

Stuart Jones

STRESS AND ANXIETY IN SPORT AND EXERCISE

AIMS OF THE SESSION

- ✖ To discuss and provide a definition of anxiety, arousal and stress (and to differentiate between these).
- ✖ To consider and discuss the multidimensional nature of anxiety.
- ✖ To consider and define trait vs state anxiety.

AIMS OF THE SESSION (CONTINUED)

- ✗ To consider theoretical viewpoints on the relationship between anxiety/arousal and performance.
- ✗ To examine if anxiety can be beneficial to sporting performance
- ✗ To explore the studies examining personal and situational factors that might influence anxiety levels in sport.

TASK

- ✗ In groups:
- ✗ Part 1: When you consider the term “anxiety” what does it mean.... And consider what makes you feel more anxious.
- ✗ Part 2: - Consider anecdotally what aspects might heighten levels of anxiety in sport and exercise

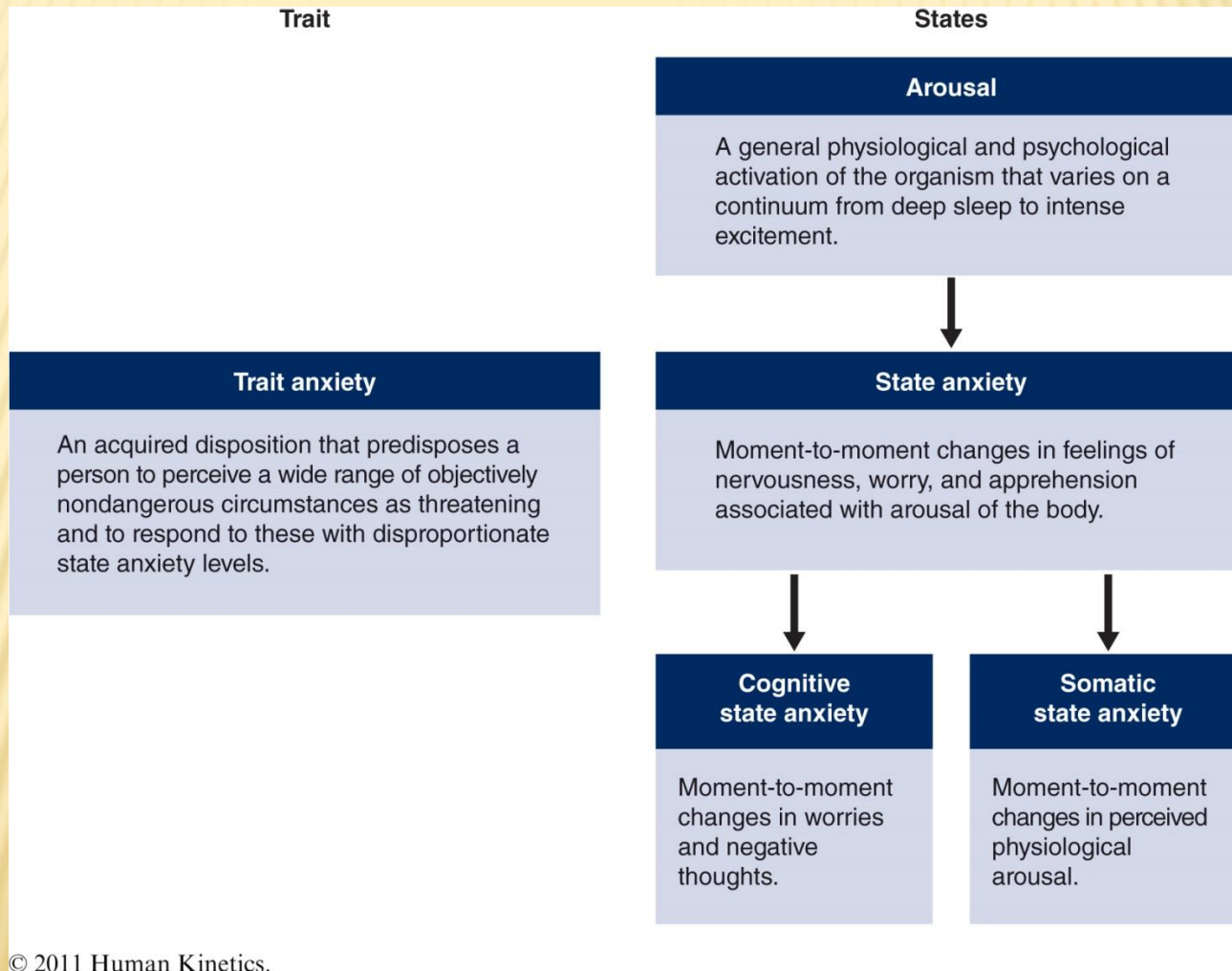
IS AROUSAL THE SAME AS ANXIETY?

