

Arousal (Psych up & Psych down), Anxiety & Stress on Sport Performance

Nikos Comoutos, Ph.D
Associate Professor



Outline

- Definitions within the concept of psyching up and psyching down, stress, coping, and anxiety field.
- Identify the common demands sports performers encounter and the anxiety and coping responses following exposure to these demands.

Reality

- The stress, arousal and anxiety literature is one of the most studied and frequently cited topics within applied sport psychology



Myth or reality?

Pressure is inherent into sport situations, therefore athletes need to learn how/develop abilities to effectively respond to the mental, emotional, and physical demands of a competitive situation.



Myth or Reality?

Doesn't matter what athletes score on stress, anxiety, or arousal inventories, but how they perceive their stress, anxiety, or arousal related feelings and symptoms, how they handle them, and how they act, react, or behave when experiencing them.

Defining Anxiety

- A negative emotional state in which feeling of nervousness, worry and apprehension are associated with activation or arousal of the body
- **State anxiety—temporary emotional state**
 - Cognitive state anxiety—worrying, negative thoughts
 - Somatic state anxiety—perceived physiological activation
- **Trait anxiety—behavioral disposition**



Managing Intensity ...

...instead of managing anxiety

Defining Intensity - Arousal

- the amount of physiological activity you experience in your body which is determined in the brain, communicated via the nervous system.
- Has two components:
 - What you feel in your body when you are in the start area?
 - How do you perceive what your body feels?
- Ranges from being very relaxed to being very anxious

Defining arousal...

- A general physiological and psychological activation, varying on a continuum from deep sleep to intense excitement
- Arousal is not automatically associated with pleasant or unpleasant events
 - Neutral term
 - Equally aroused by winning the lottery/a death

Indicators - Body

- Are more central: heart rate and brain activity itself
- Others are more peripheral: skin conductance, peripheral temperature, and muscle tension

In Individuals

- Subjectively experience signs of arousal level
- such as pounding heart
- sweaty palms
- tight muscles
- shortness of breath



Physical and mental aspects of intensity

- If you realize that your hand palms are sweating, do you perceive this as a good sign or a bad sign?
- If you realize that your heart rate has increased is this good or bad?
- What do these mean to you?
- Are these signs of excitement or anxiety?

Perceiving physical intensity

- Being nervous doesn't have to mean that you are scared about how will you do, it can also mean "I am ready! I care for this race!"



Perceiving race intensity...

- Pressure is only as big as you let it be
Benjamin Raich
- ...my hands get sweaty, I lose my balance and my legs feel hollow
Casey Puckett



Our Perception is critical...

**«... It's not the situation
per se that upsets people
but their perception of the
situation ...» (Hepictitus)**

Sources of stress & anxiety

- **Situational sources**

- Event importance
 - The more important, the more stress it provokes
- Uncertainty
 - The greater the uncertainty, the greater the stress

