. For example, a tennis player taking into consideration surface, wibd conditions, and opponent's ability to return the service, would use control processing. In contrast, automatic processing, which is responsible for the performance of well-learned skills, is fast, effortless, and not under directs conscious control. In sport, automatic processing would be found when sports person has developed skills after many years of practice. For example, a swimmer taking a summersault turns at the wall.

All sports require a combination of automatic and control processing, because athletes need to perform many skills in a reflexive, automatic manner but are also required to make decisions and process inconsistent cues and new information. Closed skill such as golf, archery, shooting etc. probably require more automatic processing, whereas, open skill sports involve a combination of the two. Thus, control processing and automatic processing has the potential to play important roles in sports performance.

2. Attentional Capacity:

A second aspect of attention that has been examined relative to performance is attentional capacity. This term refers to the fact that control processing is limited in the amount of information that can be processed at one time. Specifically, an individual is limit to performing one complex task at *a* time and thus would have difficulty focusing attention on two sources of information simultaneously. Consequently, control processing can be viewed as having a limited capacity for processing information from either the internal or external environments. Thus, performing multiple tasks or attempting to focus on more than one source of information may result in reduced performance.

The restrictions on attentional capacity are *due* to both structural and central capacity limitations. Structural interference involves two tasks performed at the same time using the same receptor of effector systems. For example, listening for the sound of *a* starter's gun while at the same time listening to a voice in the crowed could provoke auditory structural interference. Capacity interference occurs when two tasks complete for limited central information-processing capacity simultaneously. Fixed capacity and undifferentiated theories represent two different views for explaining how task performance will be affected if capacity for processing is exceeded.

3. Attentional Alertness:

The term alertness has been defined as the sensitivity of a person to stimuli. It is referred as a person's responsiveness to the environment. Some researchers suggest that the development and maintenance of optimal sensitivity over a period of time is a further aspect of alertness. Clearly, momentary increase in alertness (e.g. when receiving a serve in tennis) and sustained alertness (e.g. during five set tennis match) are crucial requirements in many sports.

B) Social Psychological Perspective

Social psychologist has studied attention from the point of view of control processing (e.g. the possibility that task irrelevant rather than task irrelevant stimuli entering the information processing system) in order to attend to vital cues in the environment. In performance situations, focusing attention on task irrelevant information while attempting to perform well learned skills may be detrimental to performance. Three areas of this attentional research have pertinence to the role of attention control and performance of well learned skills: 1. Distraction theories. 2. Automatic functioning and 3. Attentional style.

1.Distraction theories:

Distraction theories focus on the loss of attention caused by factors that attract attention to task irrelevant cues. Thus, if task irrelevant cues attract and sport person's attention performance may be negatively affected. If a shooter focuses solely on thoughts of missing the target, it is possible that attention will be disrupted and performance degraded.

One factor that may cause attention to be diverted to irrelevant stimuli is worry. Sarason (1972) and Wine (1971) have suggested that worry influences an emotional state serves as a distracter of attention and can thus explain the negative effects as the sports person focuses his attention on task irrelevant thoughts and individuals critical task cues during performance.

Another source of distraction information is self-awareness. Carver and Scheir (1981) have suggested that attending to oneself while performing may take attention away from task cues, thus degrading performance. Other authors (Duval & Wicklund, 1972; Scheier, Fenigstein & Buss, 1974) have suggested that it is impossible to attend to oneself and too the environment at the same time. Because social facilitation generally tends to increase self-awareness (Carver & Scheier, 1978). the presence of spectators and cameras at sporting events has the potential to generate increased focus on the self, thus distracting the sports persons. Therefore, distraction in the form of worry or self-awareness is another attentional factor that can affect skill performance.

2. Automatic functioning:

This concept relates to the automatic processing of performance. In competitive situations, when individuals realize the importance of correct skill execution. They attempt to ensure success by consciously monitoring the process of performance, that is, they attempt to put the execution of a skill which is typically under automatic processing control, under the control processing mechanism. Thus, attempting to ensure success by consciously monitoring the process of performance during competition has been established as another inefficient use of attention.

3. Attentional style:

It is possible that there are individual differences regarding the distraction and automatic processing concepts so far discussed. Thus, in competitive situations certain sports person may tend to use an attentional style that hinders performance. Variations in attentional style and their effect on sport performance have formed the focus of much of the attentional research in sport psychology. The attentional demands of any sporting situation will vary along two dimensions: width (broad and narrow) and direction (internal and external). A broad external focus requires individuals to focus on a wide area of the external environment (e.g a football defender scanning the width of the field), whereas a broad, internal focus is a style that focuses attention internally on a variety of strategies and past experiences. A narrow, external focus would be appropriate for activities that require the individual to focus attention on a narrow aspect of the external environment, such as. a tennis ball or the ring in foul shooting. a narrow internal attentional focus is most suited to attending to specific images or cognitive cues.

The challenge for the athlete is to match the attentional demands of the sporting environment with the appropriate style. Therefore, performance may be impaired when an individual uses an inappropriate style for a particular activity (e,g. a baseball player batter who broadly focuses his attention on players and spectators rather than using a narrow focus on the pitcher.

C) Psycho-physiological Perspective

In contrast to cognitive psychologists who have attempted to understand attention by studying the whole process (receptor, information processing and motor output), psycho physiologists have attempted to identify the mechanisms of attention by examining its component parts. In psychophysiological research, electroencephalogram (EEG). evoked response potentials, contingent variation, and heart rate have primarily been used to examine attention and its relationship to performance. For instance, EEG (obtained by monitoring general cortical

activity through scalp electrodes) has been studied in relations to a variety of cognitive tasks, including vigilance potentials, which are averaged brain responses to a series of stimuli, have also been examined as indicants of attention, and contingent variations have been found to be sensitive to the level of concentration on a task.

Therefore, it is recommended that attentional processes underlying sports performance should take into account the principles outlined for information processing, social psychology, and sport psychophysiological research. Thus attention should be viewed as a multifaceted, multileveled phenomenon that can be assessed through questionnaires. thought sampling. observation analysis. performance and psychophysiological measures.

3.5 ***Attention skill training in elite spurts persons***

Many coaches and sports persons believe that attention will develop automatically with practice (trial and error method) and there is no need for special attentional training. Knowing what to pay attention to. How to shift attention as needed and how to intensify one's attention is required for performing optimally during participation, which has to be taught. Before an attentional training can be designed and conducted with individual sports persons, the following is necessary to keep in mind:

1. The first important thing to attentional training is to educate the sports persons about the attention process and the demands of the sports. Moreover, the beginning has to be made with the basic attentional training. The purpose of the educational phase of attentional skill training is -

a) To teach athletes how the attentional mechanisms work.
b) To identify the specific attentional demands of each skill to be performed
c) To understand what factors cause attentional problems.
d) To know that selection, shifting and concentration skills can be developed to overcome these problems.

2. Determine the attentional skills of the sports person. It means to assess the sports person's attentional strength and weaknesses. Given the multifaceted nature of attention, one would expect assessment strategies to be most effective if they were also multifaceted. Some possible ways to assess an individual's attentional capabilities include questionnaires, interviews, thought sampling techniques, observational analysis, performance test, and psychophysiological measurement.

3. Compare the sports person's strength and weakness with the demands of the particular sport skills to be performed in a sport.

4. Plan a training program to help each sports person develop attention selection, shifting and concentration skills.

5. The sports person must practice those skills they need to develop and use them during training.

Basic Attentional Training

Based on the multidimensional profile that can be obtained from the assessment of an athlete’s current attentional capabilities, a training program would be designed around the attentional strengths and weaknesses of the athletes. If the basic attentional training is required, the program would start at a basic level and gradually progress to more complex, sophisticated attentional skills.

Advanced Attentional Training:

An extension of basic attentional training may take the form of a sport individualized program. At this advanced phase it should first be verified that the sports person has acquired basic attentional control and is ready to develop sport specific attentional skills. The advances attentional training has to be individualized, i.e. it must suit the requirement of an individual sports person. The below mentioned techniques can increase attention. These exercises can be adapted to any sport.

1. Learning to shift attention:

This exercise can be practiced in its entirety or broken down into separate exercises. Before starting the exercise, sit or lie down in a comfortable position and take a few deep breaths from the diaphragm. Begin the technique once you feel comfortable and relaxed.

a) Pay attention to what you hear. Take each separate sound and label it, such as, voices, footsteps, or the radio. Next, listen to all the sounds around you without attempting to label or classify them. Simply dismiss your thoughts and listen to the blend or sounds as if you were listening to music.

b) Now become aware of body sensations, such as, the feeling of the chair, floor, or bed supporting you. Mentally label each sensation as you notice it. Before moving on to another sensation, let each sensation linger for a moment while you examine it closely, considering its quality and source. Finally, try to experience all of these sensations at once without labeling any of them. This will require a broad internal focus.

c) Turn your attention to your thoughts and emotions. Let each emotion or thought simply arises, do not try to specifically think about anything. Remain relaxed and at ease, no matter what you are thinking or feeling. Now try to experience each of your feelings and thoughts one at a time. Finally, see if you can just let go of all these thoughts and emotions and relax.

d) Open your eyes and pick an object across the room and directly in front of you. While looking straight ahead, see as mush or the room and as many objects there as your peripheral vision allows. Now try to narrow your peripheral vision allows. Now try to narrow your focus of attention to just the object centered in front of you. Continue to narrow your focus until that is the only object in view. Now expand your focus little by, little, widening your perspective until you can again see everything your perspective until you can again see everything in the room. Think of your external focus as a zoom lens, practice zooming in and out. narrowing or broadening your attentional focus according to your preference. By shifting your focus across internal-external-and broad-narrow dimensions, this exercise helps you experience different

attentional styles. The exercise also demonstrates why different perspectives are needed to perform the various skills required in different sports.

2. Positive self-talk:

Attentional control is particular!) important in helping athletes stay in the present. The future cannot be controlled and the past cannot be erased or replaced, so it is essential that athletes learn to remain in the present. Self-talk can help athletes control their attention. Positive self-talk exercise is concerned with effectively eliminating negative thoughts by constantly reminding yourself of positive statements related to performance. Positive self-talk is crucial for attention. It not only helps in bringing attention to the task but also helps in performance enhancement. It is often easy to be distracted during competition and practice. By using a specific set of positive verbal cues, athlete can keep their minds appropriately focused.

3. **Learning to maintain focus**:

Find a quiet place with no distractions. Choose an object to focus on (you might choose something related to the sport such as, hockey slick, soccer ball or volley ball). Hold the object in your hands, get a good sense of how it feels, its texture, color and any other distinguishing characteristics. Now put the object down and focus your attention on it, examining it in great detail. If your thought wander, bring your attention back to the object. Record how long you can maintain your focus on the object. Once you are able to focus your attention for five minutes, start practicing with distraction present. You will enhance your performance capabilities if you can become proficient at maintaining your attention despite distractions and disruptions.

4. Searching for relevant cues:

The grid exercise is used to help sports person to search for cues. This exercise requires a block grid containing two digit numbers ranging from 00 to 99. The object is to scan the grid and within a set period of time (usually 1 or 2 min.) mark as many sequential numbers as possible (00,01,02 etc.). The same grid can be used several time by just starting the higher numbers than in your previous attempt. This exercise will help you learn to focus your attention and scan the environment for relevant cues specially in fast moving sports such as, basketball, tennis etc.

5. Rehearsing game attention:

Using imagery or mental rehearsal is another good way of developing attention. Imagery is especially useful for recreating the competitive situation in order to identify the cues to attend to and to practice shifting the direction and the width of attention as the situation changes. In imagery the rate at which

the situation changes can be slowed down and speeded up as the mind wills it. Imagery also provides opportunities to attend fully to the environmental stimuli without worrying about making the appropriate response.

Techniques for Attention Training on Play Field

1. *Use* simulations in practice:

Anyone who has played competitive sport understands that the competitive environment includes numerous factors that are not present to the same degree in the training environment. Such environment factors as a noise and antagonistic crowd, the presence of officials and the competitive environment much different from practice. In addition, psychological factors, such as competitive anxiety, motivation and confidence, are all likely to vary between practice and competition. All these factors represent potential distractions to the athletes and may impair performance. You can prepare yourself to cope with distractions by systematically practicing with typical distractions present. Some basketball coaches for instance, have loud crowd noses piped in. wanting the players to get used to playing and shooting in that environment. This type of practice is known as simulation training because the coaches are trying to simulate an actual competitive environment.

2. Use cue words:

Put simply cue words are used to trigger a particular response. They can be instructional (e.g. follow through, watch the ball etc.) or motivational or emotional (e.g. strong, move, relax, get tough etc.). the key is to keep the cue word simple and let is automatically triggering the desired response. For example, a sprinter might say explode to make sure that he gets off the starting blocks well. Cue words are particularly useful when you are trying to vary or change a movement pattern. Attentional cues are also helpful for trying to break a bad habit.

3. Employ nonjudgmental thinking:

One of the biggest obstacle sports persons' faces in maintaining concentration is the tendency to evaluate performance and classify is as good or bad. That is. they assign a positive or negative value to what they do. Such judgements tend to elicit personal, ego-involved reactions. The process of evaluating and judging what you do on the sport field usually results in performance declines. For example, a soccer player who misses a couple of opportunities to score a goal might think. '1always miss the easy ones'.

Instead of judging the worth of a performance and categorizing it as either good or bad. You should learn lo look at your actions non-judgmentally. This doesn't mean you should ignore errors and mistakes but that you should see your performance as it is, without adding judgments. He has to evaluate his performance mistakes and find out the correct way of doing it. In this way he has used his performance evaluation constructively, which translate into better performance and a more enjoyable experience.

4.Establish routines:

Routines can focus concentration and be extremely helpful to mental preparation for an upcoming performance. Researchers have argued that pre-performance routines work by helping sports persons to divert their attention from task irrelevant thoughts to task relevant thoughts. In essence, routines increase the likelihood that individuals will not be distracted internally or externally prior to and during performance.

5. Develop competition plans:

In depth interviews with elite sports persons in a variety of sports clearly indicate the importance to them of establishing pre competition and competition plans to help maintain their attentional focus. These plans help sports persons not only prepare for their events but also to prepare for what they would do in different circumstances, both before and during their competition. In most cases sports persons design these detailed plans of action to facilitate attentional focus on the process of performance (as opposed to factors over which they have no direct control, such as. other competitors and final outcome).

6. Practice eve control:

Eye control is another method to focus concentration. The eyes lend to wander (just as minds do). Rather than fixing only on the task at hand (task relevant cues), they see such distractions (task irrelevant cues), as motions in the crowd, antics by opponents, signals that officials are giving, outbursts from coaches, and behavior in teammates. Many a race has been lost near the end by looking at the opposition instead of focusing on the finish line. They key to eye control is to make sure your eyes do not wander to irrelevant cues. Some things that athletes have used to enhance eye control is focusing on the floor, the equipment, or a spot on the wall.

7. Stay focused in the present:

The importance of keeping focused in the present cannot be overemphasized. Because the mind is so open to incoming messages, it is hard to keep a present focus. The mind wants to replay that missed shot and review that error in judgement or blown assignment. It also wants to look ahead to what might happen in the future. But past and future oriented thinking usually creates attentional problems. Staying in the present requires a focus concentration throughout the event. It's okay to take a brief mental break occasionally during stops in the action. But it is important then to have a cue word, like focus, to help bring you back into the present when it's time to start competing again

8. Over learn skills:

To perform at high levels, sports persons report that overlearning of the skills involved in their sport helps concentration in the competitive situation. In interview, athletes consistently stated that the skill they were required to perform in competition bad to be overlearned to the extent that they could stay focused despite any distractions that might be present Hardy. Jones and Gould. 1996). Over learning helps make the performance of skill automatic. This in turn, frees up one's attention to concentrate on other aspects of the performance environment.

It is also vital to remember that attentional skills cannot be developed in isolation from the other psychological skills. As has been pointed out, imagery and stress management skills are especially necessary to improve attentional skills. And as attentional skills improve, they permit the further development of stress management and imagery skills.

UNIT-II

1. Personality and sports performance

1.1 Meaning of Personality

The word ‘personality’ derives from the Greek word ‘persona’, meaning ‘mask’. Each individual has his own characteristic style of reacting to the social environment. This constitutes his personality. Personality refers to an individual's social skills, which enable him to interact successfully with different people under different conditions. Personality is the blend of characteristics that make a person unique. According to Boring, personality is the typical adjustment to his environment. Woodworm defines personality as the quality of an individual's behavior.

1.2 Dimension of personality types and traits in sports

Researchers conducted in the field of sports psychology were keen to identify the relationship between successful sports performance and personality make-up of the athletes. When selected for the first time as novice sports performers, athletes or players usually differ from each other in terms of their respective personality make-ups. Beginners may come from heterogeneous; i.e. various sector of society or population and hence, owing to differential family set-ups they are more likely to have differences in rearing or parental upbringing in the family. This being the reason beginners are susceptible to have variation in their personality make-up.

Personality as a concept of sports psychology includes certain types, such as, introversion and extroversion; and traits, such as, depressive, obsessive, anxious etc. Personality 'traits' are viewed as non-changing, stable characteristics that remain relatively consistent regardless of the situation, where as "states' are viewed as transient fluctuations within an individual. If someone is 'trait-anxious', they have a predisposition to be anxious in many situations. Traits are not discovered by direct observation. They are not active of all times in a personality pattern. Traits are identified through trait analysis. A "state-anxious" person on the other hand is displaying a mood related to the particular situation.

Differences in behavior are thus due to individual differences in personality traits. According to trait theorist, traits as important behavioral predictors. Behavior, personality and environment are interdependent. Personality influences behavior and behavior affects personality. For example, highly anxious athletes who worry about their performance often behave less competently. To make matters worse, the less competent outcomes increase the athlete's anxiety or worry about both past and future performance.

Jung (1875) distinguished personality into two main types- introversion and extroversion. Those who have introversion personality type are called introverts and those who have extroversion personality type are called extroverts.

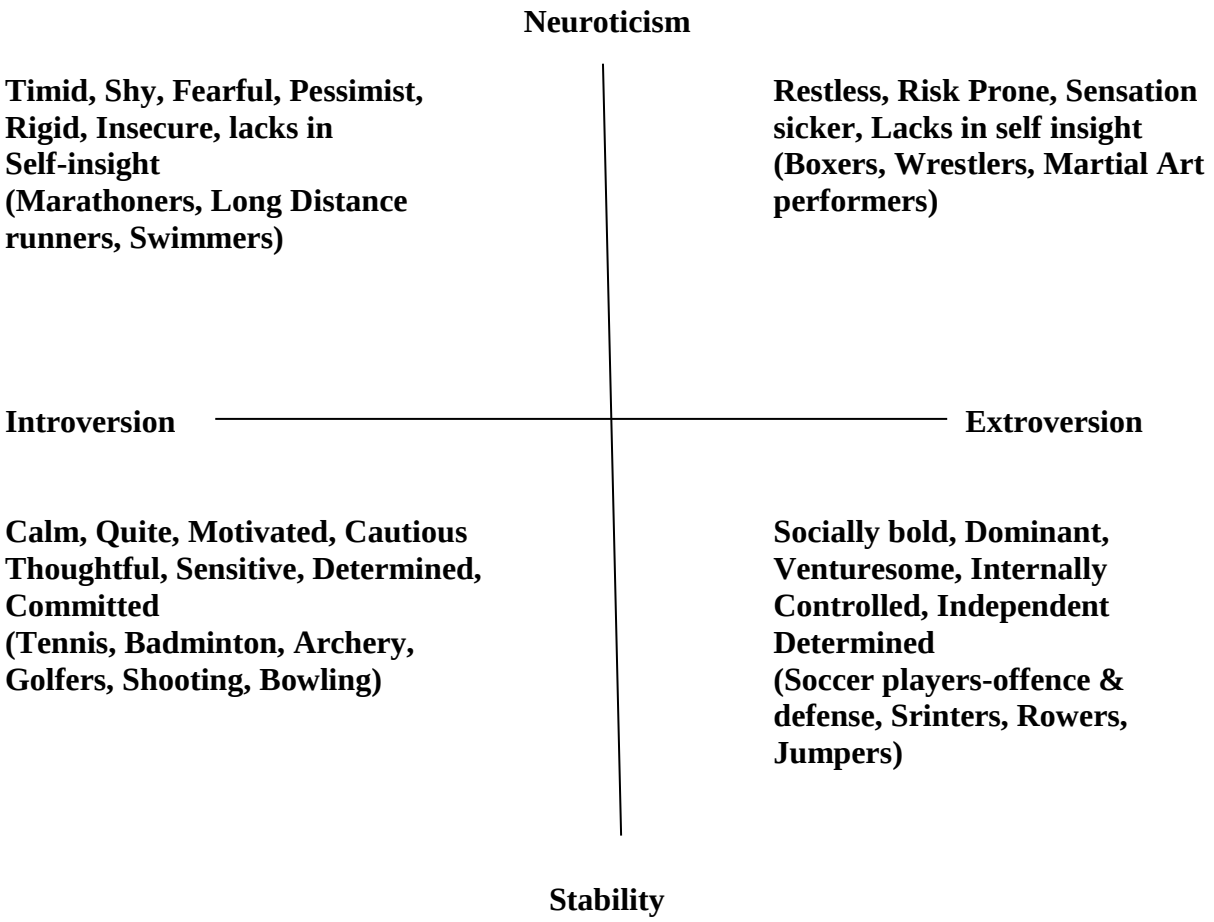
The introverts are so called because their psychic energy is derived from inner world, i.e. from his emotion, need, thought etc. According to Jung, introverts are interested in their own thoughts and feelings, enjoy being alone, and do not participate in social functions. They cannot make quick decisions and cannot quickly execute their plans into action.

On the other hand, extroverts are so called because their psychic energy comes from social environment. They are sociable, interested in social environment, participate in social functions, quickly react to situations and readily adjust themselves to new situations. They can make quick decisions and execute their plans into action.

Jung mentioned a middle variety of personality type, that is ambiveryion and those who have ambivertion personality type are called ambivert. The ambiverts are so called because their psychic energy is partly directed inward and partly directed outward. They are interested in their own thoughts and emotions and also in other persons and their actions.

Personality types are attracted to and succeed in certain sports just like they do in certain occupations. The more athletes and coaches understand about their personalities and the team profile, the more productive they can be.

The frame-work that effectively defines the distinctions between the sports performers of different sports disciplines, was based on Eysenck's Personality Profile. It attempted to identify the relationship between two dimensions of personality with respect to differences in specific sports personalities. Eysenck (1967) proposed two-dimensional theory of personality - introversion-extroversion and neuroticism-stability, with respect to differences in specific sports personalities. This is known as Eysenck's personality profile or Dimension of Personality Profile.



Dimensions of personality according to Eysenck (1967)

Benefits of understanding the personality profile of athletes:

- Helps to assess the fit between persons and sports and even positions on a team.
- Helps athletes and coaches to value their strengths and become more aware of those areas in which development may be warranted.
- Helps coaches and athletes in a strained relationship analyze the source of the conflict and build a strategy to reduce it.
- Can lead to motivated and committed behavior.

• Useful for the athlete and sports professional in career and life planning, self-management (such as. stress/time management) and interpersonal skills areas.

• Many applications in time building and management training.

1.3 Psychodynamic theory of personality

Psychodynamic or Psychoanalytic theory in personality originally developed by Sigmund Freud (1920) considered the mind as dynamic. According to this theory the real function of mind is not intellectual or cognitive, but impulsive or conative. According to Freud, mind has three different structures or levels—the conscious (Cs), the preconscious (Pcs) and the unconscious (Ucs).