- ✗ *Arousal* is a blend of physiological and psychological activation, varying in intensity along a continuum.
- ✗ *Anxiety* is a negative emotional state with feelings of worry, nervousness, and apprehension associated with activation or arousal of the body.
 - + Weinberg and Gould (2011).

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.
- ✗ High- versus low-trait anxious people usually have more state anxiety in highly evaluative situations.

ADAPTED FROM WEINBERG AND GOULD, 2011



SOURCES OF STRESS AND ANXIETY

✕ Situational sources

- + Event importance
- + Uncertainty

✕ Personal sources

- + Trait anxiety
- + Self-esteem
- + Social physique anxiety

STRESS.

- ✗ What is Stress?
- ✗ Very widely used with several interpretations.
- ✗ “a substantial imbalance between demand and response capability, under conditions where failure to meet that demand has important consequences” (McGrath, 1970).

MCGRATH'S MODEL OF STRESS.

✕ Stage 1.

+ Environmental Demand.

✕ Physical, Psychological, Situational.

✕ Stage 2.

+ Perception of Demand.

✕ Individual.

✕ How you normally view situations.

MCGRATH'S MODEL OF STRESS.

- ✕ Stage 3.

 - + Stress Response.

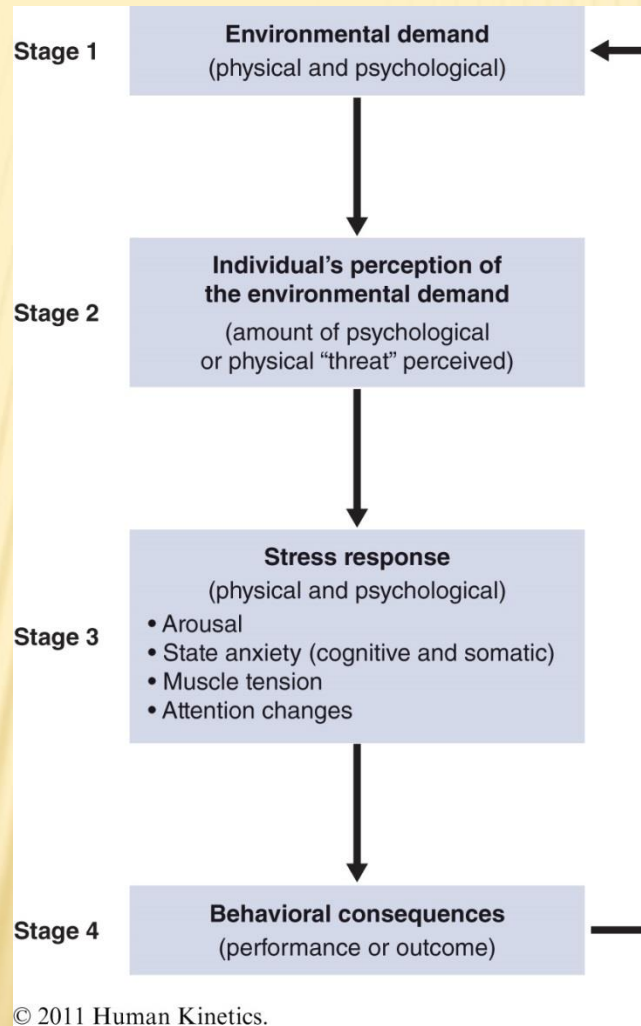
- ✕ Stage 4.

 - + Behavioural Consequences.

 - ✕ Physical and Non-Physical.

 - ★ Performance and Outcome.

MCGRATH (1970)



HOW AROUSAL AND ANXIETY AFFECT PERFORMANCE

- ✗ Drive theory
- ✗ Inverted-U hypothesis
- ✗ Individualized zones of optimal functioning (IZOF)
- ✗ Multidimensional anxiety theory

(continued)

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).