- **Personal sources**

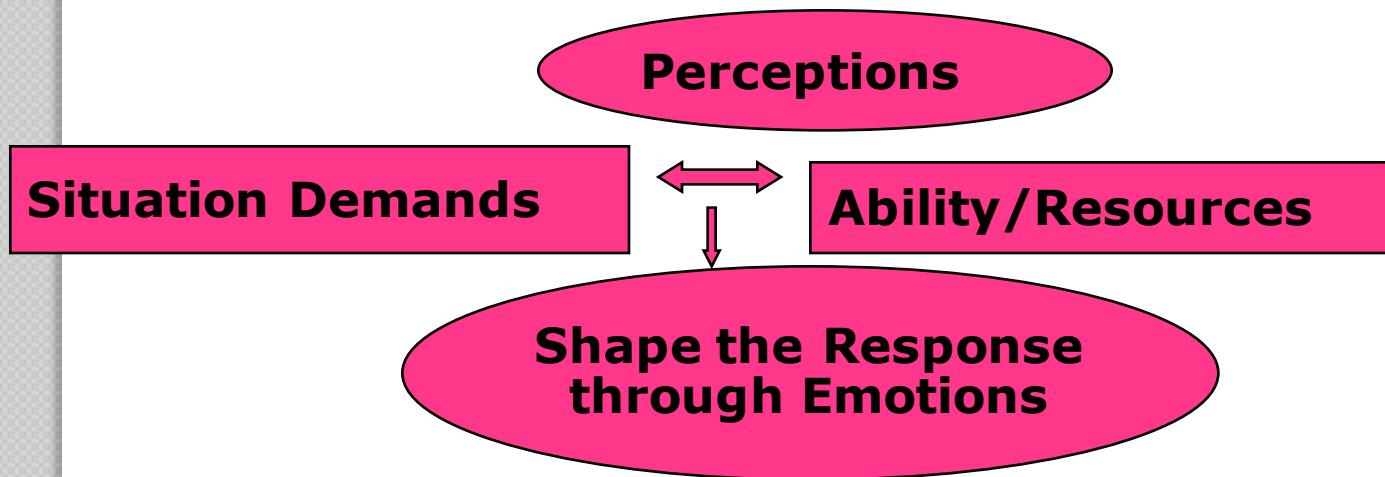
- Trait anxiety
 - A highly trait anxious person, perceives a race as more threatening
- Self-esteem
 - Low self-esteem → low confidence → more SA
- Social physique anxiety →
 - High anxiety because others see their physique, more stress


Cognitive appraisal

- Mental evaluation of a stressful situation's demands, resources, and consequences (Cox, 1994).
- The process of categorizing all facets of a situation (internal or external) with respect to its significance for well-being (Lazarus & Averill, 1972).

Vallerand 1987

- Appraisal-related processes affect the reactions of people.
- "...It's the perceptions of the event and not the event per se that shape which emotion will be experienced"
- ("Ου τα πράγματα ταρασσει...αλλ' αι περί των πραγμάτων δόξαι", Επίκτητος)
- Emotions lead to performance:



- 
- The perception of the demands of the situation (threatening or challenging) interacts with the perception of ability or resources availability that are required to meet the demands.
 - Sport psychology consultants can ...
 - **stimulate athletes to make effectively enhancing appraisals of situations, resources, and physiological responses to competitive situations.**

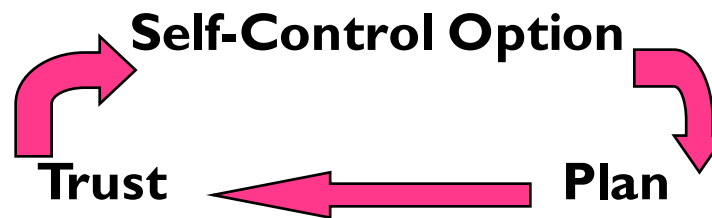
Hardy personality

- The development of the theory was based on research on sickness resistance.
- Psychological hardiness describes the personalities of people who have the tendency to view stressful situations in a positive way, as challenging, exciting, and beneficial.
- Hardy people have 3 general characteristics which describe how they appraise situations as challenging and growth-promoting:
 1. Feel *committed* to their life activities
 2. Believe they can *control* the events of their experiences (decisional, cognitive, coping)
 3. Anticipate demands or changes as exciting *challenges*
- "Hardy personality style is a combination of cognition, emotion, and action aimed at survival and the enrichment of life through growth"
- Hardy personality characteristics can be learned and developed.

It's a choice we have as free human beings to view stressful events as an opportunity to grow through

ALTERNATIVE PERCEPTIONS OF AROUSAL

- Athletes have the *empowerment/self-control option to respond* to arousal and nervousness either positively or negatively. This option comes from our ability to perceive and appraise situations differently.
- *Ravizza's Model on self-control (1995)*



- **It's okay, it's natural to be nervous!!!**
- Athletes need to learn how to be effective performers when they are nervous.
- They need to learn to focus their mind on the task-at-hand while their bodies are nervous, excited, aroused.



3 Questions...

1. How is arousal interpreted by an athlete?
2. What is the relationship between arousal and performance?
3. What can athletes do to regulate their arousal level and find their optimal level?



How is arousal interpreted by an athlete?

Measuring arousal

- **By simply asking questions**
- Ask him/her how s/he feels when game is approaching...
- Ask him/her how s/he feels under great pressure to perform.
- **LISTEN** to their answers...