Human mind follows social code of morality in conscious day-to-day life and represses some natural desires, as for example, sex. These repressed desires become unconscious wishes. Thus in conscious level of mind, in wakeful state every single event is perceived and recognized. But out of them only morally socially accepted impulses can remain in conscious level. Others which are not socially or morally accepted, must be repressed, and hence these will remain as unconscious wishes. Some of the acceptable desires are non -significant, and hence they may be erased, but when required can be readily recalled. These desires will remain at the preconscious level.

Similar to the above mentioned three structures, Freud also opined of three different functions of mind. viz. Id, Ego. and Superego. According to the view of Freud, the ego is partly conscious and partly unconscious. As conscious, it maintains contact with the social environments and follows the " reality principle". As unconscious, it follows the" pleasure principle" and gets transformed to the id. The id always remains unconscious and unorganized. It contains all the instinctual driving forces of human life, i.e. both the "life instinct" and "death instinct". The "life instinct" essentially means, intense sexual urge and extreme desire for lively activities. On the contrary, the "death instinct" is expressed as the suicidal tendencies in some individuals. The id is dominated by the pleasure principle -the intense need for immediate gratification of the repressed and forbidden desires.

The ego in conscious level is dominated by the reality principle, i. e. the desires which are socially and morally acceptable, are processed and others are repressed. The ego unconsciously executes the commands of the id and consciously acts as a controlling force over the id.

The third function of mind is the superego. It corresponds to conscience. The super ego helps the ego in controlling the primitive,

repressed and rebellious instincts of id. It is the representative of the parental authority within the individual.

Psychodynamic or psychoanalytic theory of personality attempts to explain different types and trails of personality on the basis of these structures and functions of mind. For instance, introverts compare to extroverts have bulkier unconscious level i.e. they have more repressed thoughts and desires. That is the reason the introverts do not like to accept further stimulation from their conscious environment. They remain mostly engrossed with their inner repressed thoughts and desires. Similarly, in case of person having obsessoied traits. face troubles with repressed thoughts. those recur repeatedly from unconscious through preconscious level with feelings of extreme sense of guilt.

Psychodynamic theory relation to sports:

In sports we often come across some players who relatively more rigid in nature. This rigidity inhibits them in learning of newer techniques or skills; in modifying some older skills or habits; in understanding newer tactics and in developing or introducing newer strategies. A rigid player or sports person characteristically has lesser ego strength. In wakeful state, when ego acts at conscious level, perceives its lack in handling effectively with too many newer stimuli. Thus his ego regularly avoids and represses a lot of stimuli, which gradually makes the unconscious as bulky. Under these circumstances, continuous newer stimulation at conscious level and pressure from unconscious repressed thoughts and desires, leads his ego to process only a fewer number of regularly interacted stimulation, wherein it is habituated. For instance, in one to one situation, a rigid footballer always tries to go for an out- sides dodge.

Thus psychodynamic theory of personality also attempted to explain a few other psychological problems in sports field. But the most important problem lies in explanation in the lack in objectivity, i.e. all these explanations are hypothesized and cannot be tested.

1.4 Behavioral Schools in Personality of Sports

Behavioral school of theorists attempted to define personality make up in terms of certain behavioral aspects. They developed two concepts forms the basics—

1. the first, how one relate to 'people' i.e. 'People Trail' and
2. the second is, how one deal with 'tasks or things', i.e. "Task Trait".

1. People Trait—People trait refers to the way we relate to and communicate with other people, whether you are agreeable, assertive or flexible with others. One's self test shows that he/she has flexible balance between agreeableness and assertiveness.

2. Task Trait- task Trait refers to the way we relate to the jobs and tasks and objects in our physical environment. One's self test shows that he/she is open to new experiences and ideas but not overly conscientious.

These two trait pairs combine with a third factor, our emotional altitude toward life, to produce our personality. Our emotional attitude reflects how happy or unhappy we feel about life and the world around us, and determines of 'personality agility' (personality variation, i.e. agreeableness to disagreeableness—a continuum process).

In people trait balance, we enjoy being with agreeable people. They were a pleasure at work and a joy at home, because they are cooperative, friendly, trusting and helpful. When we need someone to step up and get a job done, we look for assertive and take-charge people. Agreeableness traits and assertiveness traits are like a dance. When we dance closely, one person leads and the other follows. Traits work the same way. Some situations call for assertiveness. others call for agreeableness; sometimes you lead and sometimes you follow. Personality agility lets one adjust to the demands of the occasion. If one partner is not assertive, another takes the lead. If another partner assumes the lead, one agreeably follows.

When it is important to have a job done well,' we look for conscientious, reliable and dependable people— people who work hard and play by the rules. Conscientious people are comfortable with tradition, structure details and predictability. When it is important to find a newer, better way to do a job, we look for open and innovative people. Open people are comfortable with change, flexibility, the big picture and unpredictability. Conscientious traits and openness traits interact like the two ends of a sea saw. They remain balanced as long as they carry equivalent weights. Some situations calf for conscientious, others call for creativity. Personality agility lets you adjust- lets you more back and forth to meet the demands of the occasion. Out of balance people often cope normally when things are stable, but when stress grows, they fall back completely. For example, task oriented people become rigid. On the other hand, open people become distracted and unfocused. Agreeable and friendly people become passive and assertive people become dominating.

1.5 Exploratory behavior in sports

Children like to explore their environment. All of this exploratory behavior seems to occur without very much encouragement from their parents. In fact, parents often try to discourage children from their interest.

When a person achieves an appropriate goal object in the course of random movements, then the exploratory drive will be reduced. As a result, the preceding behavior i.e. the goal directed behavior would be reinforced. Through learning, the person will then become increasingly more efficient at finding the appropriate goal object when a given drive state has been activated. For instance, if a young boy trying

very hard to bowl leg-spin, suddenly achieve success. Here no more random exploration is required, only he needs to practice the correct movement. Thus the goal directed behavior will be reinforced.

Children like to seek out new and varied stimulation. When a person stops interacting with a novel object, we say that he or she has become satiated. This implies that the person has had enough, that the objective is no longer a source of motivation, and that the person has exhausted all the information or entertainment value of the object. For an adult person this interest generally never returns, but children may often return to objects to which, previously they lost interest it appears that satiation dissipates (disappears) with time. Extroversion has also been linked to the tendency to select variety, novelty and complexity.

The information-processing model, proposed by Piaget (1970), also assume that we tend to develop more highly complex cognitive structures as the result of processing information. In other word, as we grow older, we are able to process more complex cognitive stimuli. If humans, are motivated to process new information, it follows that older individuals will prefer more complex stimuli. For example, a novice soccer trainee would like to learn only the basic skill of receiving a ball, while an older or senior player would like to learn or practice a wide variety of complex skills of receiving the ball- such as using toe. heel, head, chest in running condition etc.

Work on exploratory behavior suggests that people tend to avoid exploration (the search for new sensations and new experiences) when it entails risks. Risks are thought to arouse fear, which is incompatible with exploratory behavior. Several theories of exploratory behavior assume that fear produces high levels of arousal. It has been suggested that high arousal tends to shift attention to more survival related cues, which is incompatible with exploratory behavior. Such as, in limited over cricket, when 27 runs are to be scored in 20 remaining balls with 3 wickets in hand, the situation becomes highly arousing. One batsman may perceive it as somewhat fearsome and may try to avoid too risky shots, for the question of survival (not losing his wicket) may prevent him to try out for exploratory (because of field placement critical or complex situation arises--so the way should new for scoring high) behavior to score more runs.

1.6 Sports and sensation seeking

Human beings are strongly motivated to process information in the environment in order to maintain optimal arousal. If stimulation falls below some optimal level, the individual will experience negative affect. According to Zuckerman (1979), sensation seeking is a trait defined by the need for varied, novel and complex sensations and experiences and the willingness to take physical and social risks for the sake of such experiences. One of the key elements of sensation seeking is the willingness to take risks. There may exist four types of sensation seeking activities.

1.Thrill and adventure seeking:

Some people are interested to seek excitement through risky but socially acceptable activities, such as, parachuting or driving fast.

2.Experience seeking:

Some people desire to seek sensation by engaging in activities, those are non-conventional or not acceptable, such as. experimenting with drug abuse.

3.Disinhibition:

Those who follow a conventional life-style may periodically escape from that -social drinking, gambling, and hooliganism.

4.Boredom susceptibility:

Some people have a much lower tolerance for repetition and same ness. They tend to seek out stimulation to break monotony in life.

Sensation seekers tend to view the world as less threatening. They tend to view the world in positive terms and are able to accept imperfection and like people. They have a great deal of tolerance for different values and points of view. Sensation seekers also have a good sense of humor. They have many qualities that make them resistant to the effects of stress. That means high sensation seekers are likely to experience greater pleasure.

High sensation seekers like to make decisions, like to make them quickly and are willingly to make them with incomplete information. In addition, they are willing to abandon plans that are not working. High sensation seekers tend to keep their opinions open. Among other things they are unwilling to make long-term commitments. While sensation seekers are inclined to self-disclose, they are not inclined to commit to long-term relationships.

Sensation seekers tend to get involved in sports, especially those regarded as risky. For example, they climb mountains; hang glide, scuba dive, and go downhill seeking. However, there is no evidence that they are attracted to danger for its own sake. It appears, rather, that sensation seekers do not let risk stand in the way of new experiences. Rowland et al (1986) found that high sensation seekers more quickly gel bored with a given sport and try something new.

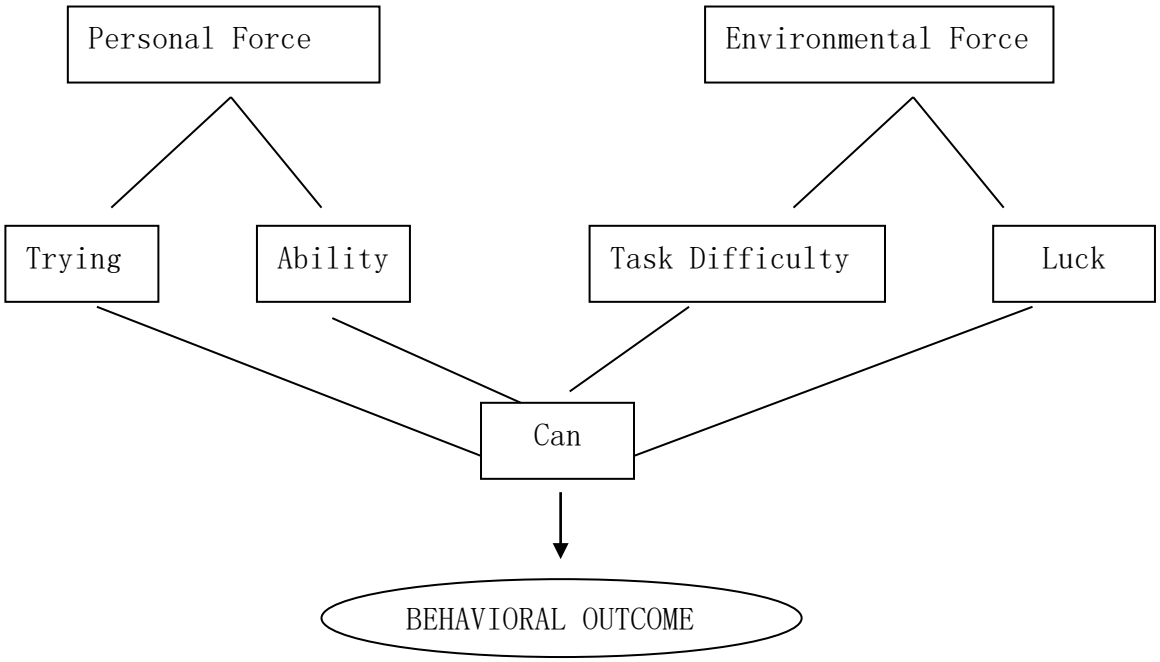
1.7 Causal attribution in sports

Human being varies widely in judging or interpreting past performance or behavioral outcomes, and attempt to explain cause and effect relationship and try to predict future behavior there by. Attribution is the personality variable that relates to a

perception or attribution of the causes of success or failure in performance either within the individual himself, i.e. the player perceives the cause of his success or failure in performance only due to his ability or effort level and not due to task difficulty or luck (internal) or he attributes his failures in particular to some external reasons, such as. task difficulty, luck or powerful person. This process of emphasizing any particular cause with respect to some event is known as causal attribution.

According to previous researchers, such as, Lewin (1935) and Heider (1958), behavior is a function of, or is outcome of personal force and certain environmental factors B = f (P & E). Heider proposed that behavioral outcomes (success and failure) are attributed to effective personal force and effective environmental force. Effective personal force may be represented as follows Personal force = f (ability & trying). Thus ability and trying together were considered integral components of effective personal force. For instance, a boy of class viii from BKSP in cricket discipline cannot readily consider playing for National or professional level of cricket, because there is simply not sufficient ability. On the other hand, effective environmental force may be represented as follows Environmental force = f (task difficulty & luck). Thus the environmental force used to account for behavioral outcomes was comprised of two components—task difficulty and luck.

Heider proposed that task difficulty and ability were also thought to interact to yield a dimensions referred to as "CAN". Thus, if the task is extremely simple or the individual possesses a great deal of ability, that task can be accomplished successfully. Conversely, either an extremely difficult task or low ability would mean that the task couldn't be carried out successfully. Thus the Heider's model for causal attribution may be represented as follows:


Personal Force
Environmental Force
Trying
Ability
Task Difficulty
Luck
Can
BEHAVIORAL OUTCOME

According to Weiner (1972), there are four perceived causes of success and

failure at achievement task ability, effort, task difficulty and luck. Following Heider's thought. Weiner restructured the four factors within two main causal dimensions—stability (unchangeable) and locus of control (internal attributes verses external attributes).

Weiner's classification scheme for the causal attribution

CONDITIONS	INTERNAL	EXTERNAL
STABLE	ABILITY	TASK DIFFICULTY
UNSTABLE	EFFORT	LUCK

According to Weiner individuals use ego-enhancive and ego defensive strategies in their attributions for causality in achievement situations. There is a tendency to ascribe successful outcomes to personal /internal factors while unsuccessful outcomes are attributed to environment/ external (actors. Weiner has hypothesized that affective or evaluative reactions to task outcomes are a function of the perceived reasons for the outcome. The athlete who losses but perceives the result to be due to bad luck or the exceptional play of an opponent experiences less shame than an athlete who fails and perceives this to be a product of low effort. Conversely, an athlete who perceives success to be the result of luck, experiences less pride in that outcome than one who attributes an outcome to ability.

2. Role of Aggression in Sports

2.1 Concept of aggression

Ancient human being used to possess two essential basic characteristics-1. The tendency to flight and 2. The tendency to fight. Flight was essential, when they faced with dangers, to avoid those danger situations or to be secured, they had to get rid of those crises, and they used to run away from the dangers. On the contrary in confronting with similar or less powerful enemies, they used to fight. This behavior also important for them for hunting or procuring food. Sometimes being faced with dangers, they used to fight as the last resource of survival. Thus it is clear that, we genetically inherit the tendencies of fight or flight to adjust to our changes in environment.

In sports both of these general tendencies are often used as basic need of the competitive situations. We use flight behavior when we need to defend ourselves from attacks of opponent team in order to avoid failure, and we use fight to reorganize our offensive strategies to achieve success. Thus, basically from the basic energy source of motivation we habitually use these basic fight or flight tendencies in competitive sports. Since, motivation is a critical determinant of athletic success, most of the coaches, athletes strive for high levels of motivation to ensure maximum performance. This excessive strive for motivation may sometimes become too strong, misdirected and uncontrolled and may be harmful, as this may turn into aggressive or violent behavior, which may result in injury to other players. Therefore, aggression may be as the willingness to engage in physical and psychological acts of harm in order to control the actions of other people. According to Geen (1990) aggression as behavior against another person with the intention of committing harm.

In competitive sports, particularly in body contact games, the question of aggressive behavior directly affects sports situations. Tackling, blocking, checking and other rule sanctioned contacts and collisions are not necessarily aggressive behaviors in sports. These may not happen in individual non-contact events, such as, in athletics and swimming events and in tennis, badminton, table tennis etc. in the sporting context, the term aggression is used in many ways, i.e. aggressive batting style, aggressive net play in tennis etc. Terms such as acceptable aggression, acceptable violence, controlled aggression are inaccurate use of the term when applied to sport context. Although these examples imply that aggressive behavior is positive, from a scientific perspective, the term aggression describing something very different.

From a scientific perspective. Baron (1977) has defined aggression as any form of behavior directed toward harming or injuring another living being. Several key issues in this definition are:

1. **Aggression is behavior:**

   Aggression is not an attitude, emotion or motive. Thinking negative thoughts or wanting to hurt someone is not aggression, anger is not aggression, anger and negative thought and motives might play in the occurrence of aggressive behavior, but they are neither necessary nor defining characteristics of aggression.

2. **Aggression is directed or intentional behavior:**

   Accidental harm is not aggression but acts that are intended to injure others are aggression whether or not they are successful. A basketball player fighting for a rebound who breaks an opponent's jaw when he swings his elbow for position is not being aggressive, it is an accident and part of the game.

3. **Aggression is directed or intentional behavior:**

   Aggression is not limited to physical harm, such as. hitting an opponent across the arm with your hockey stick. But it may include verbal acts intended to embarrass another person, for example, saying something hurtful to another player to annoy him or acts that deprive someone of something, such as. destroying a teammate's equipment.

4. **Aggression involves living beings:**

   According to Baron kicking your opponent is aggression but kicking a bench is not an act of aggression.

Sport has the potential to be violent. Violent behavior continues in sports because sport involvement and socialization presents a unique opportunity for young sports persons to acquire behavior that in most other social settings would be considered inappropriate and unacceptable. Violence refers specially to the physical component of aggression. It is defined as "harm- inducing behavior bearing no direct relationship to the competitive goals of sport and relates, therefore, to incidents of uncontrolled aggression outside the rules of sport rather than highly competitive behavior within the rule boundaries' (Terry and Jackson, 1985). In other words, violence is equated to physically inflicted illegal and hostile aggressive acts.

Within the general category of aggression further distinctions about the types of aggressive behavior has been made. Aggressive behavior can be classified according to the primary enforcement sought via the act. The two types of aggressive behavior often identified are instrumental aggression and hostile or reactive aggression (Husman and Silva. 1984).

1.Instrumental Aggression:

Instrumental aggression is aggressive behavior carried out to achieve non-aggressive goals. It is concerned with that aggressive behavior whose purpose is to achieve some goal and in which harm to another person occurs only because it is the most efficient way of achieving the desired goal. The goal is not to observe the victim's suffering, but to receive some other external reward or goal. In sport this could be money, media attention, victory or prestige. The aggressor views the aggressive act as being instrumental in obtaining primary goals. For example, flexing the elbow while rebounding in basketball. In this case the player may intend to injure the opponent but the most important goal to be achieved by the aggressive act is to get the possession of the ball. The player also is certain that the teammates as well as the coach will acknowledge his efforts.

2. Hostile or Reactive Aggression:

Hostile or reactive aggression has as its purpose harm or injury to another person as primary goals, with the perception of the other person as a threat stimuli and corresponding emotions of anger. Therefore, this sort of aggression is generally accompanied by anger on the part of the aggressor. The intent is to make the victim suffer and the reinforcement is the pain and suffering that is caused.

In terms of aggressive act itself there is little difference between the two types of misbehavior. The outcome of the aggression is the same i.e. punished by the rules of the sport/game, as neither type of aggression is acceptable in sport. The difference is of the degree of punishment. In both the cases, the aggressors are guilty of purposely inflicting harm with the intent to injure another person, and, have to be punished. Many a times, it is difficult to separate distinctly the two types of aggression, thus, wrong judgements/punishments are given by the officials.

2.2 Biological Component of Aggression

The most workable definition of aggression is a socially unacceptable behavior against another person or a group of persons, with the intention of committing harm. Discussions related to biological components of aggressive behavior should consider the reasons behind the tendency to commit harm, and in doing so, we will consider the factors of genetic influences, role of hormones and the underlying neuro mechanisms in development of aggressive psychopathology.

Genetic Processes

Numerous studies so far have been done to reason out a relationship between genetic predominance in formation of aggressive psychopathology, but most of them remained inconclusive. A meta-analysis report suggests that there could be a valid role of genetics, since monozygotic twins showed correlations between them, while aggressive-behavior index was assessed employing self-report inventories. Rigorous methodological constraints and use of self-report measures only leave us with misleading conclusions.

Hormones and Aggression

One of the main questions with regard to role of hormones is raised to increased level of testosterone in human male linked to aggressive behavior. But there are also questions remain regarding whether testosterone causes heightened aggression, or aggression raises the level of testosterone, or testosterone only maintains the heightened level of aggression in human male. Recent research on both verbal and physical aggression linked high levels of testosterone and estradiol in blood as responsible for heightened aggressive responses in men but the reverse was observed in case of women participants. Researches on women during menstruation however, showed an imbalance of progesterone and estrogen as responsible for aggressive responses early days of menstruation. Lower level of both progesterone estrogens and a comparatively higher estrogen during beginning of cycle and up to pre-ovulation period are held responsible for increased aggressiveness in women. In rare occasions, particularly in case of women players increase in testosterone alone also has been observed to instigate aggressive outcomes. Leaving the above-mentioned hormones, higher levels of another neuro chemical substance called androstenedione (commonly known as androgens), is also found related to aggressive-type problem behaviors (such as lying, disobedience, dominating attitude, talking back to parents and teachers) in both male and female adolescents. Whatever be the role of hormones, it remains absolutely clear that male is more aggressive compared to female counterparts in both verbal and physical expression of aggressions.

Neuromechanisms

There are considerable research evidences linking aggression to different brain structures. Results from psychosurgery suggest that, temporal lobe and amygdala play central roles in aggression. Amygdala particularly triggers body's fight-or-flight hormones. It actually initiates actions even before we are able to think rationally, and thus we are susceptible to show some kinds of irrational aggressive outbursts even before thinking about the consequences

2.3 Causes of Aggression

Whatever may be the type of aggression, it is most common in society, and hence common in competitive sports field, and that's why it is required to analyze the reason behind excessive aggression and the ways to control or modulate the excessive level of aggression. Aggression takes place in sport, therefore it is natural to put a question why it happens. There are mainly two reasons for the causes of aggression in sport setting- A) Social Reasons and B) Biological Reasons.

A) Social Reasons:

Dollard, Doub. Miller. Mouser and Sears hypothesized some reasons for aggressive behavior:

1. Aggression results from frustration.
2. Aggression results from the fact that competition in itself is arousing.
3. Inherent provocation within the sporting situation that causes sports person to aggress.

According to them therefore it is clear that mainly situational factors are responsible for aggression. Some of them are as follows: 1. Early childhood experiences. 2.Observational learning, 3. Deindividualization. 4.Intent of opponent, 5. Structure of game.

1.Early childhood experiences:

The way children are treated/handled in their early childhood by parents and later in school can have a profound effect on an individual later in life. Rewards and punishment administered to the children by family members could bring aggressiveness in the behavior of a child. Parents sometimes encourage aggression in their children in direct ways and by providing 'models' of them that are aggressive toward others and toward environment. In general, children who view an aggression adult (whose has a powerful influence in his life) will grow up with a tendency to aggress. The way aggression is punished in the children by parent also influences aggressive behavior later in life.

