CHAPTER 4

Arousal, Stress, and Anxiety
Session Outline

• Is arousal the same as anxiety?
• Defining arousal and anxiety
• Measuring arousal and anxiety
• Relationship between trait and state anxiety
• Stress and the stress process
• Sources of stress and anxiety

(continued)
Session Outline (continued)

• How arousal and anxiety affect performance
• Why arousal influences performance
• Implications for practice
• Recognizing symptoms of arousal and state anxiety
Is Arousal the Same as Anxiety?

- *Arousal* is a blend of psychological and physiological activation, varying in intensity along a continuum.
- *Activation* is a synonym for arousal.
- *Anxiety* is a negative emotional state with feelings of worry, nervousness, and apprehension associated with activation or arousal of the body.
Behavioral Signs of Anxiety

• Synonyms for “anxious”?
• Behavioral signs your team mates are anxious?
Recognizing Symptoms of Arousal and State Anxiety

- Cold, clammy hands
- Constant need to urinate
- Profuse sweating
- Negative self-talk
- Dazed look in eyes

(continued)
Recognizing Symptoms of Arousal and State Anxiety (continued)

- Feeling ill
- Headache
- Cotton (dry) mouth
- Constant sickness
- Difficulty sleeping
Recognizing Symptoms of Arousal and State Anxiety (continued)

- Increased muscle tension
- Butterflies in stomach
- Inability to concentrate
- Consistently better performance in nonevaluative situations
Measuring Arousal and Anxiety

• Physiological signs (heart rate, respiration, skin conductance, biochemistry)

• Global and multidimensional self-report scales (e.g., CSAI-2, SCAT, SAS)

• Complete SCAT now.
Sources of Stress and Anxiety

• **Situational sources**
  – Event importance
  – Uncertainty

• **Personal sources**
  – Trait anxiety
  – Self-esteem
  – Social physique anxiety
Figure 4.9

Personal factors
- Trait anxiety
- Self-esteem
- Social physique anxiety

Person-by-situation interaction

State anxiety or arousal

Situational factors
- Importance
- Uncertainty

© 2011 Human Kinetics.
Relationship Between Trait and State Anxiety

• State anxiety refers to “right now” feelings that change from moment to moment.

• Trait anxiety is a personality disposition that is stable over time (e.g., SCAT)

• High- versus low-trait anxious people usually have more state anxiety in highly evaluative situations.
Defining Arousal, Stress, and Anxiety

Trait

Trait anxiety
An acquired disposition that predisposes a person to perceive a wide range of objectively nondangerous circumstances as threatening and to respond to these with disproportionate state anxiety levels.

States

Arousal
A general physiological and psychological activation of the organism that varies on a continuum from deep sleep to intense excitement.

State anxiety
Moment-to-moment changes in feelings of nervousness, worry, and apprehension associated with arousal of the body.

Cognitive state anxiety
Moment-to-moment changes in worries and negative thoughts.

Somatic state anxiety
Moment-to-moment changes in perceived physiological arousal.
Stress and the Stress Process

• **Stress**: A substantial imbalance between physical and psychological demands placed on an individual and his or her response capability under conditions in which failure to meet demands has important consequences.

• **Stress process**: Implications of the stress process for practice (intervene at any of the stress process stages).
Figure 4.3

Stage 1: Environmental demand (physical and psychological)

Stage 2: Individual’s perception of the environmental demand (amount of psychological or physical “threat” perceived)

Stage 3: Stress response (physical and psychological)
- Arousal
- State anxiety (cognitive and somatic)
- Muscle tension
- Attention changes

Stage 4: Behavioral consequences (performance or outcome)

© 2011 Human Kinetics.
Why Arousal Influences Performance

- Increased muscle tension, fatigue, and coordination difficulties
- Changes in attention, concentration, and visual search:
  - Narrowing of attention
  - Shift to dominant style
  - Attending to inappropriate cues

(continued)
Why Arousal Influences Performance (continued)

• Changes in attention, concentration, and visual search:
  – Performance worries and situation-irrelevant thoughts
  – Visual cues are differently identified and processed when performers are anxious
Figure 4.8

- **a**: Optimal attentional field—moderate (optimal) arousal
- **b**: Attentional field too broad—low arousal
- **c**: Attentional field too narrow—high arousal

© 2011 Human Kinetics.
How Arousal and Anxiety Relate to Performance

• Drive theory
• Inverted-U hypothesis
• Individualized zones of optimal functioning (IZOF)
• Multidimensional anxiety theory
How Arousal and Anxiety Affect Performance (continued)

- Catastrophe model
- Reversal theory
- Anxiety direction and intensity
- Significance of all these views
Drive Theory Predictions

• On well-learned skills, an individual’s arousal or state of anxiety increases; so too does performance.