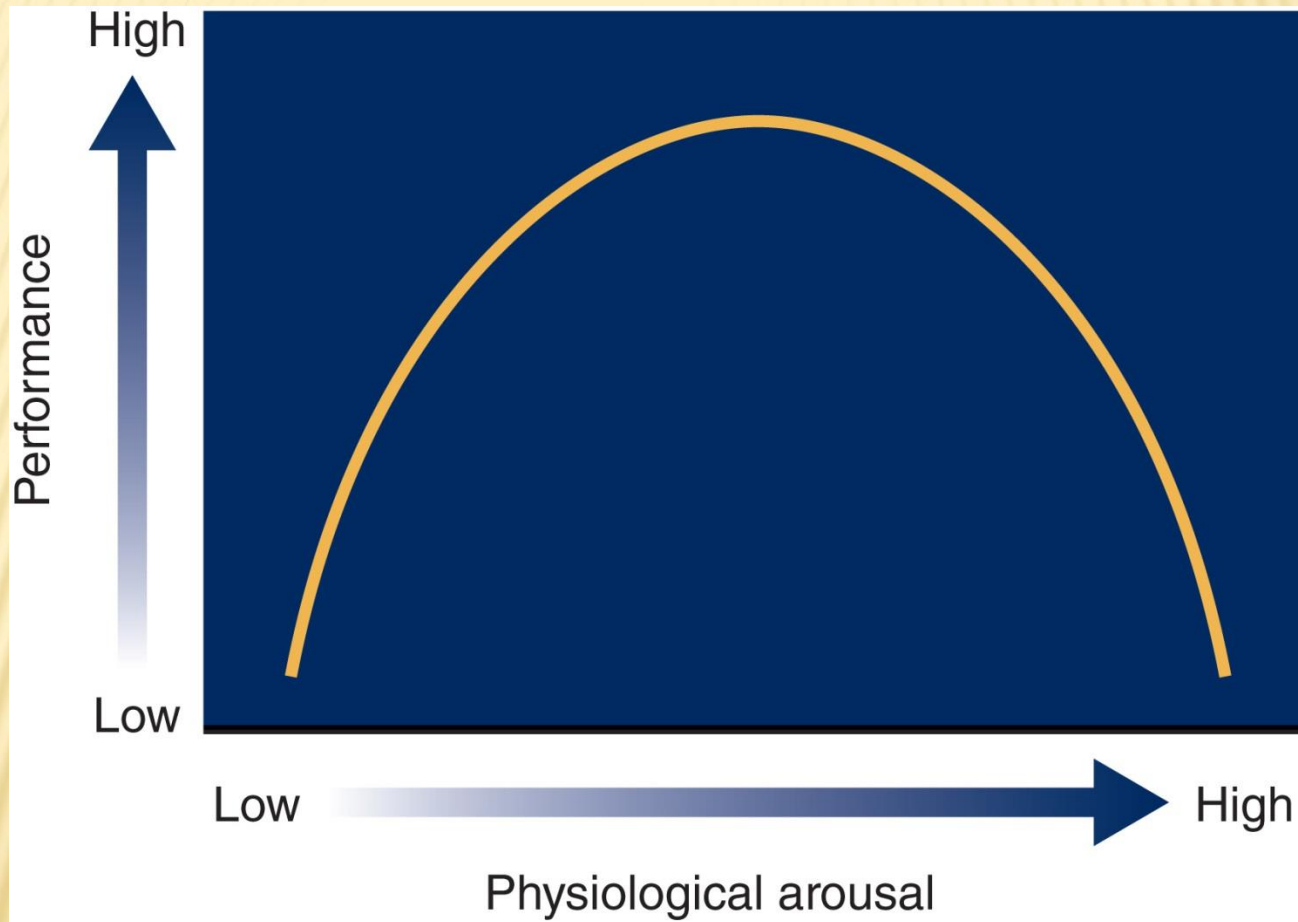
RELATIONSHIP BETWEEN AROUSAL/ANXIETY AND PERFORMANCE.

- ✗ Drive Theory (Spence and Spence, 1966).
- ✗ Lineal Positive Relationship between Anxiety and Performance.
- ✗ The more “psyched up we are, the better we will perform”.
 - + Martens et al (1990) – Little evidence for this.

INVERTED U HYPOTHESIS.

- ✗ Dissatisfied with the Drive theory many theorist turned to the Inverted U Hypothesis.
- ✗ At low arousal level – performance will be below their optimum.
- ✗ As arousal increases so too does performance until an optimum.
- ✗ Further increases sees a decline in performance.