2.Observational learning:

Observational learning is a powerful reinforce. Generally, aggression is encouraged when the young sports person observes that aggressive behavior is getting a lot of attention. Many a times rule violation and frequent aggressive outburst get a lot of media attention and strong support from fans as well as teammates. Therefore, it starts

acting as a form of reward. This behavior is often rewarded by teammates approval (verbal and nonverbal), encouraged by fans and sometimes has tactical support of the coach (status reward). Clearly the actions of others can influence the learning and reinforcement of aggressive behavior in sport.

Social learning psychologists believe that reinforcement value and punishment value are major influence in selecting an aggressive behavior. If the reward is higher than the punishment, aggressive behavior will be encouraged. Moreover, many of the aggressive acts exhibited are considered part of the game, sports persons experience no guilt for such actions.

3.Deindividualization:

Social psychologists believe that deindividualisation encourages aggressive behavior. Losing of one's identity in the group brings less inhibition in an. individual and increases the chances of aggressive behavior, as is commonly seen in mob behavior. There is substantial evidence that deindividualisation conditions promote aggression (Dunn and Rogers. 1980). In sport more aggression may be expressed as players feel themselves immersed and thus relatively anonymous in a team context.

4.Intent of opponent:

If a sports person perceives that the intent of an opponent is to inflict herm, then the sports person is more likely to respond with aggression against the opponent than if he perceives otherwise. This means that the perception of an opponent's aggressive intentions may be more influential than such things as defeat and competition. A basketball player who perceives that his opponent's rough play is intentional and designed to inflict harm is more likely to respond with aggression than if he perceives that aggression is accidental.

In a similar way it might be argued that a player's level of aggression is somewhat affected by level of retaliation. If a sports person fears retaliation from a prospective victim, then the sports person will resist becoming the aggressor. In this situation, only the initial aggression can be inhibited by fear of retaliation but once aggression and counter aggression have begun, it will lead to heightened aggression, as it goes in a circular way.

5.Structure of game:

i) Points Difference: More aggression occurs when the point difference is more than when point difference is minimal.
ii) Home Ground; Flaying on home ground may encourage the players to be more aggressive in front of fans.

iii) Outcome of Competition: Consistent with frustration-aggression hypothesis, it is expected that losing teams and players will be involved in more overt aggression than the winners. The team losing with big margin will engage in aggression to take out their frustration without seriously affecting the game outcome.

iv) League Standing: Aggression is also related to overall league standing. The lower that team is in standing the more its members will engage in aggression.

B) Biological Reasons:

Biologically it is observed that in male sport person generally higher levels of secretion of testosterone and estradiol hormones in blood circulation, aggravates aggressive behavior, while imbalances in the levels of estrogen and progesterone hormones cause increment in aggression in female sports persons.

2.4 Control of Aggression

Therefore, control or modulation of aggression for biological reasons means alteration in the levels of hormonal secretion, and that is a great difficult task, for numerous other factors are involved in it and alteration of the levels of those hormones may cause significant other serious problems. But. Aggressive behavior may be moderated or modified with the help of sports psychotherapeutic assistance. Suggestions regarding how to counter aggressive behavior are broad and multifaceted as the solution to the problem of aggression and violence in sport is not a simple one. Some methods to reduce and eliminate the social causes of aggression are as follows:

1. Young sports persons must be provided with models of non-aggressive behavior.

2. A sports person who engages in an illegal act of aggression must be severally punished. Along with punishment for acts of aggression, sports person must also receive positive reinforcement for controlling their tempers in highly emotional situations.

3. Similarly, coaches who encourage or even allow their sports persons to engage in acts of aggression should be fined, and suspended from their

coaching responsibilities. Coaches and referees should be encouraged to attend workshops for dealing and managing aggression.

4. Emotional control over acts of aggressive behavior should be practiced. Various methods and approaches should be used to change hostile or instrumental aggression into assertive behavior.

5. Spectators must be severally punished for violent acts. They should be controlled so they can not provoke aggression. Many types of restrictions should be put on them such as limit the sale and consumption of alcohol, separate seating arrangements etc.

6. Coaches and managers should make an effort to have more social interactions between opposing teams to bring down intense rivalry.

7. External stimuli (fans, family, coaches etc.) capable of evolving hostile aggression on the field of play should be removed to reduce the factors of annoyers, who encourage aggressive behavior.

8. Media have to play a very constructive role not to high lights aggressive behavior and put them in right prospective. Further media should not promote hatred or rivalry between two teams prior to competition.

2.5 Aggression Reduction - Assertive Training

The main issue pertains to the question of facilitating assertive behavior in place of aggressive acts. The complexity arises with the explanation of assertive behavior. It may be operationally defined as goal-directed heightened physical exertion with optimum level of agility, vigor and need of achievement for success. Assertiveness involves the use of legitimate physical or verbal force to achieve one's purpose but no intent to harm the opponent (Silva, 1980). Such behavior would in most other social setting may be called aggressive behavior. Assertiveness requires the expenditure of unusual effort and energy, but if there is no intent to harm, then any resultant harm is accidental to the game.

Silva defines assertive behavior in sport as proactive assertion, a term which implies that the behavior is acceptable yet forceful or active. Proactive assertive behavior is exemplified by offensive or defensive behavior. An offensive proactive assertive behavior is designed to acquire or gain a valued resource. Defensive proactive assertive behavior attempts to deprive another of a valued resource or expected gains, the proactive behavior must be task oriented, constitutively acceptable and involves no intent to injure. Since institutionalized sport has a formal rule structure governing physical force and verbal exchange, the distinction between aggression and assertive behavior, though often difficult to judge, is certainly feasible.

Here comes the question of alteration of aggressive thoughts to assertive one. First one should consider about the development of aggression. Coach's behavior, conflicts with team mates, crises in family situations, less payment, job insecurity, rough behavior of non-player club officials dealing as authority, faulty decisions of referees etc. and numerous other factors may give rise to a sense of emotional deprivation and if not handled carefully, these may lead to frustration. This frustration remaining unresolved, not consoled and uncared may get added and accumulated and turns into aggression. The

task of a sports psychologist is to resolve the basic level frustrations one after another, and to restructure the cognitive frame of the individual player by reducing the psychological need of that player to harm opponents. This is important to make the aggressor convinced with that, the players of the opponent teams are neither the actual reason behind his/her frustration nor they caused any harm particularly to him/her. Hence, by aggressing towards them the player is not going to gain something, or not going to oppose or to protest against any injustice caused against him/her. If this basic technical framework is followed, the individual player gradually in course of psychotherapy becomes able to realize about the actual sources of problems, and hence become more positive and socially bold enough to face against the actual source of problems, and the aggressive harmful attitudes towards the opponents get reduced, and he/she becomes more optimally assertive towards the acceptable competition goal directed behavior.

In case of other non-contact sports also though any direct physical contact is not possible, sometimes players express aggressive attitudes against opponent players. This may happen by showing off anger in the manners, as for example throwing away rackets, trying to hit the ball hard towards the opponent, by showing off aggressive gestures and mannerisms etc. In these cases, though no harmful contacts really occur, but the expressions certainly hamper the competitive spirit and/or friendly playful atmosphere. Like it works in case of the body contact games, hereto, the same psychotherapeutic systems are adequately workable. Only difference remains here, is that in body contact group games, the objective target of aggression may also be the players of own group, but in full contact individual events, such as, in judo, wrestling, boxing, martial sports, aggression directs only to the opponent. Similarly, relatively in non-contact group games, such as, in doubles in tennis, doubles in table tennis, doubles in badminton, in hand ball etc., the object of aggression may be directed both towards the opponents and towards the players of own groups, while in singles of badminton, tennis and in table tennis, the case becomes directed towards only the opponents. Thus, if the object of aggression becomes known and the reasons behind these aggressions gets revealed by the concerned sports psychologist, it becomes easier to resolve the aggressive activities and to modulate the same to assertive one. directing towards the competitive nature of the sports and the success comes as the automatic consequence.

2.6 Relation between Aggression and Sports Performance

Several investigators have considered the relationship between aggressive behavior and sport performance, but the limited data provide little insight. We often encourage athletes to play tough, hit hard or intimidate opponents. Aggressiveness is identified as a key personality characteristic of successful athletes (Tutko, Lyon and Ogilvie, 1969). But the empirical evidence is not convincing. Silva (1990) has argued that sport aggression tends to inhibit sports performance rather than enhance it, for mainly two reasons:

1. A performance decrement occurs when sports person shifts their attention from the performance goal at the time of attacking an opponent.

2. The heightened arousal associated with hostile aggression may cause a shift in activation and the optimal level of arousal for best performance.

The existing research though limited provides no evidence that aggressive behavior improves sports performance, on the contrary, it appears that hostile aggression quite likely creates anger and arousal interferes with concentration and has no apparent benefits. Some aggressive acts may have instrumental value in sports. The value of such aggressive behavior probably varies with the situation and individual involved. The existing research limited as it is providing no evidence that aggressive behavior improves sports performance.

2.7 Hostility and Anger in Sports

Anger is an emotion, while aggression is the instrumental behavior. Given the fact that, the aggressive players tend to show more and more anger. Here, comes a question as to whether the player is only showing the _expression of anger, for some kind of secondary gains on the opponent players, or really experiences the anger within him.

Hostility on the other hand, is dependent on the extent of feelings of frustration, which is also a situational perception. A player after missing a lot of openings for scoring goals may get frustrated about his own performance. Contrarily frustration arising out of performance errors of others may result in more hostile attitudes and expressions.

Anger and hostility even if are used for instrumental purposes, can result into performance interruptions, as the players get habituated to use them for secondary gains (to dominate others), but they may not always be successful in doing so, which may result in frustrations in them. The frustration arising out of their own performance outcomes and failures to avail secondary gains, and incapability to dominate others lead to a greater extent of negative self-evaluations.

Negative self-perception, and lack of success in utilization of instrumental aggression, disrupts their task-related focus of attention. Another vital question related to the use of anger and hostility lie in the possibility of increment in arousal. Heightened arousal with lack of attentional focus lead to dismal performance, and that in turn result in guilt in the players who tries to use anger and hostility to dominate others.

Apart from the question of use of anger and hostility, the negative perception of self and the overall negative evaluation of the competitive

situation definitely hinder the natural performance, and the player feels more insecure to face competitions in future.

Anger and hostility being altogether result of aggressive cognition and emotionally directed perception of self and competition situation disrupt the player's positive attitude toward sports-involvement. There are solutions available to resolve the problems caused by excessive use of anger and hostility, as the player can opt for a little break from competitive events, and can undertake psychotherapeutic assistance in order to get re-oriented to reduce his tendency of using reactionary and instrumental aggressions. This would help him to reduce mental and muscle tensions as well, leading to better arousal management and maintenance of attentional focus. These all and better self-perception and reduction in guilt perceptions once again will help the athlete to be in positive side, and to face the competitive situations as and when it is needed.

2.8 Theories of Aggression in Sports

Individuals search for identification, seek emotional stimulation and strive for achievement and status. These cultural behaviors are reflected in sport. It is interesting to note that these specific needs-identification, stimulation and achievement are all served by the generalized drive of aggression (Feibleman, 1963). Two theories for aggression in sports are as follows:

Aggression Theory-1:

If we consider the theoretical position that aggression is instinctive, that our society is predisposed to aggressive behavior, then we can suggest that sport may serve as catharsis. The instinct of aggression operates and allows the stronger to dominate. Our society accepts and encourages a more aggressive, dominant role for male children as opposed to the female. The aggressive instinct exists, the need for its expression has intensified and yet the number and availability of acceptable outlets in society has declined. This natural instinct cannot be ignored, but must be alleviated with positive methods. Competitive games provide an unusually satisfactory outlet for the instinctive aggressive drive. If the theory that aggression is instinctive, that our society is predisposed to aggressive behavior, and that sport can serve as catharsis is accepted, then it may also be concluded that sport has a very positive influence on society. Therefore, according to theory number 1 -

1.Aggression is instinctive.
2.Society is predisposed to aggression.
3.Sport serves as a catharsis.

Aggression Theory-2:

This theory is based upon the beliefs that aggression is a learned behavior, that sport teaches and encourages aggression and that the intense emphasis upon sport participation and association contributes to the competitiveness and resultant violence in our society. According to Alland (1972) aggression is not instinctive, the aggressive tendencies must be cultivated. Sports capitalizes on the teaching of aggressive behavior for retribution, achievement and justice of the game. However aggressive acts rather than the catharsis effect, frequently lead to further aggression and a reduction of inhibitions on subsequent occasions. Therefore, according to theory number 2-

1. Aggression is learned.
2. Sport teach aggression.
3. Sport contribute to a violent society.

UNIT-III

1. Emotional regulation in sports

1.1 Meaning and Types of Emotion

Emotion is an internal state of mind. Emotions are usually created by external stimuli and that emotional expression is directed toward the stimuli in the environment that arouses it. Emotions can activate and direct our behavior. Most of the emotions can be divided into two ways-1) pleasant emotion, i.e. joy, love, happiness, pride, relief, and 2) unpleasant emotion, i.e. sorrow, anger, fear, guilt, disgust. According to Paul Kleinginna and Anna Kleinginna (1981), emotions occur as a result of an interaction between subjective factors, environmental factors, and neural and hormonal processes. In support to this definition, they make the following points:

1. Emotions give rise to affective experiences, such as, pleasure or displeasure.

2. Emotions stimulate us to generate cognitive explanations - to attribute the cause to ourselves or to the environment, for example.

3. Emotions trigger a variety of internal adjustments, such as, increased heart rate.

4. Emotions elicit behaviors that are often, but not always, expressive (laughing or crying), goal-directed (helping or avoiding), and adaptive (removal of a potential threat to our survival).

Another very important function of emotions is to reward and punish behavior. That means, emotions act as reinforces of behavior. When we experience a certain emotion depends on how we appraise a situation. For example, how much stress people experience depends very largely on whether they appraise a situation as a threat or a challenge.

1.2 Meaning and Types of Arousal

Arousal is defined as general physiological and psychological activation of the organism that varies on a continuum from deep sleep to intense excitement. Arousal is the activation of the brain and the body. There are two primary arousal systems: the cortical arousal system and the autonomic arousal system. Cortical arousal controls the cognitive activity i.e. attentive activity, learning, memorizing, decision-making etc. and autonomic arousal control physical activity i.e. to regulate emotional feeling and expression. In sport both cortical and autonomic arousal are required. Because to learn new technique or new skill, cortical arousal is required, as cognitive process is involved and for practice (physical activity) autonomic arousal is required to regulate emotional control over this.

1.3 Meaning and Types of Anxiety

Anxiety can be considered the emotional impact or cognitive dimension of arousal. Anxiety is a common emotion and is thought to be normal as long as it does not become completely debilitating (inhibiting). Anxiety has been viewed as feelings of nervousness and tension associated with activation or arousal of the organism. Therefore, anxiety may be defined as negative emotional feelings characterized by apprehensions, worries caused due to relatively non-threatening events or situations. Anxiety relating to sport psychology is defined both in terms of stable and transient characteristics i.e. trait anxiety and state anxiety.

State Anxiety- State anxiety is an existing or current emotional state, characterized by-feelings of apprehension and tension (negative emotional feeling) and associated with activation of the organism. According to Spielberger (1966), state anxiety is an emotional state characterized by subjective consciously perceived feelings of apprehension and tension, accompanied by or associated with activation or arousal of the autonomic nervous system. State anxiety is the immediate reaction to relatively non-threatening transitory situation.

Trait Anxiety- Trait is a mental structure which accounts for regularly and consistency in behavior, it is a force within an individual or an accumulation of personal experience as a stable predisposition, from which personal action can be perceived for given situations (Cattell, 1950). Trait anxiety is a predisposition to perceive certain environmental stimuli as threatening or non-threatening and to respond to these stimuli with varying levels of state anxiety. According to Spielberger (1966), trait anxiety is a motive or acquired behavioral disposition that predisposes an individual to perceive a wide range of objectively non dangerous circumstances as threatening and to respond to these with state anxiety reactions disproportionate in intensity to the magnitude of the objective danger.

Cognitive Anxiety- Cognitive anxiety is the mental component of anxiety caused by negative expectations about success or by negative self-evaluation.

Somatic Anxiety- Somatic anxiety refers to the physiological and affective elements of the anxiety experience that develop directly from autonomic arousal. Somatic anxiety is defined as perceived physiological arousal.

1.4 Meaning and Types of Stress

Stress is the process that involves the perception of a substantial imbalance between environmental demand and response capabilities when failure to meet demands, is perceived as seriously harmful. Stressful mental state is responded to. with increased levels of cognitive and somatic anxiety state.

According to Selye (1975), stress may be of two types- pleasant stress and unpleasant stress. Pleasant stress is called *eustress* and unpleasant stress is called *distress*. Thereby it indicates that the stress reaction is not necessarily counterproductive. Eustress is sought after by the sensation seekers and risk-takers. The sensation seeking players are able to interpret the anxiety stimulated by threatening and dangerous situations as enjoyable, challenging and exciting i.e. distressful rather than distressful (Harris. 1980).

Differences amongst arousal, anxiety and stress

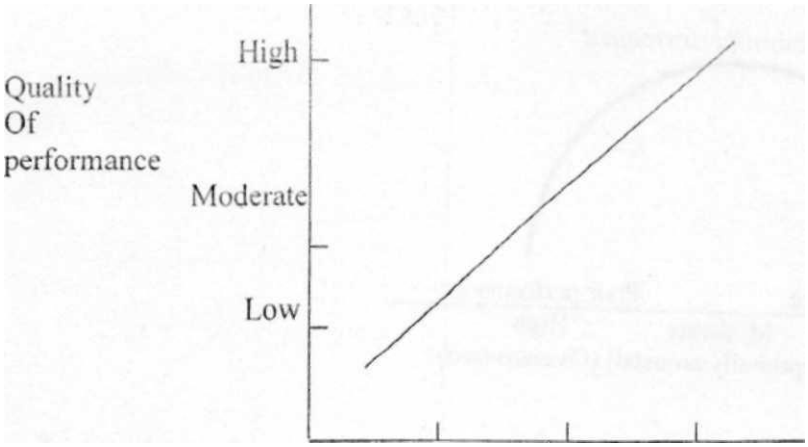
Although anxiety, arousal and stress are terminologically used interchangeably, arousal actually refers to the entire continuum of an individual's psychological activation from deep sleep to very high excitement. Anxiety on the other hand, is restricted only to higher arousal states that produce feelings of discomfort or excessive concern. But stress is the perception of probable failure to meet the situational demands that results in increased level of cognitive and somatic anxiety.

1.5 *ANXIETY - AROUSAL - PEAK PERFORMANCE RELATIONSHIP*

A number of theories and hypotheses have been proposed to account for the relationship between arousal and sports performance or anxiety and sports performance, such as, Drive theory. Inverted u-hypothesis, Hanin's optimal zones of arousal hypothesis. Multidimensional theory of anxiety. Catastrophe theory and Reversal theory.

1.6 Drive Theory

The drive theory originally proposed by Mull (1943). He suggested that performance is a product of drive (motivation and need) and habit strength (well learned skills). Drive is considered synonymous with arousal and habit strength is the dominance of the correct or incorrect response (whether the skill is well learned or novel). Thus the arousal performance relationship can be expressed as the linear relationship— P = H x D



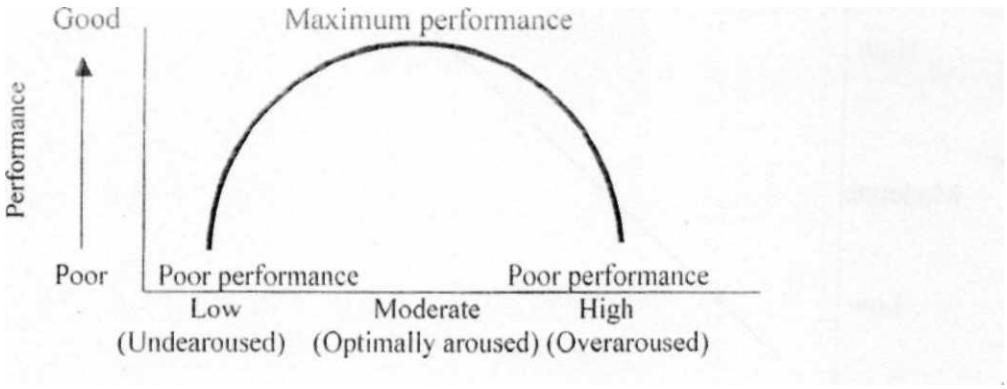
Degree of Arousal

In the early stages of learning, the dominant response would be the incorrect one. So the theory predicts that increased arousal would be detrimental during skill acquision. However, later in the learning process (when a skill well learned), arousal or drive would increase the probability of the dominant "correct' response and performance would thus improve.

Despite early support for the drive theory, there was also a criticism. According to Tobias (1980), the drive theory does not appear to be sufficiently applicable to complex motor tasks.

1.7 THE INVERTED U-HYPOTHESIS

In 1908 Yeark sand Dodson proposed the inverted II hypothesis, which also attempt to explain the relationship between arousal and performance. They suggested that heightened arousal enhanced performance to a certain point, after which continued increases in arousal would lead to a detriment in performance. Thus, the predicted relationship between arousal and performance was curvilinear, taking the shape of an inverted U.



In support of such a relationship. Duffy (1932) noted that a moderate degree of tension offers the greatest advantage, since very high tension tends to be disruptive and very low tension involves lack of alertness of effort. Hebb (1957) developed the theory further when he suggested that there was an optimal level of arousal, that is. a level of arousal at which an individual would perform to his or her maximum potential, neither over aroused nor under aroused. Cox (1990) and others have concluded that moderate levels arousal and anxiety facilitate optimal athletic performance, and athletic performance suffers when arousal levels are either low or high.

Despite receiving some empirical support from sport psychology researchers, the inverted IJ hypothesis has also received some criticisms.

1. The inverted U is only a general prediction, not a theory that explains how, why or when arousal affects performance.

2. The inverted U has also been criticized for an apparent lack of predictive validity in practical situations (Hardy and Fazcy, 1987). They suggest that the relationship between anxiety and performance does not follow the symmetrical inverted U curve, because the two halves of the inverted U curve match only in theory not in reality.

1.8 OPTIMAL ZONES OF AROUSAL HYPOTHESIS

Yuri Hanin (1980) has proposed the zone of optimal functioning (ZOF) state anxiety performance relationship. It is Hanin's contention that one specific optimal level of state anxiety exists that leads to best performance. According to this theory each individual player has a pre-competitive anxiety zone within which he or she functions optimally.

Hanin stated that the zone of optimal arousal hypothesis was designed as a practical tool that could provide reference points and criteria for diagnosis and evaluation of precompetitive state anxiety in athletes. Athletes whose state anxiety fell within their ZOF would be expected to perform better than athletes whose state anxiety was outside of their ZOF. The ZOF theory also has the strength of precisely predicting at what state anxiety levels optimal athletic performance will result.

The main difference between ZOF theory and the inverted U hypothesis is that the ZOF theory staled the specific i.e. state anxiety level of arousal, but inverted U hypothesis stated the general arousal level of the performer.

The criticisms of ZOF theory:

1. There is no explanation has been forwarded to explain why state anxiety influences performance in and out of the ZOF.
2. The ZOF is based on a one-dimensional conception of anxiety although a multidimensional approach may yield more information and add to its predictive potential

1.9 MULTIDIMENSIONAL ANXIETY THEORY

Cognitive anxiety is considered the conscious awareness of unpleasant feelings whereas emotionality or somatic anxiety is defined as perceived physiological arousal. This distinction between these two anxiety components is important because they have been found to relate to test-taking performance differentially (Libert and Morris. 1967). It was suggested that somatic anxiety is a conditioned response to competitive situations and that cognitive anxiety would be reflective of negative expectations, which have been found to have a powerful influence on performance (Bandura, 1977).