How is arousal interpreted by an athlete?

- What does s/he feel (e.g., doubts, worries, fears) and what does s/he sense (e.g., tensed muscles)?
- Is this heightened arousal perceived positively (e.g., pumped up) or negatively (e.g., nervousness)?
- An athlete **CAN LEARN** to view arousal as his/her point of **readiness for action!!!!**



How is arousal interpreted by an athlete?

- Is this sensed on specific parts or all over (i.e., faster breathing, muscle tension, stomach tension)?
- What words does s/he use to describe his/her arousal?
 - Try to view the issue through his/her eyes

Self-report measures

- Paper and pencil self-report measures: provide insight into a range of thoughts and feelings that are difficult to observe
- Examples: The Competitive Sport Anxiety Inventory – 2 (CSAI-2) – state anxiety, cognitive and somatic anxiety, confidence.
- Adjective checklists
- Thayer Activation-Deactivation Adjective Checklist (ADACL) – 20 adjectives, energetic, calm, tired, tense.



Behavioral signals

- Flushing (reddening in the face and neck)
- Sweating
- Talking excessively
- Silence
- Hand tapping or shaking

Physiological indicators

- Arousal involves tissues and organs in the body
- Heart rate (HR-beats of the heart per minute)
- Skin conductance or Galvanic skin response (arousal increases, sweat is secreted, increases the salt on the surface of the skin thus higher levels of electrical activity)
- Peripheral temperature (as arousal increases temperature decreases, monitor in the skin using thermal detector)

Problems with physiological measures

- The use of self-report and physiological measures have showed low levels of agreement, except at extreme levels of arousal.
- People are not always sensitive to their bodily processes.
- Psychological processes affect subjective interpretation which affect bodily sensations
- **Physiological indicators indicate levels of arousal not meaning of that arousal level**

What is the relationship between arousal & performance?

- Which theories tried to explain this relationship?
 - Inverted U theory
 - Cognitive-somatic arousal & performance
 - Catastrophe model

Finding your optimal level of arousal

- Athletes ought to discover the level of arousal that suits them best and allows them to maximize performance...
 - To do so, they have to pay close attention to themselves for sometime; observe themselves closely
 - Pre- and post-game thoughts
 - Pre- and post-game emotions
 - Pre- and post-game bodily responses and reactions



There is logic behind these..

- **Pressure and stress are perceived and interpreted, NOT IMPOSED!**
- What situations or people bring on the sense of pressure?
- How can the athlete deal with this sense of pressure?



Dealing with pressure...

- 1. Managing the environment**
- 2. Managing the Body**
- 3. Managing the Mind**

1. Manage the environment

Diminish

- Result uncertainty
- The meaning of the result, relating to one's self-worth
- Worries for the game environment
- Worries for his/her readiness

- Manage relations with significant others

- Focus on what s/he CAN control
- Teach him/her to evaluate his performance

2. Managing the Body

- Using imagery
 - whole performance
 - parts of executions
- Using relaxation techniques
 - Through breathing
 - Muscle relaxation scripts
 - BE CAREFUL when these are used close to game time can impact readiness

3. Managing the mind

- **Manage negative thoughts**
 1. Recognize them
 2. Replace them
 3. Stop them
- Focus the attention on breathing air to clear the mind
- Lock up his/her worries at home or in the locker room before entering the field!



Freeing one's mind and body

- Pick a “quiet spot” on each playing field!
 - Turn to the quiet spot when nervousness is perceived, breathe and refocus
 - **BE CAREFULL:** Do not let him/her pick the score it may hurt than help!
 - It is preferable to pick a spot at higher level; thus by lifting the head to see it s/he will also automatically lower his shoulders and relieve diaphragm pressure which eases one's breathing.
 - Let him/her have his/her choice



Freeing one's mind and body

- What should anxiety and pressure mean for an athlete?
 - I am ready and I care for what I am about to do
 - Do not scare them by the realization of their pre-game anxiety
 - Help them see the other side of the coin...