INVERTED U HYPOTHESIS



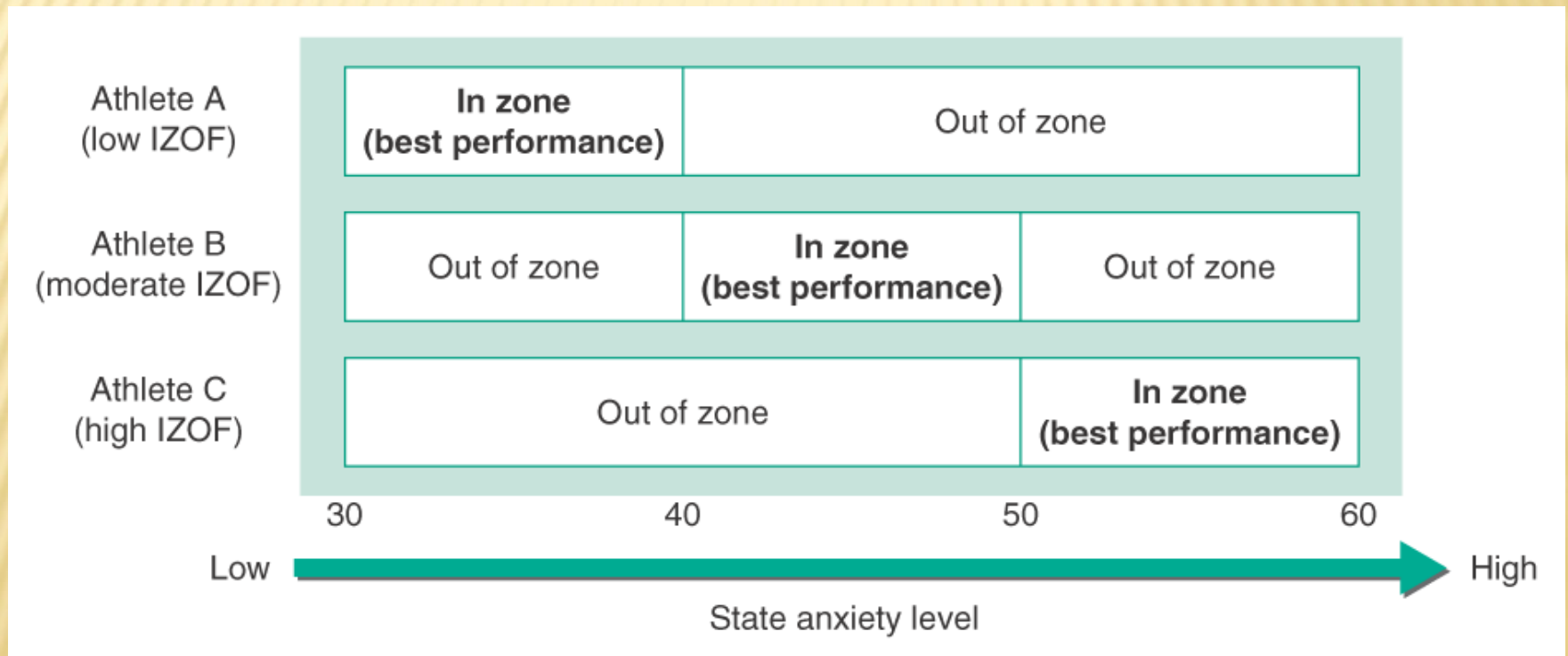
© 2011 Human Kinetics.

INVERTED U HYPOTHESIS.

- ✗ Has its supporters, but also has many criticisms.
- ✗ Individualised?
- ✗ Does this peaking occur at the mid point all the time?

INDIVIDUALIZED ZONES OF OPTIMAL FUNCTIONING (IZOF) HYPOTHESIS

✕ Hanin (1986).