Multidimensional anxiety theory predicts that cognitive and somatic anxiety will differentially influence athletic performance (Martens et al. 1990). It predicts a powerful negative linear relationship between cognitive state anxiety and performance and a less powerful inverted U relationship somatic anxiety and performance Could of all (1987) found somatic anxiety to have a curvilinear relationship with pistol shooting performance, supporting the inverted U hypothesis, whereas cognitive anxiety was unrelated to performance. Burton (1988) also found a curvilinear relationship between somatic anxiety and swimming performance but only a negative linear relationship between cognitive anxiety and performance. Increased cognitive anxiety was associated with a detriment in performance.

The limitation of this theory is a lack of consistent empirical support for its precise predictions and a lack of investigations verifying that cognitive anxiety

negatively influences performance via attentional' distraction. Explanations for why and when somatic anxiety influences performance must also be developed.

1.10 CATASTROPHY THEORY

Rene Thorn (1972) developed catastrophe theory and Zeeman (1976) popularized it. The inverted U hypothesis and the catastrophe theory are similar in that both predict that increases in state anxiety will facilitate performance up to an optimal level. However, the two theories differ in what occurs next. The inverted U hypothesis suggests Mai with further increases in anxiety performance will decline in a symmetrical, orderly, curvilinear manner. Thus, slight overanxious will result in slightly hindered performance. In contrast, die catastrophe theory proposes that when an athlete "goes over the top', there will be a large and dramatic decline in performance. Hence, it would be very difficult for athletes to recover from this catastrophe.

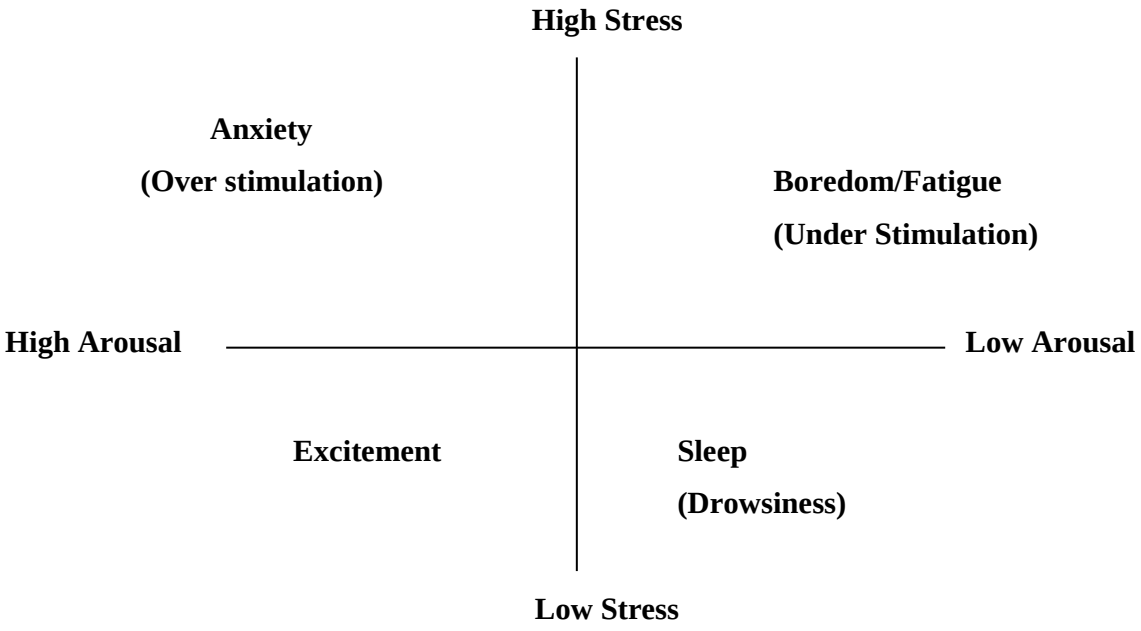
The most commonly applied model of catastrophe theory is "cusp catastrophe model". This is three-dimensional and consists of 1) a normal factor 2) a splitting factor and 3) a dependent variable (Zeeman. 1976). As the normal factor increases, the dependent variable will also increase. According to Hardy and Fazcy(.1987) physiological arousal is the normal factor, which characterized by somatic anxiety and splitting factor is the cognitive anxiety which directly influence on performance i.e. dependent variable.

Athletic performance (the dependent variable) is predicted to be associated with, increases in physiological arousal (the normal factor). However, the effect of physiological arousal on performance is mediated by cognitive anxiety (splitting factor). Thus the relationship between physiological arousal and performance will differ depending on one's level of cognitive anxiety with catastrophic performance effects occurring only when cognitive anxiety is high. the catastrophe theory of anxiety attempted to explain the relationship between arousal-anxiety and athletic performance in most realistic fashion. But the most important problem with this theory lies on its complexity. Further it requires obtaining a large number of assessments on the same athlete over time to test this hypothesis.

1.11 REVERSAL THEORY

Another exciting development applicable to the anxiety-performance literature is the reversal theory, proposed by Smith and Apter (1975) and it popularized by Kerr (1987). This theory focused on the relationship between arousal and emotion. In this theory the relationship between arousal and emotion is dependent upon one's cognitive interpretation. High arousal may be interpreted as excitement (pleasant) or anxiety (unpleasant) and low arousal may be interpreted as relaxation (pleasant) or boredom (unpleasant).

Reversal Theory- Arousal-Stress Continuum (Kerr, 1985)



Kerr (1985), in his application of reversal theory to studying arousal effects in sport, suggests that arousal and stress continua must be viewed jointly and are together related to reversal theory. This results in four quadrants- anxiety, excitement, boredom and relaxation. The horizontal arousal continuum ranges from high to low, and the vertical axis also ranges from high to low. When arousal and stress are high, anxiety or over stimulation results. Boredom or under stimulation occurs when stress is high and arousal is low. Conversely, when stress is low and arousal is high, excitement occurs. When both arousal and stress are low, the result is sleep. Reversal theory, then, has the potential to integrate both stress and arousal. A basic interpretation from reversal theory is that arousal is not necessarily pleasant or unpleasant. Rather, depending on one's motivational state, it can be perceived as a positive or negative.

1.12 Trait Arousal and State Arousal in Sports

Biological component of trait arousal

Arousal is the activation of the brain (the cortex) and the body, which is produced by two primary mechanisms, the reticular activating system (RAS) and the autonomic nervous system (ANS). Sustainable high arousal (when arousal in some

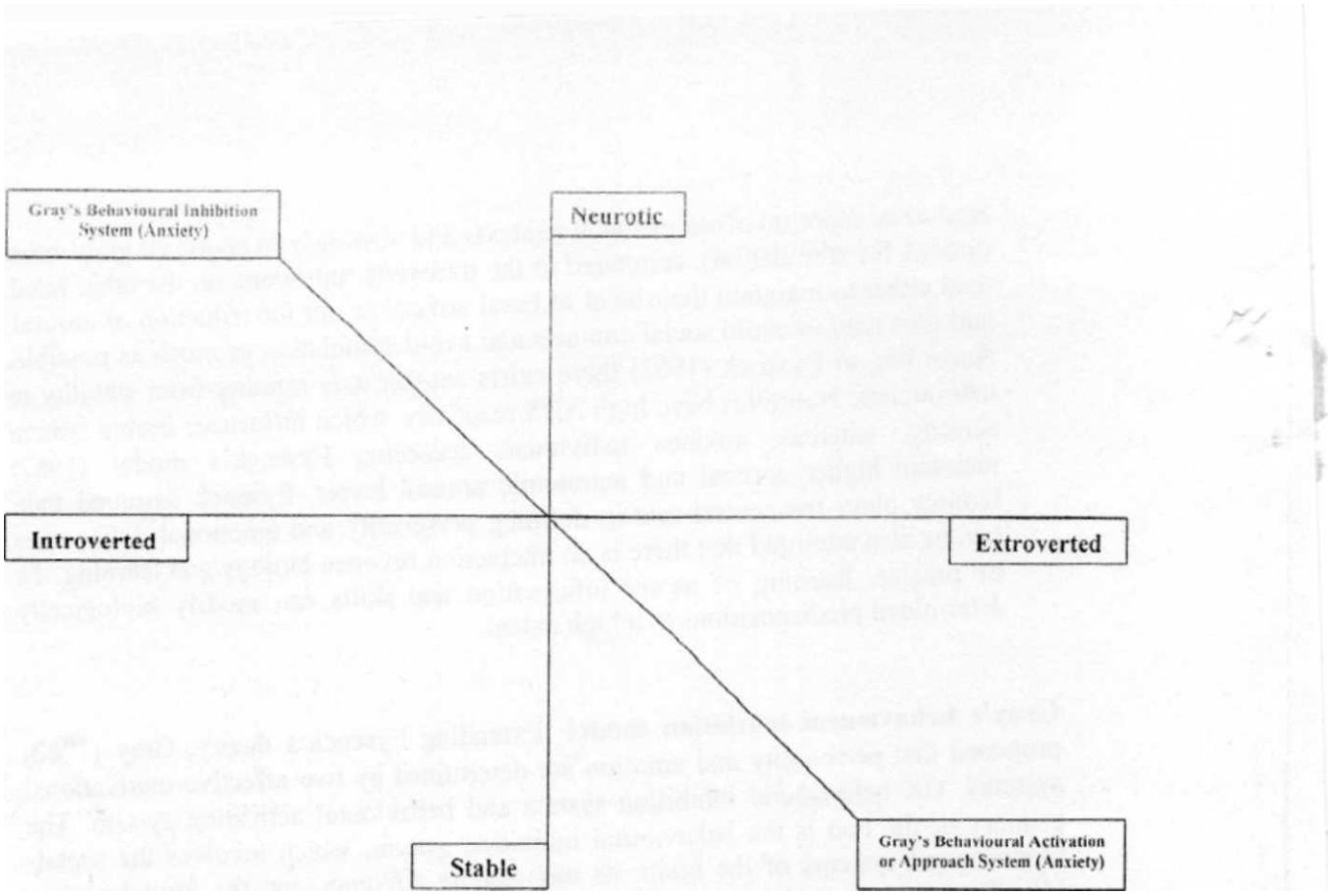
individual remains maintained in higher level for a considerably longer period) is the physiological explanation behind negative emotionality, anxiety and neuroticism (Lader. 1975. 1980 a, b). Anxiety is considered as debilitating when in reality, there is a very little source of danger or threat is observed, and studies suggest that, when anxiety becomes more debilitating (intolerable) it can provoke maintenance of high arousal (produced by both RAS and ANS) in the anxious person. Hence out of majority of clinically anxious population, those diagnosed with anxious predispositions are more susceptible to bear with sustainable hyper arousal, which is hereafter called as 'Trait Arousal" (Izard et al. 1993).

Let us discuss the origin and characteristics of Trait arousal in terms of a few biologically oriented theories-

1. ***Kagan***'s ***timidity theory***- According to Kagan and Snidman (1991). infants and young children tend to differentiate between their tendencies to approach towards unfamiliar people and objects. They described some children as inhibited, who tend to show timidity facing unfamiliar persons and situations, and these children are characterized by higher levels of sympathetic reactivity compared to their uninhibited counterparts who would like to enjoy and explore more and more unfamiliar situations (hereafter called uninhibited children). They argued that, inhibited and uninhibited children differ in thresholds for excitability in amygdala, which results in their disposition to be inhibited or uninhibited, and moreover they belong to two distinct types of genetic origin (inhibited children are offspring of inhibited parents).

2. **Eyscnck's extroversion/introversion theory**- Eysenck (1967) suggested that extroverts have a relatively lower basal arousal compared to introverts, who usually have moderate to high levels of basal arousal. Extroverts thus need more stimulation, and socialization being a key source of more and more arousal they tend to be more involved in social contexts and obviously in sports (it gives more options for stimulation), compared to the introverts. Introverts on the other hand, tend either to maintain their level of basal arousal or opt for reduction of arousal, and thus tend to avoid social contacts and avoid stimulation as much as possible. According to Eysenck (1967) there exists another axis running from stability to neuroticism. Neurotics have high ANS reactivity, which influences limbic system activity, whereas, anxious individuals according Eysenck's model (1967) maintain higher cortical and autonomic arousal levels. Eysenck assumed that, biology plays the central role in defining personality and emotional dimensions but. he also admitted that there is an interaction between biology and learning. To be precise, learning of newer information and skills can modify biologically determined predispositions to a high extent.

Gray's **behavioral inhibition model-** Extending Eysenck's theory, Gray (1982) proposed that personality and emotion are determined by two affective-motivational systems, viz. behavioral inhibition system and behavioral activation system. The primary of the two is the behavioral inhibition system, which involves the septal-hippocampal systems of the brain, its monoamine afferents. and the frontal cortex. Like Kagan et al. (1991), Gray (1982) argued that, stimulation from situations like novelty, no reward, threat of punishment trigger (activate) the inhibition system, that suppresses the ongoing behavior and redirects the attention to the relevant (threat-provoking) stimuli. According to him anxious individuals have active behavioral inhibition system, and that's why they would signs of both introversion and neuroticism. In case of behavioral activation system (Gray 1982), a combination of extroversion and stability would reflect an altogether approaching tendency- which is often called as "impulsivity".



Eysenck's introversion-extroversion and neuroticism-stability axes with Gray's anxiety- impulsivity axis superimposed (Adapted from The Biological Basis of Personality, by H. J. Eysenck (Ed.). Copyright © 1967 by Charles C Thomas.)

3. *Barlow's anxious apprehension model*- David Barlow's model suggested that anxiety tend to make people more and more dysfunctional as a result of a bidirectional effect between arousal and attention (Barlow 1988; Barlow et al. 1996). Negative affect actually causes a shift in attention to a "self-evaluative focus", which results in further increase in arousal and further narrowing of attention. It is some kind of hyper vigilant state (accompanied by intense psychological feelings of worry) in which attention becomes focused on detection of potential threats only. In Barlow's theory, anxious individuals tend to relate unexplained arousal in terms of their negative outlook towards the surroundings as well as towards the world.

The theories discussed so far give an overall impression that, because of biological dispositions, people react differently to their environment. The key factors discussed were- reactivity, timidity, inhibition, or apprehension- all have their roots in biological

makeup. But these dispositions do not cause behavior. High dispositional trait arousal determines certain negative thoughts or behavior with the influence from previously learned experiences and cognitive components. In short, trait anxiety interacts with learning and cognition to determine the final behavioral manifestation.

The learned social component of trait arousal

According to Barlow (1988) most of the anxiety disorders- such as irrational fears, phobias, panic reactions and obsessive-compulsive behaviors- have their roots in generalized anxiety. When people are anxious they associate most of the stimuli as threatening, painful and dangerous.

One of the key features of anxiety is the tendency to be constantly vigilant for potential dangers and threats. According to Beck (1985), when anxious people in high arousal the affective system leads them to consider their environment as a cruel one. The behavioral inhibition system in them leads them to focus on potentially dangerous sources of stimuli. Thus they tend to process more and more negative aspects of life and environment and gradually develop a negatively oriented schema of their environment, meaning that everything in surrounding is bad or dangerous or worthless, and nothing seems to be encouraging and fruitful. Once the cognitive schema is formed, even when the physiological arousal level goes down, the anxious persons continue only to search for dangerous, unfortunate and bad happenings. Gradually these schemas about the bad and dangerous surroundings, lead them to a completely negative perception of the surroundings, wherein the inhibited and anxious people perceives themselves as incapable of performing better. Since they can't change the bad and unfortunate world, they gradually deny acting upon and trying, which lead them to depression.

Beck argued that the cognitive appraisal of the bad world has roots in the past information processing, which had some negative emotional contents. In childhood some anxious parents and other seniors continuously try to monitor their kids and try to alert them about possible dangers, which lead the children to develop a schema about the dangerousness of their surroundings. Gradually they learn to develop more negative perspective about their surroundings, and get biased about similar kinds of situations outside their surroundings, and this formation of newer schemas with negative perspectives lead them to perceive the world with altogether negative perspectives. That's how the clinically anxious and depressive persons perceive and deal with the world.

The cognitive component of trait arousal

Spielberger (1985) argued that, the experiences of anxiety depend on how people appraise about their world. Some events accompanied by heightened ANS arousal provokes us to appraise (interpret) about them

very seriously. If the event is appraised as dangerous, we feel afraid or anxious, otherwise with opposite kinds of appraisals we may perceive the event as challenging too, and we can respond with a sense of mastery.

According to cognitive theories, anxiety is a personality trail. Cognitive schemas of negative perspectives can cause anxiety, but the major problem of cognitive theories is the inability to explain the reasons behind irrational anxiety. Often people know that their reactions are inappropriate or irrational but are unable to control them.

Despite such problems, cognitive theories suggest ways to minimize errors in action plans, and to maximize our possibilities to search for newer ways to meet challenges or to deal effectively with failures. Thus we get more options to get us prepared for peak performances. Our goal-directed attempts depend on our cognitive appraisal of the competitive situation, and depending on the appraisal we engage ourselves in more and more approach/adaptive behaviors or avoidant/non adaptive behaviors.

Beck suggested that schemas are learned, but the methods for changing those schemas are cognitive. Beck's (1985, 1991) studies further suggested that, if people are given cognitive retraining to alter the non-adaptive thoughts into more adaptive ones, they can respond more positively.

High Trait Arousal and Performance

High trait arousal is always viewed as a major obstacle for peak performance. One of the major problems for the anxious persons is not being able to focus their attention on the task; instead they tend to focus on the potential threats, potential difficulties and on their own problems. In order to prevent these anxiety-focusing or threat-focusing attempts, the performers could be trained to appraise the positive aspects at hand and the available coping resources to perceive the situation more positively.

People born with anxious predispositions could be trained to alter their schemata or hidden assumptions about their world with more positive outlook. The real idea is to alter the anxious perception and apprehension of relatively non-threatening situations into an altogether positive perception.

Anxious individuals always tend to overgeneralize (oversimplify) following failure. Instead of accepting failure as the outcome of a specific situation, they tend to conclude that all of the future competitive situations are going to end up with failures too. Development of a positive assumption can help to resolve this problem.

Anxious players also need to develop the faith in them that, they can really bring effective changes to make things better for themselves, and they can perform better even under pressure. Researches showed that, players with good coping skills experience far less amount of anxiety than people with poor coping skills.

In addition to all the anxious players and persons need to know that, high arousal is necessary for peak performance. High arousal could also be experienced as positive emotion. Our perception of high arousal as negative or positive actually depends on whether we view the situation as a threat or a challenge. Peak performance involves rising to the challenge. Thus learning to appraise the situation in more positive ways can help anxious individuals to deal with their high arousal.
Finally, one has to realize that too high arousal for a longer time certainly develops stress reaction. Hence, the players and anxious persons in general must need to learn how to rest and relax.

State Arousal

The transient nature of arousal and the individual's perception of alteration in his/her own level of arousal prompted to reconsider the question of state arousal It mostly deals with the effect of environmental stimulation on attention and. hence on peak performance. Too much of stimulation causes sensor}' overload, which if prolonged can result into stress, and hence, can put debilitating effects on emotion and health and can disrupt peak performance.

The Biological component

There are two definite factors responsible for fluctuations of arousal.
1. Rhythmic activity of the nervous system - Cortical arousal is generally controlled by certain biological rhythms. Michel Jouvets (1967) work suggested that, the alternating activity of raphe nuclei in mid brain, secrets serotonin, and the locus coeruleus secrets norepinephrine, and these secretions govern arousal and alertness in humans. Serotonin reduces cortical activation (arousal), while norepinephrine increases cortical activity.

2. Stimulation of the sensory systems- Stimulation of any of the sensory systems (visual, auditory etc.) increases our arousal level. This increased arousal actually helps us in accurate information processing. This neural processing system follows an all-or-none law. If suddenly lots of stimulation arouse us, our neural processing systems try to process, and when gets over-worked gets confused and eventually processes none.

The concept of sensory overload-

When we process information, we develop some schemas, and we try to relate other schemas with the newly developed ones, to form some units of similar information, hereafter called as "chunks". We can maximally process seven chunks at a time. If there is a need to develop more chunks, or to process more numbers of information, we simply get overloaded, which reduces or cortical performance.

Sensory overload and performance-

Sensory overload increases the level of basal arousal, and that can lead to attentional narrowing. Sensory overload also produces huge numbers of cognitive dissonances, which in turn lead to further narrowing of attention. When player tries to face competition, or a person faces some kind of testing (examination), s/he receives numerous stimuli, which can cause sensory overload. This perception of overload, accompanied with the competitive orientation (high need to win) gets over-whelmed with the cognitive and cortical burden of the task, which damage performance.

1.13 Fear of Success Phobia

Failure is something most obvious in the field of games and sports. Whenever a player tries to learn or adapt to a newer skill or technique, or even when they try to achieve mastery with regard to a previously learned skill (either during training session or in some practice-match situation) the most usual outcome happens with the failure to produce optimally correct performance of the learned skill. Hence, practically it is mostly certain that, failure to achieve mastery over any or some skills may be the outcome at the end. Thus, everybody learns to accept the reality of failure to perform certain skills accurately in the field of sports. It happens mostly during some challenging practice sessions, or during some competitive match-situations. Thus, failure to perform any particular skill or a part of skill becomes an obvious outcome of the performance in case of most of the players (for example, performing accurately in a penalty-corner situation in the game of filed-hockey). In penalty-corner situations, one-player is supposed to push the ball from the penalty-corner spot to a second player (one of the team-mates), and he is supposed to stop the ball and a third one is supposed to hit the ball to score a goal. These penalty-corner situations are considered as highly rewarding situation, since it is more likely to convert those penalty-corners to score goals. But, usually it is seen that players in the game of hockey have problems in converting those penalty corners into goals. Here, the question concerns with the technical issues regarding the training strategies, but that being the part of the qualified trainers it is understood that the players perform the task of penalty-corners with optimal training already given to them. The question *of Fear of Success Phobia* does not relate to the fear or anxious apprehension of the players who cannot perform the task very well owing to lack of practice; or lack of training; or owing to excessive amount of tension relating to failure. It is the mental state, that matters to the successful players who are habitually capable of handling their faults in the field and can maintain their regular successful performance. Once successful performance becomes a habitual response, the achievement of success becomes a burden. Not only that, all other factors like situational demand of maintaining high performance on a regular basis; withstanding peer-pressure or the pressure from the supporters or fans; pressure from

club-officials and coaches; pressure from the immediate relatives like parents or wife etc. creates immense pressure on the successful sportsman to perform up to the greatest level of achievement. Sports and games situations being a unique field of activity wherein performance-requirement varies in every moment, and every situation becomes characteristically unique and different from most other situations-maintenance of high performance becomes a matter of tremendous pressure, in which everything is unpredictable but the player needs to keep his will to perform great; or he needs to keep his motive to achieve success intact. This being the situation, most of the players face crisis with achieving and maintaining high performance. But. once high performance is achieved more or less on a regular basis, it becomes a great trouble for the high achievers, since his or her own performance standards (high performance records) carry the most pressure, and unconsciously sets up the newer goals of high performance for the player. This situation gives rise to the feeling of unconscious fear of success phobia in the high achiever players.