Kostas Kenteris



... I think anxiety and stubbornness make you use all of your strengths and compel you to reach your maximum performance level



Managing anxiety and pressure guidelines

1. Throw away expectations
2. Lock up expectations and worries
3. Forget the outcome focus on the execution
4. Reduce his/her sources of anxiety
5. Being nervous before the game means you are ready
6. Pick a quiet spot
7. Breathe
8. Focus your attention on the task-at-hand again and again



Relaxation techniques!!!



Breathing...

Psyching up techniques

A normal day we take over 20.000 breaths when working at the gym 30.000!!!

- Rapid breathing (practiced away from competition to develop the skill, so it can be effectively applied before or during competition as needed)
- Arousing words and thoughts: “energetic, dynamic, explosive, feel like a lion)
- Psyched up behavior (running on the spot or up and down, slap the racket, bounce the ball hard)

Psyching up techniques

- Stimulating imagery

Imagine themselves in highly arousing situations or

Imagining the heart pumping vigorously and the oxygen-rich blood rushing to the muscles (e.g., weightlifters)

- Stimulating teammates (asking teammates to shout at them, physically contact them)
- Arousing music



Psyching down techniques

The role of breathing

- Increases oxygen in blood
- Transfer energy to muscles
- Proper breathing for relaxation is done using the diaphragm

1. Breathing well

- Use your diaphragm
- Imagining your lungs are divided into 3 parts (from top to bottom)
- These parts are filled with air sequentially from bottom to top
- Sustain the air for a few seconds
- Imagine emptying the lungs again through their bottom part
 - The ribs should expand toward the sides



1. Breathing well(Cont'd)

- After learning to breath well, try to do about 40 breathes per day
- Relate breathing well to daily living in order to reach automaticity
- Breath well whenever possible

Focus on your breathing...

- Athletes can focus on their breathing rhythm and clear their minds
- If they are focused on a negative thought, ask them to image the air going in and out their body through their minds' eyes!
- Teach them to think and feel more relaxed with each breathe they take
- Breathing can be used at any given time
 - time outs, before or after execution.



Progressive relaxation (Jacobson, 1974)

- Intensive thoughts tend to tense our muscles
- Subsequently, this muscle tension enhances the individual's subjective feelings of nervousness
- Progressive relaxation, relaxes the muscles which sense is contradictory to one's feelings of anxiety



The logic of progressive muscle relaxation

- Each intensive muscle group tension is followed by a longer relaxation session of the same muscle group
- Individuals learn to recognize the difference between a tensed and a relaxed muscle
- When a person is relaxed s/he cannot also be tensed
- Muscle relaxation brings along cognitive calmness



Progressive muscle relaxation (1)

- Tense the muscle group for 5-7 seconds and then relax it for about 30 seconds
- The goal is to teach the athlete the different feelings of tension and relaxation so s/he will develop the awareness of sensing his/her tensed muscle right away

Progressive muscle relaxation (2)

- Initially, each session takes about 30 minutes
- Later on, time diminishes
- Instructions are given by the coach, the sport psychologist or a tape
- Wait 1 hour after food intake
- Instructions are essential at the beginning

Progressive muscle relaxation (3)

- Before you start the session, explain to them what you will do
- They can follow the instructions either sitting or laying down
- Repeat each tension/relaxation cycle twice

Progressive muscle relaxation (4)

After a few sessions, talk with them and ask them of their thoughts and feelings during the relaxation

How did it feel?

Did they manage to relax?

Upon mastering the relaxation, then they can modify it to better suit their needs



Applied relaxation (Ost, 1988)

(the next stage of progressive muscle relaxation)

- **Stage 1.** Use progressive muscle relaxation (15-20 min)
- **Stage 2.** Try to relax the muscle groups that are tensed (5-7 min)
- **Stage 3.** The procedure focuses on one's breathing and the use of "relax" (2-3 min)
- **Stage 4.** The individual learns to sense his/her muscle tension and relax only those parts of the body (60-90 sec.)
- **Stage 5.** Quick relaxation that combines specific muscle group relaxation with breathing (20-30 sec).

Other

- Thought stopping (self-talk)
- Rationalization (including in cognitive therapy and rational emotive therapy).
- Imagery