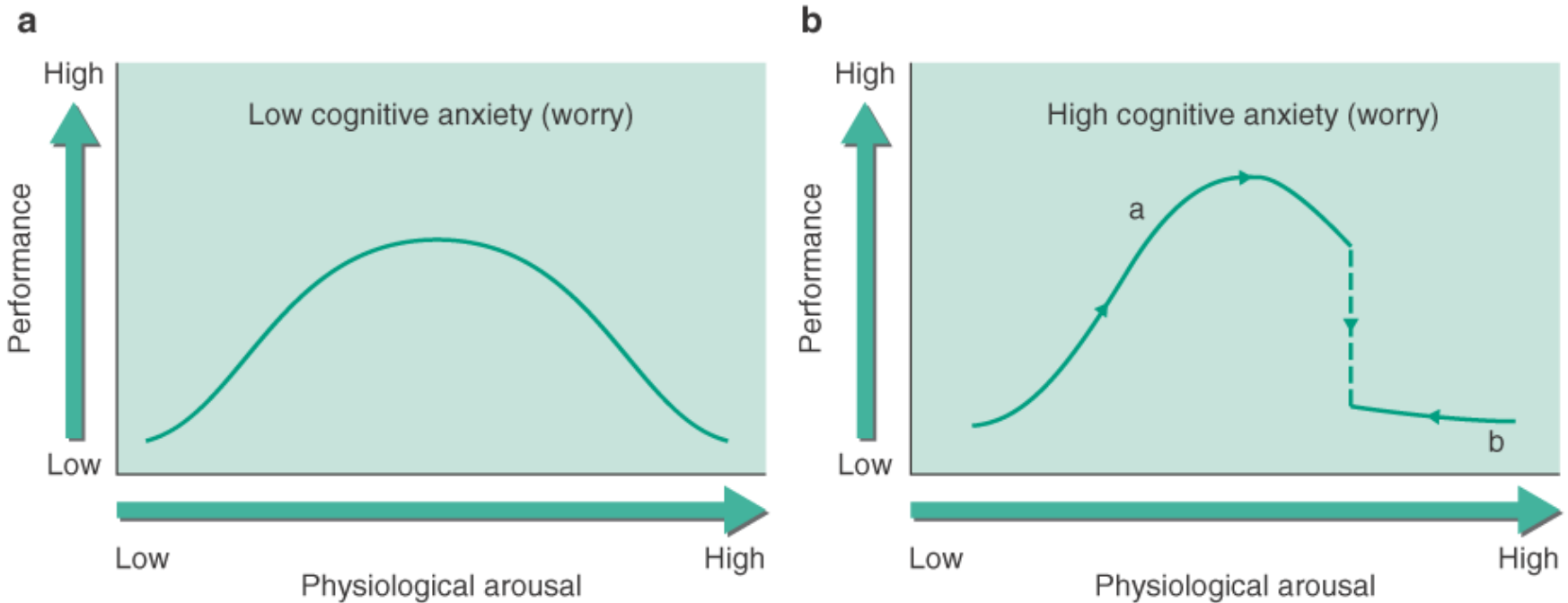
ISN'T ANXIETY MULTIDIMENSIONAL?

- ✖ These 3 theories on the anxiety / performance relationship has only looked at Physiological Arousal (Somatic Anxiety).
- ✖ What about Cognitive Anxiety?
- ✖ What about any interaction between Cognitive Anxiety and Physiological Arousal?

CATASTROPHE MODEL.

- ✗ Hardy (1990, 1996).
- ✗ Interaction between Physiological Arousal (Somatic Anxiety) and Cognitive Anxiety.
- ✗ Inverted U relationship between Physiological Arousal and Performance in Low Cognitive Anxiety.