2. Psychophysiological Aspects of Sports

2.1 Autonomic Reactivity in Sports

Sports situations are always accompanied with lots of challenges and crises involving huge extent of heightened levels of emotionality. These emotional demands in human beings are entirely regulated and monitored by the autonomic nervous system and its accompanying limbic structures existing in brain. Hence, the question of autonomic reactivity in sports involve the extent of autonomic regulation during actual competitive sports situation ranging from minimal or negligible emotional control to the adequate level of autonomic nervous system activation helping the individual player to perform best in the sports field.

This autonomic activation happens in following two types of neural mechanisms following sympathetic and parasympathetic levels of activation. During highly arousing sports situations demanding -alert-concentrations; split-second timing; vigilant activity of the goal-keepers in the game of Hockey; vigil movements of the wicket-keepers in Cricket etc. - sympathetic activations takes over the neural processes involved to cover an extra-edge over the challenges faced with. Definitely in other situations of decision-making; analyzing one's own faults; analyzing an opponent's movements; planning a goal-directed movements aiming at achievement of a long-awaited success-the parasympathetic autonomic process guides the inner mechanism of the player.

Most of the sports situations are compiled with bouts of alert and challenging situations and very-specific decision-making and/or analytical situations at the same time. Hence, the questions of effective utilization of both the systems are required, and the change-over from one system to the other is very significant, for there involves the delay-time for neural-processing which are the concerns for the expert psycho

physiologist, only who can tune-up the players to meet the challenges as and when it is required.

2.2 Arousal Modulation in Alertness

Alertness in sports situations demands both the internal and external focus of attention, with extremely narrow or specific focus. Also, alertness in sports signifies both covert (i.e., mental or attentional) and overt (i.e. behavioral or motor) activity involved processes occurring simultaneously in the player during any challenging sports situation.

Hence, for the covert attentional processes the heightened level of cognitive competence demands enhanced cortical activation in the ascending reticular activation system (ARASJ, wherein sensory impulses are interpreted and the internal-narrow focus of attention gives rise to adequate emotional upsurge resulting into both heightened descending reticular activating system (DRAS) and heightened autonomic activation leading towards split-second timing related agile movements. Close-fielding in cricket (such as in slip positions and wicket-keeping); soccer and hockey goal-keeping; sharp position changes in soccer, basketball, volleyball, tennis, table-tennis and hockey etc. and in all sprint activities in athletics and in swimming; jump-activities and all other explosive muscle movement-related agile activities are the good examples of alert activation in sports. In case of all of those above-mentioned sports activity related situations arousal modulation in alert situations happens following the systems described above.

2.3 Nature of Arousal in Peripheral Nervous System (PNS)

The peripheral nervous system consists of the nerves that branch out from the brain and spinal cord. These nerves form the communication network between the CNS and the body parts. The peripheral nervous system is further subdivided into the somatic nervous system and the autonomic nervous system. The somatic nervous system consists of nerves that go to the skin and the muscles and is involved in conscious activities. The autonomic nervous system consists of nerves that connect the CNS to the visceral organs, such as, the heart, stomach, and intestines. It mediates unconscious activities.

Arousal in PNS in the one hand essentially means heightened level of activation in the sensory neurons running from receptor organs like -eyes, ears etc. sense organs to the brain and the spinal cord (parts of Central NS), those prepare the CNS parts to analyze and re-direct the neural impulses to the motor-cortex. Then, the other part of PNS arousal pertains to the activation of the motor neurons running from the CNS to the muscles and glands to take necessary action, or appropriate reactions to the stimuli.

Since, PNS is subdivided into the Sensory-Somatic NS and Autonomic NS, the heightened level of emotionality caused by ANS and its Sympathetic and parasympathetic level of activities are not discussed here once again.

The Sensory-Somatic NS consists of 12 pairs of Cranial nerves and 31 pairs of Spinal nerves. The cranial nerves are connected to the sense organs and other significant bodily functions. Hence, arousal in PNS means heightened activation in all of those body parts depending on the nature of the stimulation at hand.

Using psychophysiological measuring tools such as EDA or GSR, and EMG assesses PNS arousal. Since in sports activities all of our sensory-motor systems and ANS arousal are essential, appropriate estimation of GSR and or EMG changes in individual players are mostly important to take care of the excessive amount of stress happens in them and thereby ensuring their high performance in games.

2.4 Reticular Activating System (RAS) in Sports

Arousal is the activation of brain and body. When we are aroused, the brain and the body are in a state of readiness, so that we are prepared to engage in adaptive behaviors. There are two primary arousal systems: the cortical arousal system and the autonomic nervous system. The reticular activating system (RAS) is largely responsible for cortical arousal. The RAS system divided in two ways- ascending reticular activating system (ARAS) and descending reticular activating system (DRAS).

Each of the various sensory receptors (visual, auditory, tactile and so on) is connected to a sensory area in the brain via an afferent nerve pathway that ascends to the cortex. When sensory information stimulates this system, it responds by activating the brain. Research on the RAS has shown that, unless the cortex is optimally aroused, sensory signals going to the cortex will not be recognized or processed. If the cortex is optimally aroused, it will quickly recognize signals and efficiently process incoming information. The RAS also has a descending tract, which influences motor functions. RAS may be in part responsible for the improvement in the speed and coordination of reactions under higher levels of arousal.

Increment in arousal puts an athlete a state of readiness, wherein he is not only able to process more sensory information but also are able to process those better. Furthermore, better integration of received information with past memories is possible. Finally, because descending RAS has activated the motor cortex, an athlete can make more appropriate response both rapidly and accurately. Eysenck postulated that extrovert athletes are chronically under aroused and the introvert athletes are chronically over aroused. In other words, in extroverts the ARAS are tensed to be inhibitory and in introverts excitatory in its effects on cortical arousal. Hence, introverts constantly attempt to reduce stimulation, whereas extroverts are stimulus hungry.

UNIT-IV

1. Goal Setting and Motivation in Sports

1.1 Concept of Goal Setting

Goal setting is the process of selecting desirable targets or objectives. The targets or objectives are usually called goals. Goal setting is generally most effective when goals are selected in a way which ensures that they are specific, measurable, meaningful and challenging for the athlete. Goals are effective because they influence psychological states, such as self-confidence, direct attention to important aspects of the task, mobilize effort, increase persistence, and foster the development of new learning strategies.

Many people define a goal as an objective, a standard, an aim of some action, or a level of performance or proficiency. An objective goal is a desire to attain a specific standard of proficiency on a task, usually within a specified time. There is a difference between subjective and objective goals. Subjective goals are general statement of intent (e.g. I want to do well, I want to have a fun), but not measurable, objective terms. In contrast, objective goals focus on "attaining a specific standard of proficiency on a task, usually within a specific time[1] (Locke, 1981). This definition of objective goals includes outcome, performance and process goals.

Outcome goals focus on a competitive result of an event, such as winning a race, earning a medal or scoring more points than an opponent. Thus, achieving these goals depends not only on your own efforts but also on the ability and play of your opponent. You could play the best tennis match of your life and still lose and thus fail to achieve your outcome goal of winning the match.

Performance goals focus on achieving standards or performance objectives independently to other competitors, usually making comparisons with one's own previous performance, for this reason performance goals tend to be more flexible and within your control. Running a distance in a specific time or improving the percentage of successful free throw in basketball from 70% to 80% would be examples of performance goals.

Process goals locus on the actions an individual must engage in during performance to execute or perform well. For example, a swimmer may set a goal of maintaining a long stretch of arm pull in her freestyle stroke.

It is important that sports persons set outcome, performance and process goals. Al! three play important roles in directing behavioral change. Outcome goals can facilitate short term motivation away from the competition. Focusing on outcome goals just before or during competition, however, often leads to increased anxiety and irrelevant, distracting thoughts, e.g. an athlete worry too much about the score of the game and doesn't focus enough on the task at hand.

Performance and process goals are important because you usually can make much more precise adjustments to these goals. Achieving a performance or process goal also depends much less on your opponent's behavior. For these reasons, performance and process goals are particularly useful for athletes at the time of competition, although they should be used in practice as well.

1.2 Importance of Goal setting

Researchers have two ways to explain how goals influence behavior:

A) **The direct mechanistic view:** The direct mechanistic view specifies that goals influence performance in one of four ways (Locke and Latham, 1985) -
1. Goals direct attention to important elements of the skill being performed.
2. Goals mobilize performer effort.
3. Goals prolong performer persistence.
4.Goals foster the development of new learning strategies.

B) The indirect thought-process view: The indirect thought process view proposes that goals influence performance indirectly by affecting a performer's psychological state, including such factors- confidence level, anxiety and satisfaction (Burton, 1984; Garland, 1985). Burton (1989b) contends that athletes who set outcome goals, experience more anxiety and lower self confidence in competition because their goals are not within their complete control. In contrast athletes who set performance goals experience less anxiety and enhanced self-confidence because their goals do not depend on their opponent's behavior, only on their own.

1.3 Goal setting Guidelines or Principles of Goal Setting

A number of basic goal setting principles can be identified from research and practice (Gould, 1998; Murphy, 1996). The correct application of these principles provides a strong foundation for designing goal setting program. Principle of goal setting are as follows:

1. Set specific goals.
2. Set moderately difficult but realistic goals.
3. Set long and short term goals.
4. Set performance and process, as well as outcome goals.
5. Set practice and competition goal.
6. Records goal.
7. Develop goal achievement strategies.

8. Consider the participant's personality and motivation.
9. Foster an individual's goal commitment.
10. Set positive goals as opposed to negative goals.
11. Provide support for goal.
12. Provide for goal evaluation.

1. Set specific goals:

Specific goals affect behavioral change more effectively than general 'do your best' goals. Goals should be stated in very specific measurable and behavioral terms. For example, a goal to improve your game is too vague. A better goal would be to improve your free shots in basketball from 6 to 8 out of 10.

2. Set moderately difficult but realistic goals:

Effective goals are difficult enough to challenge a participant, yet realistic enough to achieve. Landers (1995) found that 'moderately difficult' goals lead to best performance, goals are of little value if no effort is needed to achieve them, and participants soon lose their interest in the goal setting program. But goal threats are too difficult to achieve lead to frustration, reduced confidence, and poor performance, the secret is to strike a balance between goal challenge and achieve ability, which is no easy task. Professionals must know the capabilities and commitment of the individuals they are working with.

3. Set long and short term goals:

Major behavioral change docs not occur overnight. Thus, both long and short term goals should be set. Focusing only on long term goals does not improve performance, think of a long term goal to reach at the top and the present level of ability at the lowest level. There is a need for sequence of progressively linked, short term goals connecting the top level from the bottom level. Thus, the coach charted a progression of skills or short term goals that would prepare the young sports persons to achieve the next test level. The goal setting has to be documented/posted and each time a sports person masters a particular skill, it has to be recognized by the coach until all the sub goals were accomplished and the long term goal becomes achievable. Short and long term goals should be linked. Terry Orlick (1986) developed a program that links a sports person's long term goals with a series of more immediate, short term physical and psychological goals. The program also creates a progression of goals, starting with some that can be achieved immediately and leading to more difficult and distant objectives.

4. Set performance and process, as *well* as outcome goatee:

It is difficult not to think about winning or how your performance compares with others. After all, winning and losing receive much more attention from others than do an individual's personal goal achievements. Not surprisingly, then athletes often cite as their goals such outcomes as winning games, winning championships or beating particular opponents.

The key, then, is to continually emphasize performance and process goals. For every outcome goal a sports person sets there should be several performances and process goals that would lead to that outcome. For example, if a coach is working with the members of a junior high school football team who want to win the city championship, he should emphasize the relevant performance goals of improving attack and defense strategies and shooting percentage. In addition, he should emphasize process goals, such as the player's improving their sliding technique and tactical improvement, both in practice and then in games. Encourage efforts to achieve these goals and chart progress toward them throughout the season.

5. Set practice and competition goal:

It is important that goals be set for both practices and, competitions. Too often however, sports persons and coaches focus only on competition goals. Setting practice goals is important because of the large amount of time sports persons spend practicing and the potential the long hours of practice have of becoming boring to some individuals. Setting practice goals is a good way to get a competitive edge by focusing on making improvements that one may normally work on and by maintaining motivation.

6. Records goal:

Several sports psychologists (Botterial, 1983; McClements, 1982) have recommended that once goals are set, they should be recorded and placed where they can be easily seen. There is a lot of ways to record goals. Sports persons can simply write down their goals on *3*- by 5 cards or they can formulate complex behavioral goals. No one strategy is optimal. However, the more efficient the method of recording, the more useful it is. For example, writing down goals on a card and pasting the card on the bedroom mirror at home is more effective ant time efficient. Sports persons who use training diaries often find it useful to include sections where they record goals and their progress toward them.

7. Develop goal achievement strategies:

Setting goals without developing corresponding goal achievement strategies is again of not much use. Sports person and coach must have strategies to accompany the goals set by them. Participating in a walking program that burns 2500 calories a week is a strategy to achieve a weight loss goal of 20 pounds in 5 months. Strategies should be

specific and indicate how much and how often they are to be performed. Sports person should build flexible into their goal achievement strategies. Instead of saying they will do weight training on Monday, Thursday and Saturday, it is better to say they will do it 3 days a week. That way, if an individual cannot do on one of the designated days, he can do on another day and still achieve his goal.

8. Consider the participant's personality and motivation:

When goals for sports persons are set for achievement, it is important to consider their personalities. An individual's motivation and goal orientations influence the goals, she /he adopts and how well the goal setting process functions. High achievers, whose personalities are characterized by high levels of the motive to achieve success and low levels of the motive to avoid failure, will readily seek out and adopt challenging but realistic goals. In contrast, low achievers with high levels of the motive to avoid failure and low levels of the motive to achieve success will avoid challenging goals and seek to adopt either very easy or very difficult goals. Understanding and recognizing these personality differences will help the coach to know what to expect from the players he helps set goals for.

9. Foster an individual's goal commitment:

A sports person will not achieve a goal without commitment to achieving it. Coaches should promote goal commitment by encouraging progress and providing consistent feedback. Teachers or coaches should not set their students or athletes goals for them either directly or indirectly. Instead, make your participants part of the goal setting process by providing their suggestion and letting them set their own goals.

10. Set positive goals as opposed to negative goals:

Goals can be stated in either positive (e.g. increase the percentage of good first serves in tennis) or negative terms (e.g. decrease the percentage of bad first serves in tennis). Although it is sometimes necessary for athletes to set goals in negative terms, it has been suggested that, whenever possible, goals should be positively. That is identifying behavior to be exhibited as opposed to behaviors that should not be exhibited. This positive goal setting procedure helps athletes focus on success instead of failure.

11. Provide support for goal:

A goal setting program will not succeed unless those individuals who are paramount in the athlete's life support it. This typically includes the coach, the athlete's family and teammates. Therefore, efforts must be made to educate these individuals as to the types of goals the athletes set and the importance of their support in encouraging progress toward the goals. For instance, if an athletes set performance goal as opposed to outcome goal but significant others in the athlete's life only stress the outcome of the game or match, it is unlikely that performance goal will change behavior. Simply stated, significant others must understand the goal setting process and support it.

12. Provide for goal evaluation:

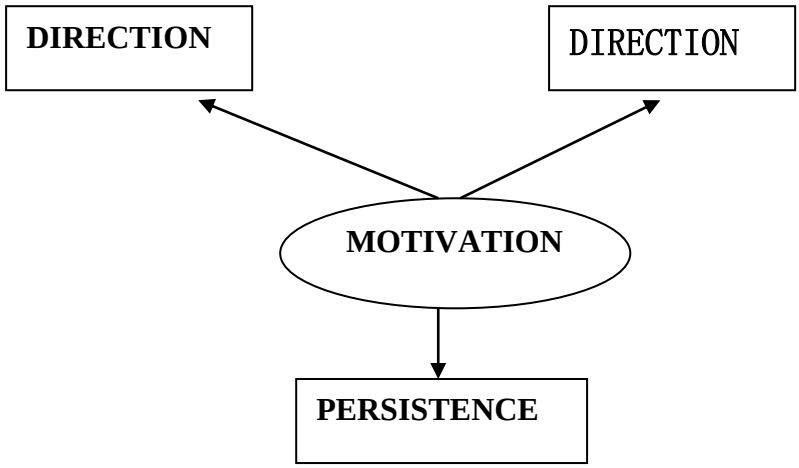
Based on their review of the research, Locke and his associates (1981) concluded that evaluative feedback is absolutely necessary if goals are to enhance performance, therefore, athletes must receive feedback about how present performance is related to both short and long range goals. In many cases, feedback in the form of performance statistics like batting average, goals scored are readily available. Other goals however require that coaches make special efforts to provide evaluation feedback. For instance, a coach helping an athlete controls his /her temper on the field may have a manager record the number of times the player loses his/her temper in practice.

Goal setting is not a difficult psychological technique, but this doesn't mean that problem will not arise in implementation a goal setting (Gould. 1998). Common problems that arise when goal setting must be recognized. These include setting too many goals to soon, failing to recognize individual differences, setting goals that are too general, failing to modify unrealistic goals, failing to set performance goals, not understanding the time and commitment needed to implement a goal setting program, setting only technique related goals, and failing to create a supportive goal setting atmosphere. These problems can be easily avoided or controlled if they are recognized at the onset of the goal setting process.

Like other psychological skills, goal setting is not a magic formula that guarantees success. Goal setting is a tool, a very effective tool, that when combined with hard work discipline can help coaches, athletes and sports psychologists reap the fruits of personal athletic growth and peak performance. It is highly recommended, then, that coaches and sport psychologists at all levels of competition engage in goal setting with their athletes.

2.4 Meaning of Motivation

Motivation is one of the most important factors in training and influences the outcome of the competition. Motivation is an abstract concept and a very complex behavior that cannot be observed as such. Only behavior, resulting from it can be observed, measured, recorded and labeled. The term motivation is used in more varied ways in daily life. Motivation can be defined as the processes that give a behavior its energy and direction. It also can be defined as the direction and intensity of one's effort. The direction of effort refers to whether an individual approaches or is attracted or interested to certain situations, that means, choosing a goal. Intensity of effort means how much effort a person gives in a particular situation to accomplish the behavior. Intensity is concerned with how activated or energized the person is e.g. how much effort is being made to reach a certain goal. Another important dimension of motivation is the persistence. Persistence indicates how long the individual will continue or make an effort to achieve the goal. Therefore, motivation can be defined as the direction, intensity and persistence in the behavior of an individual (Duffy, 1950). Carron (1988) stated that motivation is the term used to represent the reasons why certain actions are chosen over others, carried out with energy and enthusiasm and adhered to with a high level of commitment.



It is important for the understanding of motivational process to be clear about few more terms related to motivation.

Need: It refers to some kind of want or deficit or lack of something in the body. There are two types of needs- basic and acquired.

Drive: It is used to signify arousal conditions of the organism and is usually the result of some need or deficit within the body.

Motive: A motive is a relative, general and stable disposition of personality, which is a decisive part of motivation. It is a state within an organism that energizes and directs its

behavior towards a particular goal. A motive indicates the reasons for a course of action and thus it answers the question "Why"? it is important to understand that

several ofthe.se determinants can exists for each person and it is the interaction of these determinants that influences behavior. These determinants can be personal, social or emotional in nature.

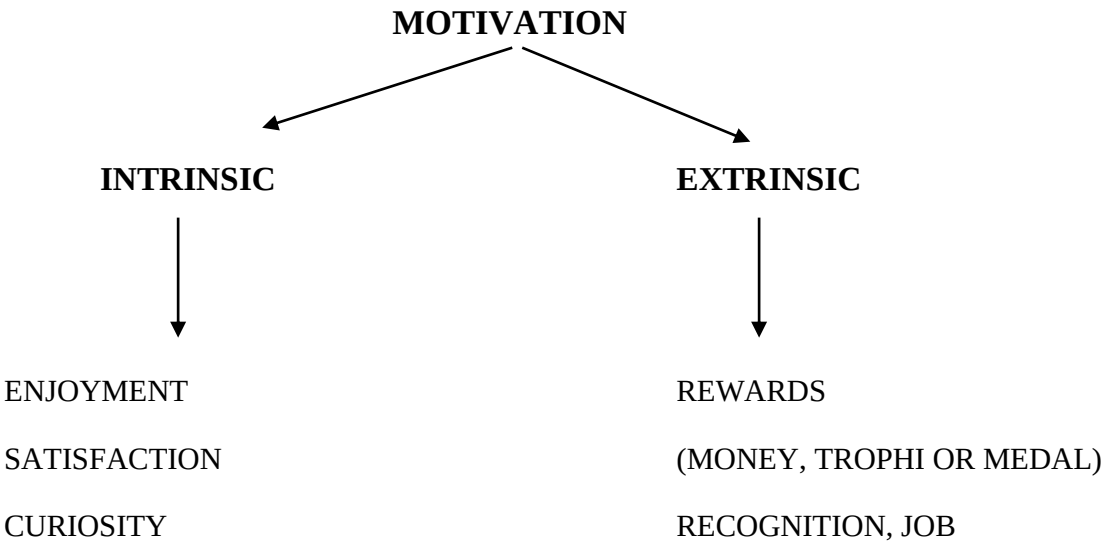
Motives are specific to persons and stable in nature and motivation is specific to situation and changeable. Therefore, the sports persons' motivational level is determined by the interaction of personal factors such as personality, needs, interest, attitudes and abilities as well as situational factors such as practice facilities, coaching style, team or group, winning losing experiences etc.

2.5 Types of Motivation

There are two types of motivation- 1. Intrinsic Motivation and 2. Extrinsic Motivation. Generally, when athletes begin participation in a particular sport, they are motivated by both intrinsic and extrinsic factors.

1.Intrinsic Motivation:

Intrinsic motivations are motivating forces that come from the inside of the athlete. They do something extra-ordinary; because it makes them feel good or they develop a sense of pride after reach a goal. In relation to participation in sports, intrinsic motivation can be derived from the enjoyment and satisfaction of playing in physical activity. Intrinsic motivation is when an individual truly loves the activity itself. Because of the enjoyment he or she receives from doing it. People who are intrinsically motivated have an inner desire to be competent and self-determining to master the task, to be successful. These qualities of competence, self-determination, mastery, self-worth and success are goals persuaded by those who are intrinsically motivated. To be intrinsically motivated a player must feel free from pressures, such as, rewards or contingencies. The emotions of interest, plays an important role in intrinsic motivated behavior.



2.Extrinsic Motivation-

Extrinsic motivation comes from outside, such ay, money or rewards (trophies and medals). It may be defined as forces that come from outside of the motivated individual, which encourage or influence the person to engage in behavior because the person either is rewarded for doing so. or is threatened with punishment for not doing so. Extrinsic motivation comes from other people through positive or negative reinforcements. These reinforcements may be tangible items, such as trophies or money or intangible items, such as praise, status and public recognition.

A person's motivation may be both intrinsic and extrinsic at the same time. Athletic participation in sports however occurs like just opposite to each other at any competitive moment. That means, a performer may be both intrinsically and extrinsically motivated to any competitive situation. Intrinsic motivation alone is the cause of excellent performance, but the extrinsic motivation may help them in motivating themselves for continuous successful performance.

2.6 Biological Basis of Motivation:

Discussions related to biological components interplaying as the basis of motivation should consider different aspects of motivation such as exploratory behavior; sensation-seeking behavior; creativity; achievement motivation.

1.Biological basis of curiosity and exploratory behavior:

Kagan and Snidman (1991) reported that some children are inhibited who show behavioral manifestations of timidity, and other are uninhibited, who characteristically show curiosity and exploratory behaviors. They reported these two different temperaments are inherited. Extroversion tendencies related to novelty seeking and exploratory behavior could be explained as excitatory potential sensory processing

(EPSP) in both ascending and descending reticular activation system (ARAS & DRAS).