• Note: Also used as the basis for social facilitation theory (the presence of others enhances performance on simple or well-learned skills and inhibits performance on complex or unlearned skills).
Inverted-U Hypothesis

Performance

Low

High

Low

High

Physiological arousal

Performance vs. Physiological arousal
Individualized Zones of Optimal Functioning (IZOF) Hypothesis

- Athlete A (low IZOF)
  - In zone (best performance)
  - Out of zone

- Athlete B (moderate IZOF)
  - Out of zone
  - In zone (best performance)
  - Out of zone

- Athlete C (high IZOF)
  - Out of zone
  - In zone (best performance)

State anxiety level

Low to High
Multidimensional Anxiety Theory

- *Cognitive anxiety* is negatively related to performance.
- *Somatic anxiety* is related to performance in an inverted-U pattern.
- There is little support for its predictions.
Complete & Score CSAI-2

- Change instructions to “trait” instructions (so CSAI-2 becomes CTAI-2)
- 3 subscales: Cog-A, Som-A, SC
- In 3 groups, identify subscale items (which items measure which subscale?)
- Score the CTAI-2 for homework – results to portfolio
- Complete the CSAI-2 before a “competitive” event, modify items for non-sport event (e.g., test)
Catastrophe Model

Low cognitive anxiety (worry)

Performance

Low

Physiological arousal

Low

High
Catastrophe Model

Performance vs. Physiological Arousal

- High cognitive anxiety (worry)

- a: Performance increases with physiological arousal.
- b: Performance decreases with physiological arousal.

Low to High:
- Performance: Low → High (worry increases)
- Physiological arousal: Low → High (arousal increases)

High to Low:
- Performance: High → Low (worry decreases)
- Physiological arousal: High → Low (arousal decreases)
Fig. 3: Hardy & Fazey's (1987) Catastrophe Model demonstrating the association between anxiety and performance.
Reversal Theory

• How arousal affects performance depends on an individual’s *interpretation* of his or her arousal level.

• Arousal can be interpreted as *pleasant* (excitement) or as *unpleasant* (anxiety). (Think about Loehr’s IPS quadrant).

• Arousal interpreted as pleasant facilitates performance.
Reversal Theory (continued)

• Arousal interpreted as unpleasant hurts performance.

• Bottom line: This view is interesting, but it is too early to draw firm conclusions (i.e., B.S.).
Reversal Theory

Hedonic Tone

High

Low

Relaxation

Boredom

Arousal

Low

High

Excitement

Anxiety
The graph illustrates the relationship between affective tone, arousal, and various emotional states.

- **Telic state**
  - Low Arousal: Relaxation (pleasant)
  - High Arousal: Anxiety (unpleasant)

- **Paratelic state**
  - Low Arousal: Boredom (unpleasant)
  - High Arousal: Excitement (pleasant)
Anxiety Direction and Intensity

• An individual’s interpretation of anxiety symptoms is important for understanding the anxiety–performance relationship.

• To understand the anxiety–performance relationship, we must consider both the intensity (how much anxiety one feels) and the direction (a person’s interpretation of anxiety as facilitating or debilitating to performance).
Anxiety Direction and Intensity (continued)

• Viewing anxiety as facilitative leads to superior performance.

• State anxiety is perceived as facilitative or debilitative depending on how much control the person perceives.

• Some support has been found for this view.

• Developing cognitive skills and strategies helps people view anxiety as facilitative.
Figure 4.7

Adapted with permission from Jones 1995.
Significance of All Arousal–Performance Views

• Arousal is multifaceted.

• It consists of the following:
  – Physical activation of arousal
  – Interpretation of arousal

• It is doubtful that the optimal level of arousal is always at the midpoint of the arousal scale.

(continued)
Significance of All Arousal–Performance Views (continued)

• Arousal and state anxiety do not always have negative effects on performance. They can be facilitative or debilitative depending on the interpretation.

• Self-confidence and enhanced perceptions of control are critical to perceiving anxiety as facilitative.
• Some optimal level of arousal leads to peak performance, but optimal levels of physiological activation and arousal-related thoughts (worry) are not the same.

• Interaction of physiological activation and arousal interpretation is more important than actual levels of each.
Significance of All Arousal–Performance Views (continued)

- “Psyching-up” strategies should be employed with caution because it is difficult to recover from a catastrophe.

- Athletes should have well-practiced self-talk, imagery, relaxation, and goal-setting skills for coping with anxiety.
Implications for Practice

• Identify optimal combinations of arousal-related emotions for best performance.

• Recognize how personal and situational factors interact to influence arousal, anxiety, and performance.
Implications for Practice

• Recognize signs of arousal and state anxiety.

• Tailor coaching strategies to individuals: Sometimes arousal must be reduced, other times maintained, and other times facilitated.

• Develop performers’ confidence and perceptions of control.