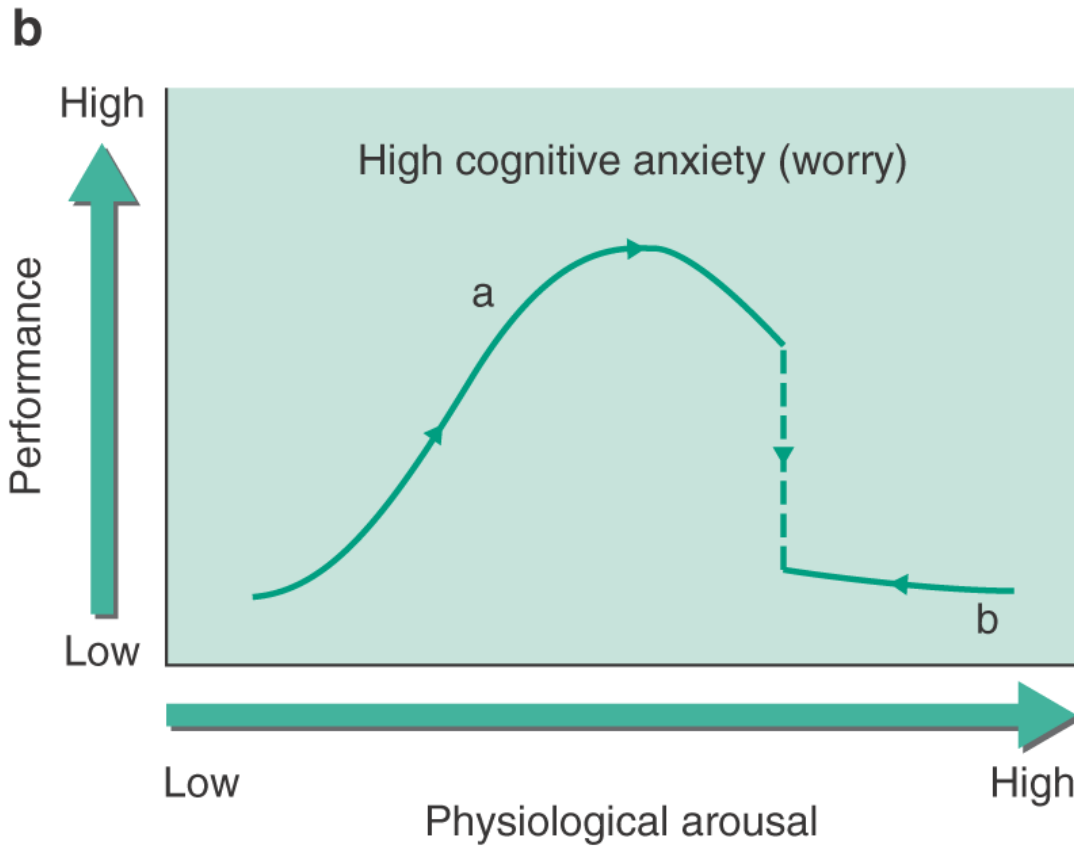
CATASTROPHE MODEL



CATASTROPHE MODEL.

- ✗ Hardy (1990, 1996).
- ✗ However in situations of high cognitive anxiety, the pattern follows the inverted U shape until it reaches an optimum.
- ✗ But then a DRAMATIC or CATASTROPHIC decline in performance if arousal level continues to increase.

CATASTROPHE MODEL



CATASTROPHE MODEL.

- ✗ There has been support for this model (Hardy, 1996; Woodman and Hardy 2001).
- ✗ Very hard to assess empirically.
- ✗ Mellalieu, Hanton and Fletcher (2006) study didn't support this theory.

REVERSAL THEORY (APTER, 1983)

- ✗ As much a theory of personality and motivation as it is arousal.
- ✗ Apter's theories states that human experience is organised in metamotivational states and how arousal effects performance dependents on where we fit in these states at that given moment.
 - + Metamotivation – Maslow = Motivations of people who are beyond the scope of basic needs.

(continued)

REVERSAL THEORY (CONTINUED)

- ✖ Four main metamotivational states along a continuum.
 - + Metamotivation – Maslow = Motivations of people who are beyond the scope of basic needs.
- ✖ 1) Means-End – are you motivated by achievement or enjoyment.
 - + Serious ----- Playful
- ✖ 2) Rules – Do you prefer to conform to rules or are you rebellious.
 - + Conforming ----- Rebellious

REVERSAL THEORY (CONTINUED)

- ✖ 3) Transactions – Are you motivated by control/power or by care, compassion, emotional support?
 - + Mastery ----- Sympathy

- ✖ 4) Relationships – Are you motivated by fulfilling your own needs, or by that of others?
 - + Self ----- Others

REVERSAL THEORY IN SPORTING PERFORMANCE

- ✘ How arousal affects performance depends on an individual's *interpretation* of his or her arousal level in relation to the personality and the situation.
- ✘ Arousal can be interpreted as *pleasant* (excitement) or as *unpleasant* (anxiety).
- ✘ 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.