2. Biological basis of sensation-seeking behavior:

Zuckermaa (1983) and Farley (1986) suggested that, sensation-seeking behavior is inherited. Apart from that Zuckerman's study (1979) reported that, high sensation-seekers are characterized by low MAO (Monoaminc Oxidase is an enzyme, important for regulation) levels, and they have a tendency to have higher secretion of norepinephrine. Frank Farley's stud}[1] (1986), reported sensation-seeking behavior is also related to heightened levels of testosterone. In sports, sensation-seekers are mostly observed to perform better than average level of players, but often because of their sensation-seeking and risk-taking attitudes they and up with poor performances. Though reasons are not yet clear but sensation-seeking tendency is much higher in male adolescents and young adults. compared to the female counterparts, and these sensation seeking tendencies diminish with age.

3. Biological basis of creativity:

No particular neurobiological or neurochemical pathways have been discovered so far to explain creativity. The studies of De Bono (1987) and Langer (1989) however, reported that though clear-cut brain-circuitry have not yet been mapped out, the adaptive processes occur in neocortex and association areas of cerebral cortex could be responsible for higher-order adaptive responses that occur with a need for self-actualization.

4. Biological basis of predictability and control in motivation:

Twin studies employing self-report measures (Rotter's Locus of Control Scale) have found that there is genetic basis for one individuals' sense of persona! control. Studies also reported greater association between inheritance and a person's feeling of misfortunes in life (Pederson et al 1989).

5. Biological basis of sense of mastery and achievement motivation:

So far no brain centers or neurotransmitter or neurochemical mechanisms have been identified to explain the sense of mastery and need for achievement of success or the need to avoid failure. McClelland and others (1985) have argued that achievement motives and the need for mastery, and persistence are more primary biologically adaptive behavior, and hence could be explained by arousal mechanisms. Our previous studies (Saha et al 2001, 2002 and 2005) defined role of autonomic arousal modulation in predicting achievement motive and persistence behavior in soccer and other players rigorously studied amongst participant players in the Indian sub-continent.

To conclude on biological basis of motivation, it may be said that role of inheritance and a number of neurochemical and hormonal processes have so far been identified as influencing motivational behavior. Earlier conceptions of drive levels and adaptive biological systems are also viewed as probable explanations for different kinds of behavioral aspects related to motivation. But our studies on sports population pointed out definite roles of autonomic arousal system in predicting motivated behavior, which raise questions that yet a lot must be done to arrive at some definite conclusions about biological basis of motivation.

1.7 Endorphins and Motivation

In human brain there are specific receptors for endogenous (body's own production of opiates) opiates, which are called as endorphins (endogenous morphine). The primary task of endorphins is reduction of stress in any form, but apart from that, endorphins play important role in a wide variety of behaviors related to motivation.

1.Relief of pain - Endorphins kill physical pain. It also helps in reduction of psychological pain, such as stress, and alters mood and removes symptoms of stress. Thus it also helps in keeping us motivated to go ahead with painful and strenuous physical activities, related to hard exercise conditioning or sports training, or training in army.

2.Self-injury- Autistic children are seen to inflict self-pains by banging their heads, perhaps they want to derive pleasure from release of endorphins as a result of inflicted pains. Thus the motive behind inflicting self-pains are influenced by endorphin release in autistic children. Similarly, in sports we see players train very hard, particularly some runners push them too hard, just to instigate release of endorphins, which takes the runners to euphoric states (Runner's high).

3.Self-deprivation- The motive behind remaining deprived from food in anorexic patients is also explained by endorphin-hypothesis. since food deprivation enhances the release of endorphins in brain.

4.Exercise- One of the common motives behind engaging in exercise activities is the elevation in mood (positive mood). Exercisers gradually try to go for higher levels of difficulties, which results in increment in muscular strength and volume, but also give the additional benefit of mood elevation and euphoria.

5.Health- One of the byproducts of exercise is better health. Release of endorphins increase activities in immune system, and thus motivates the exercisers to get involved in regular exercise activities.

6.Risk-taking- When we get afraid of something, endorphins gel released. This phenomenon motivates a large number of risk-takers and ad venture-sports performers

(e.g. parachutists, rock climbers, hang gliders) to get more and more engaged in risky events.

7.Eating- Our motivation to enjoy food is directly linked with hedonic pleasure derived from increased opiates (endorphins) secretions.

8.Alcohol- Alcohol intake releases endorphins and hence the alcoholics get more and more dependent on alcoholic consumption to get euphoric feelings derived from increased release of endorphins.

9. Music- The spine-tingling thrills derived from listening great and most favorite music are the outcome of increased endorphins secretions. Thus, motive behind listening great music also lead to euphoric experiences related to endorphins.

10.Laughter- The motives behind engaging in situations that provoke laughter, are also related to endorphins secretions. Research evidences suggest that laughter triggers release of endorphins which in turn enhances the immune system.

11. Love and attachment- Romantic love and romantic attachments leads to release enough amount of endorphins, and hence we get more and more motivated to have romantic relationships, and get addicted to the loved person.

12.Other secondary benefits- Endorphin release helps in lowering of respiration cycles, lowers body temperature induce feelings of relaxation.

The above-mentioned benefits define why we get motivated to do a lot of our daily routine works and why we love to engage ourselves in some kinds of hardships. The most important fact however is that, the awareness of benefits of endorphin releases, and to what extent we need to strive hard to enjoy those benefits are very important to consider, since we have a common tendency to avoid hardships. It becomes very clear that, if we avoid hardships, we won't be able to gain physical well-being, good-health, better immune systems and happiness too.

1.8 Motivation Enhancement

Coaches sometimes incorrectly assume that sports persons are not motivated when they do not fully follow instructions of the coach. In many situations, the sports persons are highly motivated to participate in sport but are not motivated to do it according to the structure and methods dictated by the coach. Some sports persons wants to do it their own way and coaches view it as indiscipline, specially those coaches who have authoritarian approach. The coach should consider the need of the sports person rather than his own wav.

There is no absolute way to motivate. Knowing how to motivate sports persons involve knowing what the sport person's needs and goals are how they perceive the situations, including how they perceive their coaches. The failure of coaches to use motivation effectively comes mostly from failure to fully understand what motivation is, and how to motivate.

Following techniques are important for enhancement of motivation in the Player

1.Token reward as a motivator- Reward is the most commonly used method for motivation. It can be material reward like price money or other things like equipment, uniform, etc. leadership positions, prestige, status, media coverage, foreign trips, getting jobs etc also come in the category of rewards. While giving reward certain aspects should be considered-

a) Reward should always start with less and gradually increase.
b) Player should know the reason for getting reward.
c) Unexpected reward has higher motivational value than expected reward.

2.Practice session as a motivator- Training for high performance sport is time consuming. Minimum 6-8 years are required to reach a high level of performance. Therefore, to motivate the player training sessions should be innovative, interesting and effective. Same pattern of training schedule can be very boring and will not encourage the players to give their 100% in the training. Change of coaching style, change of time, change of venue, recreational activity etc. can be more effective than similar routine every day.

3.Analysis of the outcome as a motivator- The ability of the coach to give appropriate analysis can act as a motivation. Feedback has to be according to the need of the player. Feedback during the training should be handled differently than analysis of performance after the competition. The analysis must be honest, open, and clear.

4. Competition as a motivator- Outcome of competition can also be a motivating factor. It is effective only when it is handled properly. Successes as well as failure both are able to motivate the player. An easy success is not a motivating force but hard-earned success will motivate further the player a failure can act as a challenging factor and will lead to motivation.

5. Leadership behavior motivator- Coaches have different style of functioning. Which style is more effective than other will depend not only on coach's behavior but also on the willingness of player to accept it. The influencing factors are age, sex, coaching experience and personality of the player. A good coach is able to combined task

oriented and person-oriented approach. In task-oriented approach, the coach is mainly concerned about the training schedule and how to fulfill it. in person-oriented approach, the coach is concerned about the interpersonal relationship' in the group more than the

6.Social reinforcement as a motivator-

Social reinforcement is positive and negative. Both could help and harm, too much of either one is going to be harmful and too less may not have desired effect. Therefore, proper use is needed. For example, appreciating all the time will not be a motivation after the initial effect and same way criticizing too much will lose its correcting effect.

7.Presence of others as a motivator-

Presence of significant others can be a motivational force if it is used appropriately. Younger age group players are more influenced by the technique; Presence of opposite sex can also help in motivating. The motivational technique is useful when the skill has to be perfected and not when new skill has to be taught.

8.Expectation of others as a motivator-

Significant others can influence the level of motivation of the player. Parents, coach, friends, teammate's expectation can be influencing factor. What is the importance of these people in the life of the player will be the determining factor for motivation?

Coaches may develop specific strategies based on above-mentioned techniques for motivating the players but he must understand how these various techniques interact with one another. Each technique cannot be equally effective with all the players. Different strategies or combination of techniques are required for different players.

1.9 Mastery and Achievement Motivation

Mastery involves acquiring knowledge and developing skills. It also explains completes learning. To master something, you learn everything there is to know about it or you develop the skill to its highest possible level. Achievement involves attaining a goal such as a university degree. Mastery is usually implicated with higher level of achievement but not always, some people achieve things without complete mastery.

Achievement usually requires not only mastering a certain set ol skills or acquiring a certain body of knowledge but also to learn how to deal with our emotions, including self-doubt. In other words, while mastery may be important for achievement, it does not guarantee that you will achieve your goals. Being an optimist, for example, maybe the most important factor in achieving goals.

The function of mastery is to insure that the individual develops competence in various areas. Competence, among other things, involves skill, capacity, proficiency or fitness. These are some of the qualities that we need in order to interact with the environment and to get what we want from life. Take social competency as an example, in order to be socially accepted or to work in certain social situations, we need a basic set of certain social situations, basic set of social skills and knowledge. Without social competency, we might be excluded from certain jobs or social events.

People with a mastery and achievement orientation have a sense of urgency (Bandura, 1989). They take action so that they get what they want from life. Psychologist often characterizes the person who is inclined to make things happen as instrumental. To make things happen, such individuals set goals and make plans to attain those goals. Moreover, as Bandura and others have pointed out. they don't get disheartened the first time they fail to attain their goals. Instead they adjust their plan or simply make a new plan. In the final analysis, people who take control also take responsibility for their actions. They take responsibility not only for successes but also for their failures.

Achievement motivation refers to a person's effort to master a task, achieve excellence, overcome obstacles, perform better than others and take pride in exercising talent. It is a person's orientation to strive for task success, persist in the face of failure, and experience pride in accomplishments (Gill, 1986). According to McClelland-Atkinson model (1953), achievement motivation as a concept of both a motive to achieve success and a motive to avoid failure. The motive to achieve success is a positive motive and is very strong in outstanding players. Their dedication is high. They work harder than others, and they have in intense desire to win. The motive to avoid failure is associated with high trait and/or state anxiety. It may mean that the individual avoids competition altogether, or adopts a cautious defensive strategy in competition with the main emphasis on avoiding failure. Actually in the process of motivation, a conflicting situation arises, which may relate both to approaching a competitive situation as achievable or winnable. Otherwise, it may give rise to a feeling of avoidance from facing the competitive situation, for the outcome of the competition may be failure. In the non-anxious player who has a high motive to achieve success, a contingent achievement situation will be highly motivating. However, for those anxiety prone players with a high motive to avoid failure, a performance situation with high-perceived contingency will be motivating. A key element in achievement motivation is self-confidence. It is a major factor discriminating between those who are high or low in achievement motivation.

Achievement motivation and competitiveness are believed to develop in three stages (Scanlan, 1988). These stages are sequential i.e. you must move through one stage to progress to the next stage. The three stages are:

1.Autonomous competence stage:

In this stage, which is thought to occur before the age of four years, the child focuses on mastering his or her environment and on self-testing. For example, a child is a preschooler, who is highly motivated to learn to ride his tricycle and he is not bother that his sister can ride better than him. He rarely compares himself to others.

2.Social comparison stage:

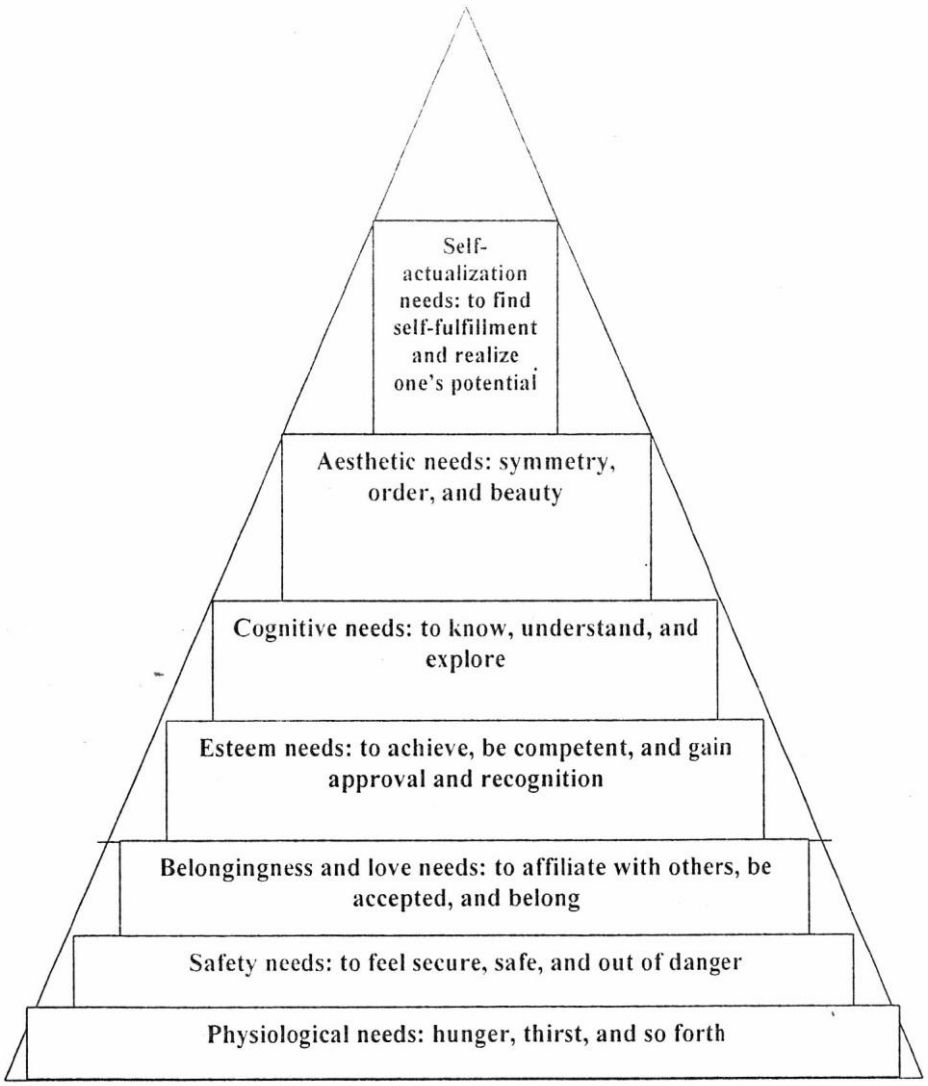
In the social comparison stage, which begins at about the age of five years, a child focuses on directly comparing his or her performance to others, unlike the autonomous stage with self-referenced standards. This is the 'who is smarter, bigger and stronger stage'? children at this age seem to be preoccupied with comparing themselves to others.

3.Integrated stage:

The integrated stage involves both social comparison and autonomous achievement strategies. The person who fully masters this integration knows when it is appropriate to adopt self-referenced standards. This stage, which integrates components from the previous two stages, is the most desirable. There is no specific age for entering this stayed.

1.10 Role of Need Structure in Sports:

From childhood through the developmental pathways human behavior gets shaped according to the nature of environmental circumstances, in which s/he grows up and gets maturity. Thus in course of development, shaping of behavior takes place according to different need-structures (Maslow, 1943, 1970), and subsequent modification in physical activities are results of the alterations in psychological and psychobiological make-up of an individual with regard to hierarchical growth in need-structure following different stages of development.



Maslow's Need **Hierarchy** Theory (1943, 1970)

- Physiological needs such as hunger, thirst etc are the primary and absolutely essential biological needs which are related to survival instinct, and hence drive action regulation to a significant extent. In infancy and in early days of babyhood, this biological needs play most contributory role needed for the baby to survive and to adapt to a newer and critical environment.
- With growing awareness about the external environment, the child initiates to explore all the possibilities and the newer demands of the situation. In this stage the child identifies the need for security, safety and need for protection from possible dangers and evaluates himself/herself as mostly helpless. Adequately

assured and protective environment would facilitate a future exploratory and adventurous behavior in the child required for successful

competence, as well, s/he will be able to go ahead with newer cognitive accommodations with wide variety of newer information and knowledge. Contrarily, any lack of encouragement, support and cooperation from significant seniors, s/he may face with extreme level of cognitive constrictions and rigidity, which will inhibit newer information processing and newer explorations and learning as well. The latter group of adolescents would face extreme difficulty in learning and in adapting to newer playing skills and techniques compared to the formers, who will learn them very easily and competently, and would be able to produce excellent performance during competitions as well.

- Adequate developments in earlier phases of life lead to a need for searching for evenness and balance between different confronting ideas, values as well as physical characteristics too. This phase of need-structural development is especially characterized by development "of romantic values, in which young men look for young beautiful women and vice versa. Apart from this craving for beauty, this phase of development stimulates the particular need for search for orderliness and symmetry in everything, so that it leaves opportunity for creative originalities. The players who learn to regulate themselves perfectly and can modify their actions accordingly, emerge as very creative high performers.

- This is the final stage of development in regulations and modifications of behavior, and hence all of the learned qualities and cognitive and emotional competences culminate into development of a higher-order need. This one is the need to actualize absolutely one's own potentials as best as possible, so that one can reach up to his/her fullest potential and can achieve the best, can create the most original out of him/her. Most of us never reach in this phase of development, as we cannot meet the demands of the earlier levels of needs, and hence most of us cannot realize the fullest of our own potentials, leaving a huge potential of productive population wasted.

Human behavior and actions get regulated and influenced by these needs throughout our life, but the definite roles of different personality factors also induce a huge impact in determining nature, direction and strength of action regulation. According to Costar and McCrae (1992), there are five basic personality type factors (according to the most valid and recent description of personality by factor analytic procedure), which along with the above-mentioned need-structures provide adequate explanations to all sorts of action regulations in the field of sports and other spheres of life endeavors as well.

1. Extroversion (also called positive emotionality), characterized by venturesome, assertive and excitement-seeking tendencies.

2. Neuroticism (also called as negative emotionality), characterized by anxiety, anger, hostility, depression and self-consciousness.

3. Agreeableness, characterized by warmth, compassion and sympathy versus critical, distrustful and skeptical attitudes.
4. Conscientiousness, characterized by productivity, ethical behavior, and responsibility versus self-indulgence and inability to delay gratification,
5. Openness to experience (also considered as intellect), characterized by having a wide range of experiences, valuing intellectual matters, and being aesthetically reactive (versus being gender stereotyped, holding conservative values, and being uncomfortable with complexities).

Depending on the psychological make-up guided by differential personality factors, individuals may react upon any situation on the basis of his/her personal need-structure as well as on the need of the situation as a whole.

2, Sports Leadership

2.1 Meaning of Leadership

Leader is denned as a person who significantly influences the thoughts, behaviors and feelings of others and guides the members to achieve goals and objectives. A coach is associated with a leader to ensure that each athlete must attain team success by monitoring the team member's daily sports activities, motivation and realization of goals. Leadership is defined as a behavioral process aimed at influencing members to work toward group's goal. Leadership has been generally defined as ' the behavioral process of influencing individuals and groups towards set goals'(Barrow, 1977). It is a broad definition that includes many dimensions of coach's leadership behavior, including the processes they use in making decisions, the type and frequency of feedback they give in response to sports persons' preferences, the technique they use to motivate sports persons and the type of relationship they establish with sports persons.
An effective leadership style is defined as that which results in either successful performance outcome (measured in terms of win-loss percentage or degree of self-perceived performance abilities) and/or in positive psychological response on the part of the sports persons (e.g. personal/team satisfaction, coach-sports person relationship compatibility).
Two types of leadership roles can be seen in a group/team:

1.Informal Leadership:

The informal leadership roles are those, which emerge as a result of the interactions and communications that take place among group members. The group acknowledges and is influenced in its actions by those individuals who are most dominant, assertive and competent. These individuals emerge from the group to occupy leadership roles and they are referred as informal leaders.

2**. Formal Leadership:**

On the other hand, formal leaders are those that are specifically selected by the organization or group. The individuals who occupy formal leadership roles are also referred as prescribed leaders. Coaches and manager in sport teams are one example of prescribed leaders. They have formal roles in the group/ team. They possess legitimate power, coercive power, reward power and sometimes selection power.

Leadership is often confused with management. Management consists of planning, organizing, staffing and recruiting, scheduling, budgeting and public relations. Leaders determine the direction of future and then provide the resources within the organization to purse the program. Managers simply handle the routine, never questioning whether the routine should be done. Leadership emphasis interpersonal relationship and has direct impact on motivation. A coach does not become the leader until the team members acknowledge or legitimate his authority i.e. he also has to get the power to act by earning the respect of the team.

2.2 Need for Leadership

Leader is needed in team or group to fulfill basically two types of responsibilities:

1. The first is to ensure that the demands of the organization are satisfied and that the group is effective in terms of the goals and objective of the organization. For the coach and the manager of a professional team, effectiveness might mean increased attendance, a positive winning percentage, or both.

2. The second responsibility of the leader is to insure that the needs and aspiration of group members are satisfied. When team members are satisfied and the team is successful, the-coach or manager of the team is considered as an effective leader.

These two responsibilities are essentially needed in any leadership. This means that all a coach or manager need to do is to keep players happy, keep the fans happy. Win enough matches or competitions to be in contention every year and win a big competition like Olympics, World Championship in every four or five years. Both, the organization's need and players' need would then be satisfied.

Excellent coaches give the team vision and how to translate this vision into reality. Coaches, in their leadership roles, try to develop an environment where each and every sports person have the opportunity to achieve success, and by doing so achieve team success. The coach is not only concern with the physical environment, but the

psychological and social environment i.e. to help develop team culture. The team culture consists of selecting, motivating, rewarding, retaining and unifying members of the team, which includes players, assistants and all other involved.

Team culture is concerned with how rewards are given, who communicates with whom about what, practice procedures, game protocols, acceptable reactions toward winning and losing, dress codes etc. learn culture is about style of leadership used by the coach, which determines how power is distributed and decisions are made. It, then, involves many formal and informal processes.