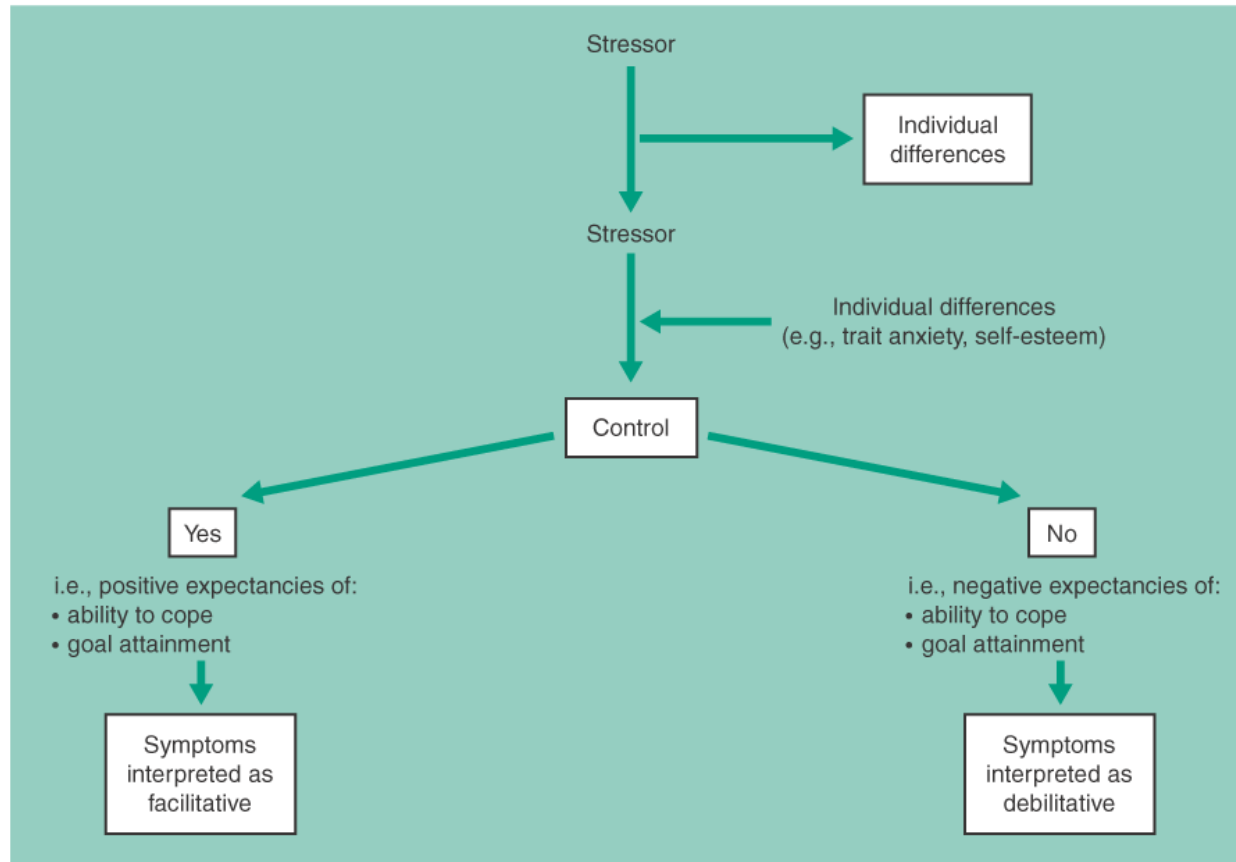
TASK

- ✖ Can you think of scenario's in which have anxiety was beneficial to performance.
- ✖ It does not have to be a sports/exercise related performance.
- ✖ Describe how you were feeling and how did you think these feelings were positive to your performance?

CAN ANXIETY EVER BE BENEFICIAL?

- ✗ For many years researchers have assumed that anxiety only have negative effects on performance.
- ✗ However
- ✗ Jones and Colleagues in a number of studies have highlighted that individual interpretation of anxiety symptoms is important for understanding the anxiety – performance relationship.

JONES (1995) MODEL OF FACILITATIVE AND DEBILITATIVE ANXIETY



ANXIETY RESEARCH

- ✘ Prior to research papers primarily conducted by Jones, Hardy, Swain and Hanton in the early to mid 90's – Researchers were focusing on the relationship between anxiety *intensity* and sporting performance.
- ✘ However, these authors led to a school of thought that it is the *direction* of the anxiety that is a bigger predictor in sporting performance.