2.3 Leadership Effectiveness and Qualities

Leadership effectiveness was studied earlier either on the basis of trait or a behavioral approach. Effective leadership behavior was assumed to be a function of either leader's personality or dominant behavior or attempts were made to identify the particular traits or behavior would discriminate the successful from unsuccessful leaders. These traits or behavior are then identified as 'effective leadership factors".
This simplistic trait and behavioral approach to study leadership effectiveness in sport was considered ineffective. Leadership effectiveness cannot be solely influenced by leader's traits or behavior, leadership effectiveness is much more, it is to be a function of both situational and individual factors.
More specifically, these situational theories indicate that the characteristics and behavior of the leader and the group members will interact with other aspects of the situations (e.g. task type, work environment etc.) to determine what type of leadership behavior that will be most effective in attaining group or team goals. Under this recent approach in sport, leadership effectiveness includes:

1. Leader's qualities.
2. Leadership style.
3. Situational factors.
4. Follower's qualities.

1. Leader's Qualities:
Although there isn't one distinct set of essential personality characteristics that assure that the person will become a leader, successful leaders appear to have many qualities in common. According to Parcel Is (1995), the key to successful leadership is:

a) Integrity; A leader's philosophy must have a sound structure, be rooted in his basic values, be communicative and accepted throughout the organization, be resistance to outside pressure, and it must remain in place long enough to allow for success.

b) Flexibility; Traditions are made to be broken. If you are doing something just because it's always been done that way, then you may be missing an opportunity to do better.

c) Loyalty: The first task of leadership is to promote and enforce collective loyalty, also known as team work or team culture.

d) Confidence: If you want to build confidence in your players and coaching staff, give them responsibilities and decision making capacities and support them in their attempt.

e) Accountability: Accountability starts at the top. You cannot build accountable organization without leaders who take full responsibilities.

f) Candor: When sending a message, it is not enough to be honest and accurate. The impact of the message will depend on who is receiving it, and what they are willing to take in at that time.

g) Preparedness: Well -prepared leaders plan ahead for all contingencies, including the ones they consider unlikely to happen.

h) Resourcefulness: At its most basic level resourcefulness is simply resilience, a refusal to quit or give in even when all seems bad but remain optimistic.

i) Self-discipline: There is always a way to compete, even against superior forces, but it requires strict adherence to a calculated plan.

j) Patience: Patience is rare and most valuable when an organization is performing poorly. It's not enough to know what changes must be made, it's equally important to decide when to make them.

It is quite easy to identify the basic qualities of a leader. But many people have all these qualities and are still not good leaders, suggesting that these arc necessary but not sufficient qualities to be a leader. Leaders have some other qualities as well.

Empathy: Researchers believe that empathy is one of the most vital qualities for a successful leader and distinguish between outstanding coaches and leaders and less effective ones. Empathy means the ability to adopt the prospective of other person, understanding how that person perceives events and experiences emotions. This quality should not be confused with sympathy. The empathic person understands how the other person feels, whereas the sympathetic person feels emotions of regret for a person experiencing troubles.

Empathy lets you know the Interests and needs of your sports persons, which is not only a precondition for leading them, but for motivating them. The basis of empathy is genuine caring. Its tool is communication skills, especially listening skills and its main aspect is helping. Empathy involves three steps: i) Recognizing the need to be empathic. ii) Taking the time to understand the members of your team.

iii) Tasking action based upon this understanding, to help the team members obtain their goals.
Empathy is not likely to occur when coaches assume they know the needs and expectations of their sports persons without communicating with them, or when they treat everyone the same despite individual differences or when they fail to recognize that a person to take the time and. to attend to the feeling of others.
Other Qualities: Some of the additional qualities that effective leaders are likely to possess are:

- They tend to act like leaders, they are not like one of the group members.
- They develop trust in others by being reliable and tirelessly persistent.
- They have self-awareness, self-control and self-confidence.
- They constantly try to develop and improve their own skills.
- They esteem others, helping others to develop self-worth.
- They are concerned with and are responsive to time.
- They are intrinsically motivated to achieve the goals.
- They are intelligent.
- They are persuasive and need be assertive.

- They not only are problem solvers, they are problem finders, and they look to identify problems in early stages of development and then take corrective action.

2. Leadership Style:

Leaders have different styles of functioning. It is very difficult to say which is the superior or more successful style of leadership behavior. A style could be effective with one group but may fail with the other team. Every leader has his own way of decision making, which becomes his style of functioning. Various decision making styles have been broadly put into four categories:

a) **Autocratic Style:** The leader takes decision alone without consulting others. This involves the greatest amount of independence by the leader.

b) **Consultative Style:** The leader comes to the final decision after consulting one or more subordinates. A consultative decision style is similar to the autocratic approach in that the leader makes the decision alone. A difference between them is that the leader initially consults with subordinates to obtain their ideas. This may or may not be used when the decision is made but subordinates do have some involvement.

c) **Delegative** Style: The leader delegates the decision to one or more subordinates. It is also similar to the autocratic approach in that the leader again makes the decision. But this time, the decision consists of handling over the responsibility to subordinates or to the group who then make the decision independently.

d) **Participative Style:** The group and the leader jointly make the decision. The Participative or democrative approach involves the greatest amount of involvement by the group in the decision making process. The group (which could include the leader) jointly comes to a decision with the leader having no more influence than any other group member.

Effectiveness of leadership style depends on optimal performance and satisfaction on the part of sports persons and will be achieved if the leadership behaviors exhibited by the coach are similar with the behaviors preferred by his sports persons and are appropriate for the particular sport context.

3. Situational Factors:

Following situational factors considered related to leadership effectiveness:

a) **Situational Demands:** Different situations require different leadership functions to be performed. The most important situational variable is the task at hand. 'On field'

in sport leadership requires quick decisions and actions. It is not effective to use democrative style in such a situation. Decision must be made quickly and the responsibility for these decisions rests with the coach. The coach may consult with the assistant coaches and players when making these decisions.

b) **Type of Sports:** Another important aspect is whether the sport is a team or individual sport. Team sport requires more coordination and group structure as well as their efforts during the contest than does individual sport, therefore requiring greater directions and help by the coach. A less directive approach, may be preferable for individual sport, whereas, more directive approach for team sport.

c) **Nature of Task:** Researchers have found that sports persons in team sport prefer task-oriented leaders than to sports persons in individual sports. Further, sports persons prefer more task orientation in sport that are more variable and dynamic. It also appears that sports persons who are less skilled prefer coaches who are more task-oriented, who can teach skills well. On the other hand, successful sports, persons prefer coaches who are person oriented, who will provide emotional support and work with the sports person rather than direct the sports person.

4. Follower's Qualities:

Good leader must consider the sports person's age. sex. growth and development characteristics, i.e. total personality and values. As in all relationship, the leader not only influences the followers but the followers" influence the leader too. as the leader must respond to the followers. This means that the effect of leader on followers and followers on leader is both ways. When followers are not warm and receptive to direction, leaders are more likely to use an autocratic style. Research shows that sport persons differ in their desire and need for the structure of leadership and as well as the group. Some are ready to accept considerable responsibility without a great deal of direction and others are not, sports persons who handle uncertainty well, who identify closely with team goals, and who possess high level of skill knowledge about the sport less direction.

UNIT-V

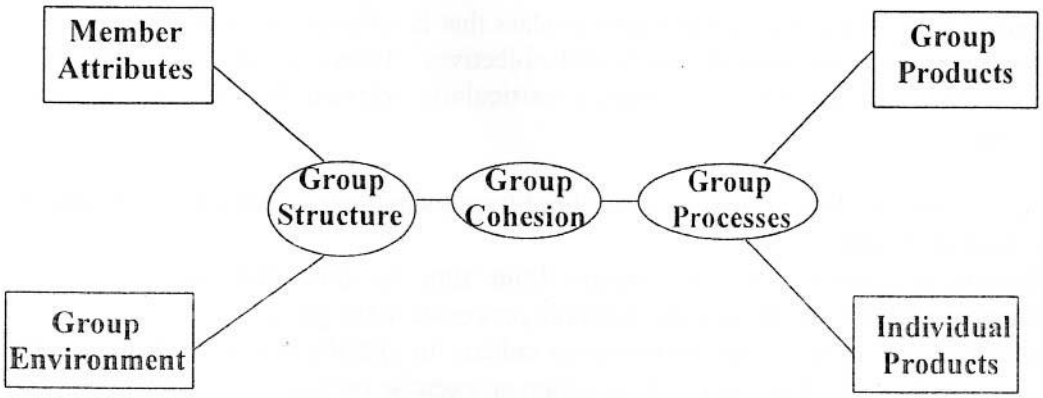
1. Social Skill in Sports

1.1 Concepts of Group Dynamics and Group Cohesion

Group is a collection of two or more individuals, possessing common identity, goals and objectives, share a common fate, structured patterns of interaction or communication, hold common perceptions about group structure, are personally and instrumentally interdependent and reciprocate interpersonal attraction. Sport group may be the most influential group to which an individual belongs. Sport group is a small group, unlike social or work group. Sports group possess unique structural features that offer special advantages with respect to small group research (Toy and Kenyon, 1978).

Carron (1988) has proposed a model in a sport group on the basis of inputs, throughputs and outputs operating within sport groups. The input that he identifies is member attributes (social, psychological and physical characteristics) and group environment (the location and task of the group). Throughputs include group structure (positions, Toles and status of members), group cohesion (group unity), and. group processes (motivation, communication, decision making). Finally, group outputs are consequences both for the individual members (satisfaction, adherence) and for the group (performance, stability). This comprehensive model can be used to determine a) relationships that could exist, b) what is actually to date, and c) what should be studied in sport groups.

A conceptual model for examining the sport team as a group (Carron, 1988)



The term group dynamics has been used to describe the energy, vitality and activity of the group. Group dynamics primarily focuses on interrelationship within groups. Group dynamics has been defined by Cartvvright and Zander (1968) as a field of study, which is "dedicated to advancing knowledge about the nature of groups, the law of the

development and their interrelationship with individuals, other groups and larger institutions'- According to the definition, the study of group dynamics in any context should deal with:

A) The nature of groups.
B) Group development.
C) Interrelationship within the group.
D) Interrelationship between the group.
E) Interrelationship between the group and larger institutions.

The importance of group dynamics comes from the importance of groups. Groups are important because each individual encounters a large number of groups and such groups can have impact on his life. In addition to a family, most individuals simultaneously belong to a variety of recreations, social and work groups, all of which can influence and be influenced by the person's thoughts, feelings and action.

Group cohesion is one of the most frequently examined group concepts in sport psychology. Team unity is generally considered to be one of the basic foundation upon which effective team performance is built. This group unity is commonly called as group cohesion. The term cohesion is derived from the Latin word 'cohoesus', which means 'to stick together'. The term describes the tendency of the groups to stick together and remain united. Groups are social units composed of two or more individuals. Cohesion reflects the strength of the bond among the members within the group.

Cohesion has been defined by a number of social psychologists in slightly different ways. Gross and Martin (1952) have defined 'cohesion as the resistance of group to disruptive forces'. Carron's (1980) definition emphasizes that in sport teams, 'cohesion should be viewed as a dynamic process that is reflected in group's tendency to 'stick together while pursuing its goals and objectives'. Carron's definition provides a starting point and includes some aspects particularly relevant to sport and exercise psychology:

1. Cohesion is multidimensional; it is resulting from many factors that may differ among similar kind of groups.
2. Cohesion is dynamic, it can change from time to time and its sources and consequences can change through the dynamic processes in the group.
3. Cohesion is instrumental, group members cohere for specific reasons, whether to be part of university volleyball team or to maintain an exercise program.
4. Cohesion has an affective dimension, even in highly task oriented groups as sports team, social cohesion generally develops as a result of members' instrumental and social interactions as well as communications.
5. Because the goals of all groups are complex and varied, different groups and their members perceive cohesion differently.

Two dimensional aspects of cohesion:

1. Social Cohesion- It refers to the extent to which team members are attracted to each other and enjoy each other's company.

2. Task Cohesion- It refers to the degree to which team members work together to achieve a common objective. Task cohesion will also refer to the athlete's objective appraisal of his or her group's level of coordinated effort or teamwork. In other word, the level of task cohesion will refer to the group's direct, objective ability to work together as a unit.

The greater the social cohesion and task cohesion experienced by each member of a group, the more cohesive the group would be.

1.2 Factors Affecting Group Cohesion:

1.Group Size: The level of cohesion seems to be optimal in small groups. If the group is very large, cohesiveness begins to decrease. Therefore, in the larger groups the physical or psychological restructure should be done within smaller cohesive units.

2.Physical Proximity: It also seems to enhance cohesion. Sports person who are physically close to each other in playing positions, roommates or live together become more cohesive. This is usually due to increase opportunities for task and/or social communication. But there is an optimal level for physical proximity. Research indicates that the group density or too much of crowding produces feelings of stress, which in turn reduces cohesiveness.

3.Communication: there is a role of communication in cohesion. For example, the degree to which the group communicates with other groups and with non-group members is called permeability. The less permeable the group is, greater is its cohesiveness. Groups become socially isolated and draw upon their own members to fulfill the important psychological needs of all members. Similarly, Information flow (exchange) is important. It refers to the level of communication within the group itself. The greater the information flow, the greater is the cohesion.

4. Role Differentiation: Groups with high role differentiation, which refers to the degree to which different members have specialized functions, have a better chance to develop a high level of cohesion.

5. Performance Success: There is a relationship between performance and cohesion. Successful performance is positively related to cohesion. There is a cause effect relationship in a circular way. That is. teams that are more cohesive are more successful.

therefore, success improves level of cohesiveness. But cohesion being dynamic, the level fluctuates and will be affected by marry other factors also.

6. Satisfaction: Another factor, which is closely related to success and influences cohesion of sport teams, is satisfaction. The two are highly similar but are also different. Success need not bring satisfaction. One can win and be successful but still not satisfied with his performance in the team. Actually there is a circular relationship between cohesion, success and performance

7. Conformity: Conformity refers to compliance in action and behavior with certain accepted standards or norms by all involved. The more cohesive the group is, the more influence the group has on its individual members. Therefore, greater pressure is on each member to demonstrate conformity in behavior and attitudes. At the same time, highly cohesive groups also demonstrate grater conformity to group's norm for productivity.

8. **Role Performance:** it is also interrelated to group's cohesiveness. In task performance groups, different individuals have different responsibilities, assignments and functions within the group. The group's effectiveness is determined by the extent to which group members understand their role and the responsibilities associated with it (role clarity), accept them (role acceptance) and carry them out (role performance), it has been demonstrated that greater is the role clarity, role acceptance and role performance the better is the cohesion.

9. Stability: It refers to the total numbers as well as length of time members is together in the group. Here too cohesiveness may function in a circular fashion. The longer the group has been together and the more opportunities the members have had to interact with each other, there is more likelihood for cohesiveness to develop. Similarly, the more cohesive the group becomes, it is less likely that its members will chose to leave.

1.3 Development of Group/Team Cohesion

Carron (1982) has outlined cohesion developmental factors in terms of four main categories:

1. Environmental Factors,
2. Personal Factors,
3, Leadership Factors,
4, Team Factors,

I. Environmental Factors:

The environmental factors refer to the normative forces, which hold a team together. In athletics, as in many other formal groups the individual may be under contract

to the management of a team or may hold a scholarship, which necessitates a commitment to the organization. Certainly this kind of influence (or environmental factor) plays a part in holding the team together. Additionally, the athlete may be bound to a certain team because of age. geographical and eligibility requirements.

2. Persona Factors:

There are three aspects involved in personal factors:

A) Motivation,
B) Satisfaction,
C) Individual Difference.

A) Motivation:

Personal factors are primarily being considered in terms of three individual participation motives proposed by Bass (1962):

i) Task Motivation: Task motivation refers to the desire to play the game and to attain the performance goals of the team. It is obviously a direct determinant of task cohesion.

ii) Affiliation Motivation: Affiliation motivation refers to the desire to establish and promote interpersonal relationships within the team and would also appear to be a direct determinant of cohesion.

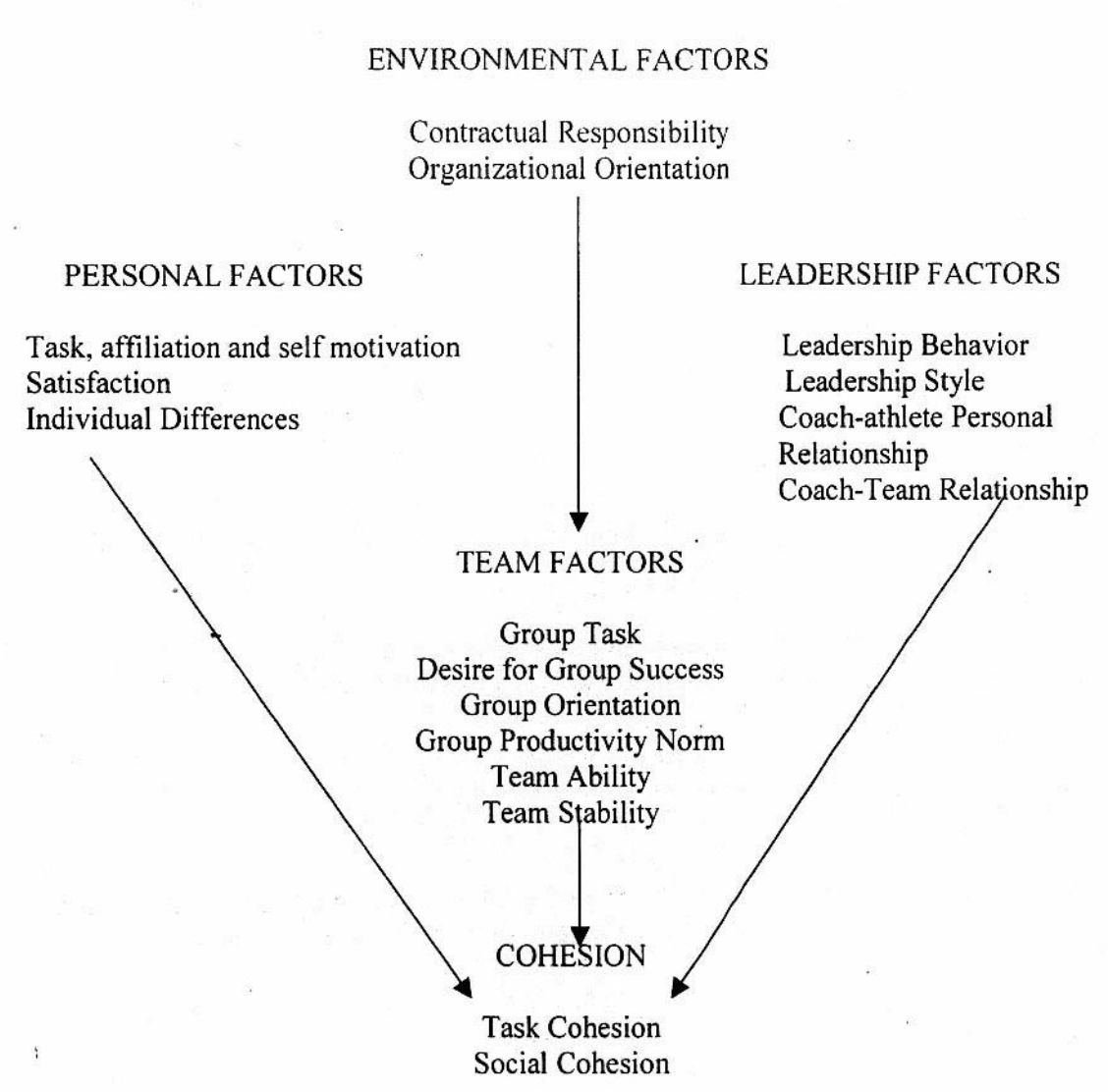
iii) Self-Motivation: Self-motivation refers to the attempt to attain personal satisfaction by gaining a chance to exhibit one's athletic skill and would seem to contribute to both dimensions of cohesion.

B) Satisfaction:

Another personal factor is satisfaction, was advanced by Martens and Peterson (1971), who proposed the idea of a circular relationship between team cohesion and performance success by way of the sense of each member's satisfaction with the team. They stated that satisfaction (or the lack of it) promoted (or inhibited) the development of team cohesion.

C) Individual Difference:

Individual differences refer to such things as sex. race and differences in playing ability. Also, it seems that the more similarity in the group possesses in these attributes, the more cohesive it will be. However, playing ability may be somewhat of an exception to the statement as there should be complementarity of skills. Although, all of the players on a given team will have generally similar ability levels, a team consisting entirely of 'superstars' may not play as well as one in which the players complement each other's skills.



3. Leadership Factors: Leadership factors involved following aspects:

A) Leadership Behavior

B) Leadership Style

C) Coach-athlete Persona! Relationship

D) Coach-Team Relationship

(All these are already described earlier)

4, Team Factors:

The final group of factors, which relates to team cohesion is team factors. The item within this group receiving the greasiest amount of attention in the research literature has been the nature of the group's task. Landers and Lueschen (1974) addressed

this notion in terms of distinction between independent and task interdependent teams. An example of the former would be archery, gymnastics or bowling teams while an example of the latter would be any team sport activity such as. basketball, volleyball or football. It would see that independent type sports would not require any sort of task cohesion while the individual performs his events. Conversely, the level of task cohesion would seem very important for the interdependent team.

Team factors refer to the shared standard of success that the group is oriented toward. Carron (1982) mentions, that this group productivity norm may be for either high or low standards of performance. The outward result of group accomplishment may be quite different even though both groups internalize their respective, but differing, group productivity norm. However, it would seem that all athletic teams would share a group productivity norm for high levels of achievement so such a concern should be irrelevant. In addition to these two factors, it appears that group stability has been linked to the development of team cohesion. It is unclear whether stability is a determinant, or a result of team performance levels. Simply stated Carron believes that the longer the team stays together, the greater the opportunity for social and task cohesive ness to develop.

1.4 Spectator Psychology

Sports by its nature are a social activity. Sport is rarely performed in a social vacuum. Opponents, coach's expectations and expectations of significant others-family, teammates, friends, and fans influence even workouts alone by sports person. Even when spectators and other performers are not physically present, frequently some aspect of the individual's performance (his or her time, distance etc) will be subject to the scrutiny. Further, as Cratty (1981) states, 'even a solitary workout may be accompanied by an unseen audience, a group of people residing psychologically and socially in the mind of performance. This audience, the sports person, knows, stands ready to judge his or her performance at some future time, harshly or with kindness and praise'.

The investigation of how social factors influence sports performance has been subject of inquiry for some time. Social influence remains prominent because virtually all sport and exercise activity is social. Much sport activity involves competition, which is social by definition. Even noncompetitive sport and exercise activity such as physical education classes, fitness program and recreational sports usually involve social interaction.

Since the beginning, research on presence of others has been based on social facilitation (co actor effect and audience effect). Social facilitation refers to the influence of presence of others on performance including audience effects and coaction effects. Spectators are people who are directly or indirectly present to watch the performance of the sports person. Co actors are those participants who are performing along with the

sports person. For example, in football team, other team members and the members of opposite team.

1. Situational Factors,

2. Personal Factors,

3, Nature of Spectators.

1. Situational Factors:

i) Home advantage (home crowd) has a positive effect on performance, sport performance is considered to be better while performing in front of the home crowd and home ground due to the familiarity factor. Home ground advantage may sometimes facilitate more aggressive play because of increased arousal caused by the crowd.

ii) Expectations of the spectators for certain behavior and the reinforcement of it, may have considerable effect upon sports person behavior and subsequently his performance.

iii) Spectators can facilitate performance of well-learned skills or for automatization of the skill but will have negatively influence on the learning of new skills. Fear of failure (making mistakes) can definitely inhibit trying and learning new skills.

2. Personal Factors:

i) Age and gender of the sports persons.

ii) Competitive experience of the sports person.

iii) Skill level of the sports person.

iv) Personality of the sports person.

v) Sports person's feelings towards spectators.

vi) Sports person performing alone or with the group (number of co actors).

3. Nature of Spectators:

i) Mood of spectators.

ii) Size of spectators.

iii) Proximity (closeness) of spectators.

iv) Knowledge of spectators.

v) Types of spectators –

- Passive and active spectators (interactive-non-interactive audience),
- Known and unknown audience,
- Hostile and docile spectators,
- Supportive and non-supportive spectators.

1.5 Spectators Cohesion:

A) Cheer leaders: Spectators are organized under a leader who is called cheerleader.

B) Spectators identity: Spectators identity with teams to share in the glory as a form of self-representation that is, one's own self-image is more positive if one is associated with a successful team than with an unsuccessful team.

C) Mob Behavior: Spectators get involved in the kind of behavior (rowdy behavior) in which they will not get indulge if in smaller group for example aggressive behavior against outside team or losing team.

2. Psychological Aspects of Action Regulation

2.1 Meaning of Action Regulation

In behavioral science the term "action"' refers to behavioral response to some specific kind of stimulation. The most simpler explanation of action or behavioral reaction is-

S-O-R

Where S represents stimulus, and the stimulation may come from inner as well as external environment. O represents the organism, here in case of human psychology, O is designated to an individual player. R represents the response or the behavioral outcome hereafter called as action.
Thus, the equation of S-O-R bond defines that the in presence of stimulation from either inner or external environment of an individual, s/he gets provoked to react in certain ways, which designates his/her behavior or action in response to the particular set of stimuli.

Now, the question comes how this behavioral response or action gets regulated, or, more precisely what controls our action or our behavior?

Before coming into the providing answer to that question, let us look into what does really mean by action regulation?

When an organism being concerned with the presence of certain stimulation, tries to initiate any goal-directed reaction either in order to approach for gaining some kind of rewards or for positive consequences in some form, or to avoid some difficulties, consciously or unconsciously s/he tries to regulate or control his or her own reactions, either in order to maximize the reward, or to minimize the crises s/he is supposed to face in consequence. This individual effort of the organism to regulate his or her reactions is termed as "Action regulation".

This action regulation is essentially dependent on a lot of inner psychobiological characteristics of the individual and also on numerous environmental factors. Next section of the discussion will elaborately discuss about the psychological aspects related to action regulation.

2.2 Psychological Characteristics of Action Regulation

In early twentieth century more and more researchers showed their interest in knowing fundamental basis of behavior, primarily the physical activities which are observable and hence are measurable for experimentation. The most significant aspect of physical activities is that, there must be a reason for doing them. Initially it was considered that, the reasons of action must be determined either by biological or learning or cognitive aspects, or the combination of two of them or all of them combined together can initiate action. Thus depending on the influencing of them, physical activities may be explained in terms of certain psychological factor those characteristically influence in regulation of actions.

1. Actions are regulated on the basis of causal factors of either approach or avoidance. Activities having approaching tendencies are instigated by some desires, wishes and behavior gets directed to achievement of some goals. As for instance, a forward in soccer strives hard to reach an excellent through sent for him by his team-mate, with an extreme urge to score a goal for his team. Contrary to that, avoidance behaviors are intended to avoid some kinds of possible occurrence of disturbances or difficulties. These types of actions tend to be very compelling, as they are mostly punitive, difficult and impossible to ignore, often could be related to the question of survival such as a sudden incidence of blasting of bombs.

2. Depending on psychological make-ups such as personality traits and types, regulation of actions may very largely, since more anxious players or individuals in general tend to avoid difficult situations or tasks more than those with lesser anxious traits. Similarly, extroverts and sensation-seekers spend more time in approach behaviors, as they always for newer opportunities and excitements. Thus, we see extrovert players more often try to go for big hits in Cricket, and goes for difficult actions in games like hockey or soccer.

3. Actions are done with an attempt to adapt to newer environment or situations. As always we see a sincere and newcomer trainee player try hard to adjust to the training conditions, practice schedules, conditioning exercises and newer skills training as fast as possible. This need to adapt however explains the role of motivation in getting accustomed to newer challenges.

4. In interactions with the environment, we intend to do two basic things: we try to be familiar with our surrounding environment, so that we can have adequate control over it; and, we try to ensure our survival in that surrounding. Researchers suggest that, in doing this, most of us face extreme conflicts, as to whether we will give priority to the question of survival first, or, we will try to master the surroundings first? Here the players who have more cognitive competence and flexibility can decide more accurately and can prioritize the need of the situations and can regulate actions accordingly.

5. Actions are regulated by arousal mechanism. In activities related to sports and exercise conditioning both arousal from both cortical or central and autonomic nervous systems are important. For instance, actions requiring sharp analysis of the competition situation require heightened cortical (reticular) activation for accurate anticipations and decisions, while adequate autonomic arousal modulation facilitates in sharp and agile reactions.

6. One of the most important psychological predictor of successful behavior regulation is persistence (Seligman, 1990). which is undoubtedly much more important than talent, skills and excellent abilities in any spheres of life venture (be it sports, or academics, or business or management). Elite players always keep on trying for the best, even if they have earned extreme levels of success, and are considered as the world champions. Actually compared to average players, the peak performers always practice harder, and keep on trying for further improvement, as they know that, if they cannot keep on improving, performance level won't rest at the similar level, but will drop suddenly. That's why it is said in sports "No pain, no gain".

7. One of the most important determinants of regulation of human action is the feeling, that is, the affect associated with any particular event or situation. Thus if positive feelings or pleasant affect gets related to any particular playing or competitive situation we tend to approach and tend to persist with the goal-directed behavior. On the contrary we tend to avoid any task with which negative feelings are associated. This being the reason in internationally famous sports institutes and universities practice sessions always ensure added opportunities to enjoy positive feelings and affects related to training sessions, so that trainees can strive more for their goals and can persist with the enjoyable though hard, training sessions to excel in their competitive careers.

8. Our inner instincts also play one of the most vital roles in determining our actions. In sports, like ancient ages the "Fight or Flight" instincts control our goal-directed behavior. In ancient times our ancestors either tried to fight against any danger-provoking situation (such as when attacked by animals like lions or tigers), or they tried to run away (frightful behavior) to avoid danger (survival instinct). Sports essentially involve exactly "Fight or Flight" situations, wherein actually survival- threats do not exist, but the players face some kinds of "do or die" situations, and those who cannot cope with the threats of defeat try to avoid defeat, instead of striving for achievement of success.

9. In regulation of actions the most important psychological aspect however is regulation of self. On the basis of the extent of influences from external sources, strength of this self-regulation varies from- External regulation to absolute internal regulations.

- **External regulation-** The trainee gets involved in practice sessions for gains from external sources and his/her successful achievements completely depends on the strength of external controlling force. For instance- a boy engages in practice sessions to because lots of girls watch the practice sessions, and he gets an opportunity to impress them, and that's the actual reason behind his engagement in physical activities.

- **Interjectory regulation-** Trainee tries to work hard and regulates his actions for keeping himself free from guilt of not practicing hard or not doing something extremely meaningful in life. In this type of regulation, actions are determined by the amount of the blame or the trainee upon himself puts guiltiness. Here the trainee works hard to avoid the sense of guilt.

- **Identified regulation-** In this, the trainee tries to work hard, for he can identify himself as a good player or as a future great champion, and focuses his own goal to strive for achievement of the ultimate success. Here the action is regulated by the individual player's personal identification, which matches with the role he plays during practice (that means the position in which he is playing or practicing) and when he plays in the real competition situation. That means the player engages in the practice and persists in the training sessions for he can project himself as a future champion, and he loves to see himself as a future champion, and so, he regulates all his focus and strives hard to achieve success and continue to pursue his own goal-directed behavior.

- **Internal regulation-** The player trains very hard and always try to strive for excellence, because he loves to do so, he loves to play, and he enjoys every bit of the training session, because that's what he mostly likes.

The above-mentioned psychological characteristics play most significant in regulating goal-directed behavior and these psychological predictors largely influence achievement-oriented physical actions in the field of sports and exercise. Personality and instinctual factors and the self-regulatory aspects emerged as the most significant determinants behind regulation of physical activities.

Importance and Psychological Aspects of Action Regulation

Same as 'Role of need structure in sport' of Unit-IV

In the competitive world of sports, self is always perceived as a challenger who is supposed to be committed to face crises to overcome and to achieve success. In doing so, self-control or generalized self-regulation ability is considered as the most important predictor of success. According to one of most successful self-regulation theorists, this self-regulation involves three processes- 1) self-observation (self-monitoring); 2) self-evaluation (self-judgement); and 3) self-reaction (self-incentive) (Bandura, 1991).

1. Self-observation (self-monitoring) - This involves systematic monitoring of our behavior, and the depending on accuracy of our own awareness about our behavioral and perceptual, emotional and cognitive short-comings we can prepare ourselves for evaluation of our capabilities at par with the situational demands.

2. Self-evaluation (self-judgement) - Social-cognitive theory assumes that most of us possess a considerable knowledge about the best course of action to achieve a success "in any particular task, but we actually lack in identification of our shortcomings and expertise as well to meet the demands. Evaluating our potentials and monitoring the course of actions taken, we can determine whether we are on the right track, or whether our actions meet the required standards, or not.
3. Self-reaction (self-incentive)- Self-judgements are typically accompanied by affective reactions. When we succeed we feel great, and we experience a negative mood or dissatisfaction, if we fail to perform accurately. Depending on these affective components, we set our future goals (either higher or lower), or abandon a target and try to search for a newer course of action. To achieve our goals, we need to pursue a course of action that produces positive self-reactions and also try to avoid the courses of action, which produce self-criticisms.

   Depending on these socio-cognitive evaluation processes we try to analyze our situation, and whenever we feel stressed or psychologically disturbed, we try to

resolve them with the help of psychotherapists, who can provide us adequate assistance by employing anyone or a combination of the widely-recognized self-regulation techniques available. We are going to discuss about them in the next section of our discussion.

2.4 Systematic Desensitization (SDZ)

Systematic desensitization developed by Wolpe in 1958. The basic principle of this technique is that of reciprocal inhibition. This principle implies that physical relation is incompatible with cognitive stress. Therefore, the maintenance of muscle relaxation during the imaging of fear relevant athletic scenes will effectively extinguish the mental or cognitive anxiety. This process may help the athlete to overcome his or her performance anxiety in the real sport situation. There are two components to the systematic desensitization package-1) imagery and 2) muscle relaxation.

Terminologically the process of desensitization relates to the minimization of the extent of emotional feeling of crises. Whenever, it is planned for any psychotherapeutic purpose, it is usually aimed at achieving optimal relief from crisis faced with. The therapeutic plan is designed step-wise aiming to provide the lowest level of relief from crises on the initial session to progressively training up to achieve optimal relief during the final steps of therapeutic sessions. The most important point of concern in this type of therapeutic model is emphasis on the involvement of the therapist in helping the individual subject receiving the treatment. Initially, the therapist puts most stress on achieving the relief from the emotional burden or the feeling of relief from tension or the crisis. During these initial phases, the role of the therapist is more important with building up a trusting relationship with the subject receiving the treatment, so that he/she can develop a confidence in him/her with the final aim of optimal relief from the crisis. In these phases of treatment focus is kept on reliving of crisis up to a pre-scheduled extent. For example, if a gymnast faces extreme tension with activities related to performance on parallel bar, therapeutic program might be designed at the initial level with regard to describing a clear mental picture by the gymnast with regard to the activities the performer is supposed to do in the actual situation. Thereafter, depending on the extent of crisis, therapist chalks out the course of desensitization training with the assistance of the trainer in concern. This is usually done so that it becomes easier for the trainer to identify the difficulties faced by the gymnast in actual situation and to provide assistance in future, with regard to those in the field training situations.

The actual process of SDZ can be practiced. To begin the athlete engages in a muscle relaxation technique until he or she feels totally at ease or non-anxious. The setting should be quite place, free of distractions. Then the least threatening scene of the fear hierarchy is introduced. The athlete attempts to maintain and match the feelings of relaxation while imaging the scene. If successful, he or she then proceeds to visualizing the next threatening scene while still maintaining the sense of muscle relaxation. The

athlete will then attempt to ascend the scale or hierarchy again. In this manner, the athlete's goal is to visualize each of the progressively threatening scenes in the hierarchy while maintaining an overall sense of bodily relaxation.

2.5 Imagery Training

Imagery may be defined as using ail the senses to recreate or create an experience in the mind. This definition contains three keys or characteristics to understanding imagery.

1. Imagery as recreating or creating: Through imagery we are able to recreate as well as create experiences in our mind. We recreate experiences all the time. We are able to imitate the actions of others because our mind 'takes a picture' of the skill that we use as a blueprint for our performance. Imagery is based on memory, and we experience it internally by reconstructing external events in our minds. Imagery is also useful to recreate athlete's own performances after competition to evaluate the performance. Another powerful imagery technique is to recall previous outstanding performances and recreate them through imagery to increase confidence for an upcoming competition.

2. Imagery as a polysensory **experience:** Imagery should involve all the senses, and it is a polysensory experience. All of our senses are important in experiencing events. Images can and should include as many senses as possible including visual, auditory, olfactory, gustatory, tactile and kinesthetic senses. Using as many senses as possible may help athletes to create more vivid images. The more vivid image, the more effective it is. Emotions associated with various sport experiences are also an important part of imagery (Martens, 1987). In using imagery to help control anxiety, anger or pain, athletes must be able to recreate these emotions in their mind. In using imagery to recreate past outstanding performances, athletes should feel the emotions associated with those experiences such as, elation, satisfaction, pride and self-esteem.

3. Imagery as **the absence of external stimuli:** The third important characteristic of imagery is that it requires no external stimulus antecedents. Imagery is a sensory experience that occurs in the mind without any environmental props. Research indicates that when individual engage in vivid imagery and absorb themselves into the context of their images, their brain interprets these images as identical to the actual external stimulus situation (Richardson, 1983).

All athletes possess the ability to use imagery to improve their performance. However, like physical skill, the psychological skill of imagery requires systematic practice to be effective. Setting up a systematic imagery program involves four steps. First athletes should be educated about imagery and convinced about the merits of practicing imagery. Second, coaches must evaluate the imagery ability of the athletes in order to develop most appropriate type of program. Just as athletes differ in physical skill, they will differ in their ability to develop vivid and controlled images. Third, coaches must train athletes in basic imagery skills. It is important for athletes to use all appropriate senses and their emotions when practicing imagery. In 'basic training' athletes practice.

2.6 Autogenic Phreses Exercise Rehearsal

Autogenic conditioning is a simple relaxation and visualization technique. In autogenic, various parts of the body are relaxed with simple phrases of language until a state of deep relaxation is obtained. Then, visualizations are used to stimulate the creative imagination. It brings a pleasant warmth and heaviness to the limbs and torso.

It is accurate to think of autogenic training as deep relaxation combined with guided imagery. Autogenic means self-generating. It is possible to do the technique yourself with practice. Autogenic training has been shown to have both psychological and physiological benefits in performance in sports and games.

Autogenic conditioning is a proven method of improving athletic performance and is used by world-class athletes in many different sports. Most athletes contending at the Olympic games level of competition have used some form of autogenic conditioning to improve their athletic ability.

There are certain standard methods of training guided by Elmer and Alyce Green

Begin your relaxation training by sitting in a chair with your back fairly straight. This helps support your body with a minimum of muscle energy, as you become more and more relaxed. Also, practicing while seated and awake, rather than lying down, will help you better use throughout the day the relaxation skills you are learning. You are more likely to go to sleep if lying down, and if asleep you will not be learning how to relax during the day. Place your feet flat on the floor with your hands resting comfortably in your lap. Close your eyes to cut down on distractions and to help you more easily become aware of the minute changes as they take place inside your body.

Let yourself relax as deeply as you can right now by just being aware of your breathing in and out.

The phrases used in this exercise were provided by Elmer and Alvce Green of the Menninger Foundation and are based on a system called Autogenic Training, which was developed a number of years ago by Johannes Schultz.

Learning to relax is learning to allow you to relax, not trying or forcing yourself to relax. Actively forcing yourself will often produce an increase in tension, the opposite of the goal of being able to relax at will.

During this exercise, I will read a phrase to you similar to this, "My arms and hands are heavy and warm". Then I will pause long enough for you to silently, mentally repeat the phrase to yourself while just allowing yourself to imagine and feel what that phrase suggests to you. Just sit back and let your mind and body-relax deeply and comfortably.

Let your eyes remain closed and relaxed

I feel quite quiet.

My feet, my ankles, my knees, and my hips feel heavy, relaxed and comfortable. My trunk and the whole central portion of my body feel relaxed and quiet. I am beginning to feel quite relaxed. My hands, my arms, and my shoulders feel heavy, relaxed and comfortable.

My neck, my jaws, and my forehead feel relaxed. They feel comfortable and smooth.

My whole body feels quiet comfortable, and relaxed. My arms and hands are heavy and warm. I feel quite quiet.

My arms and hands are relaxed, relaxed and warm.

My hands are warm.

Warmth is flowing into my hands; they are warm, warm.

My hands are warm, relaxed and warm.

I feel quite quiet.

My mind is quiet.

I withdraw my thoughts from the surroundings and I feel serene and still.

Deep within myself 1 can visualize and experience myself as relaxed, comfortable and still.

I am alert, but in an easy, quiet, inward turned way.

My mind is calm and quiet.

And, I feel an inward quietness.

Just maintain the inward quietness on your own for a moment.

While remaining relaxed with your eyes closed, notice what your body feels like, now, as compared with when you began the relaxation. What changes took place

These are the changes associated with becoming more relaxed and are feelings and sensations you are learning to recreate in yourself throughout the clay, whenever you choose to do so.

Learning to relax when we need to during the day takes practice, as does any skill. So, make some reminder to yourself perhaps a piece of colored tape on your watch or red ribbon on the backpack zipper. When you see that reminder, practice, momentarily, some part of this exercise that seems most effective for you. And, do the entire exercise every day or two, until you are able to deeply relax in a very short time.

Be patient with yourself as you learn these new skills. And let this be fun.

Now, gently reactivate yourself by taking five, slow, full breaths. With each breath feel you becoming more alert, fuller of energy. Stretch and feel the energy flowing through your body and open your eyes at your own rate.

3. Biofeedback and Sports Performance

3.1 Biofeedback

Biofeedback is the use of instruments to detect and amplify specific physical states in your body that you usually don't notice and to help bring them under your voluntary control. Biofeedback machines give you immediate information about such biological conditions as muscle tension, skin surface temperature, blood pressure, heart rate etc. The feedback from the instruments provides you with instant and continuous information so that you can observe and modify your physical experience of stress. Biofeedback is often used as a supplement to many of the relaxation exercises. After one has used biofeedback instruments to develop his or her ability to read the tension in various body systems, he or she can continue without a machine. If one starts out to thinking that biofeedback machine can magically erase tension from the body, he or she may end up very frustrated. That because there are basically two steps in relaxation: first to identify when and where the tension is inside your body, and then to let go of it. Alyce and Green developed the clinical application of biofeedback in 1960.

Symptom Relief:

Tension headache
Migraine headache
Hypertension
Insomnia
Muscle spasms
Anxiety
Phobic reaction
Asthma
Stuttering
Epileps
Attention deficit disorder
Pain management
Panic attacks
Gastrointestinal disorders

Types of biofeedback:

1. Electrornyography (EMG) biofeedback; 2. Thermal biofeedback; 3. Electroencephalographic (EEG) biofeedback; 4. Galvanic skin response (GSR) biofeedback; 5. Heart rate biofeedback etc.

3.2 Muscle-relaxation Skills

Emotional disturbances related to perceptual-cognitive disagreements, socio-cognitive conflicts or cognitive-emotional crises result in high-strung emotionality characterized by heightened autonomic and cortical arousal; feelings of anxiety and apprehensions; cognitive dissonance and worry. These all ultimately terminate in somatization of anxiety. The most obvious index of somatization is muscular instability, stiffness, pains and fatigability. In case of motor activations related to the field of sports, muscular stiffness and muscle and bone- joint rigidity, result in double bindedness wherein both the agonist and antagonist (muscles of both sides- frontal and rear) muscles become stiff and rigid, and in consequence a marked decrease in movement and motor coordination; motor ability and motor movement is observed. The most scientific solution to this problem is to get trained up with muscle-relaxation activities. This could be done both in active and in passive ways. The passive ways (such as- meditation, meditative relaxation and "shavashanas") are more time-consuming and at times, less effective to control high-strung emotionality. Whereas, the active relaxation ways are done through muscle-relaxation training procedures, which are not only economic (in terms of both money and time), but also extremely effective in controlling a lots of psychobiologically-mediated problems too.

3.3 Progressive Muscle Relaxation:

Edmund Jacobson (1930) first developed the concept of progressive relaxation and in 1938 he made the final technique of progressive muscle relaxation (PMR) exercise. The basic principle employed by the technique is the alternate tensing and relaxing of the major muscle groups in the body. In PMR each major muscle group is systematically contracted in turn, so that the learner can identify the unique tension sensation for that muscle group and then the tension is released to achieve a state of relaxation (McGuigan, 1984). It seems that the basic mechanism that enables the athlete to control his or her arousal and tension during competition is the learning of this sense of tension awareness. The athlete learns to associate muscle relaxation with a deep inspiration and expiration which can then be done by itself to elicit relaxation' on the spot' during competition.

PMR diminishes high blood pressure, high pulse rate, tension, anxiety, insomnia, depression, fatigue, muscle spasms, neck and back pain, mild phobias and stuttering, make respiratory rate smoother and slower (Jacobson, 1938). An important psychological consequence of PMR is that the individual's level of self-esteem and self-assurance is likely to be increased as a result of much improved control of stress reactions. PMR also effective in reducing emotional stress and adjustment problems in different spheres of life, and to increase attentive capacity (Chakrabarti, 2001).

PMR can be clone in either a sitting or lying posture. The latter is usually more conducive to relaxation, but athletes should sit up if they tend to fall asleep. Practicing of PMR exercise should not occur within an hour after eating a meal. Approximately 30 minutes are needed during initial practice. There are 26 exercise items in PMR technique. Pause about 20 to 30 seconds after each contraction so relaxation can continue for brief periods.

3.4 Visuo Motor Behavior Rehearsal (VMBR)

VMBR is terminologically a technique of therapeutic assistance to rectify some movement components involved in any particular game or sports. For instance, if a set-piece movement in the game of soccer is considered, or backhand volley for a tennis player is concerned with the process of rectification involves a package of training methods developed and theorized by Suinn in 1980 and later on further developed in 1985.

VMBR essentially involves some forms of visual aids (viz., photos, photo-slides, video-recorded visual information etc) assisted constructions of imageries related to some sports activities. These visual aids are used aiming at rectification of some faulty movements following some progressive steps of imagery-controlled motor behavior or movement toward desired level of performance. This technique involves uniquely developed psychotherapeutic programs designed specifically to rectify actual performance-related problems on individual basis. The actual rectified behavior-rehearsal is developed and guided to the player by the help of sports-trainer with the help of psychotherapist definitely in the simulated laboratory set-up, and thereafter is transferred positively to the actual playing conditions using cue- controlled progressive training method to adopt to the competitive situation.

Reference Books:

1) Human Motivation- Robert E. Franken.
2) Psychology in Sports - Richard M. Suinn
3) Psychology of Sports - Seppo *E.* Iso-Ahola and Brad Hatfield.
4) Introduction to Science and Soccer - Thomas Reilly.
5) Applied Sport Psychology - Jean M. "Williams.
6) Sport Psychology - Tony Morris and Jeff Sunners.
7) Psychological Dynamics of Sport AND Exercise - Diane L. Gill.
8) Sport Psychology - Roxel A. Aprtiebo.
9) Competitive anxiety in Sport - Rainer Martens, Robin S. Vealey and Damon Burton.
10) A Manual of Psychology - J. N. Sinha.
11) The Relaxation and Stress Reduction Workbook - Martha Davis, Elizabeth Robbins Eshelman, Matthew McKay.