ANXIETY DIRECTION AND INTENSITY

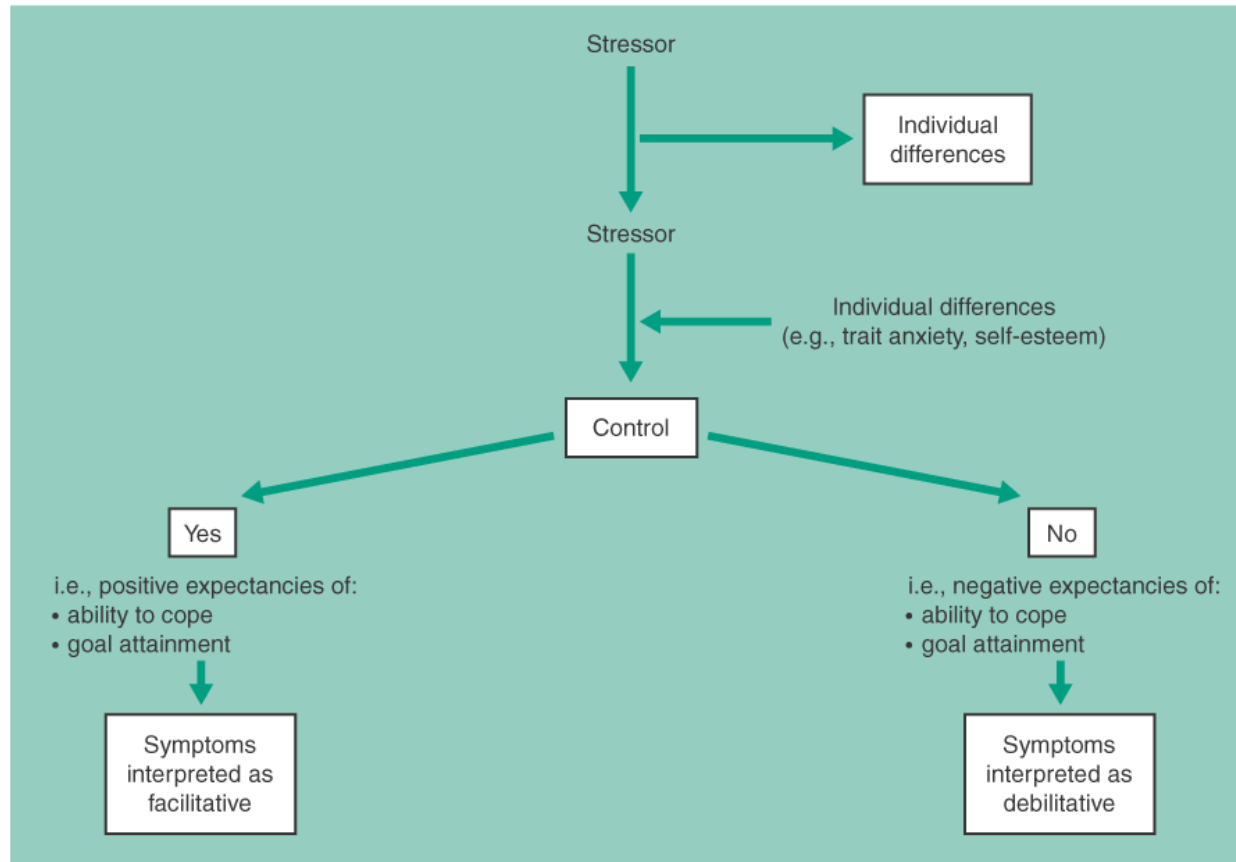
- ✘ An individual's interpretation of anxiety symptoms is important for understanding the anxiety–performance relationship.
- ✘ To understand the anxiety–performance relationship, we must consider both the intensity (how much anxiety one feels) and the direction (a person's interpretation of anxiety 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.
- ✘ Developing cognitive skills and strategies helps people view anxiety as facilitative.

JONES (1995) MODEL OF FACILITATIVE AND DEBILITATIVE ANXIETY



EVIDENCE FOR JONES (1995) MODEL.

- ✗ Jones, Swain and Hardy (1993) – Good Balance Beam performances associated with cognitive anxiety being seen as a positive.
- ✗ Elite vs Non Elite Swimmers
 - + Elite = Interpret both cognitive and somatic anxiety as more facilitative and less debilitating and non elite counterparts.
 - ✗ Jones and Swain (1992).

HANTON AND JONES (1999A AND B).

✗ Swimmers – Study 1.

- + 10 Elite Swimmers – viewed anxiety as facilitative.
- + Used Goal Setting and Imagery skills to reduce their anxiety.

✗ Swimmers – Study 2.

- + 3 Swimmers – viewed anxiety as debilitating.
- + The researchers applied the strategies the swimmers in study 1 were ALREADY using.
- + Results = Change of Anxiety interpretation AND Increase in performance levels.

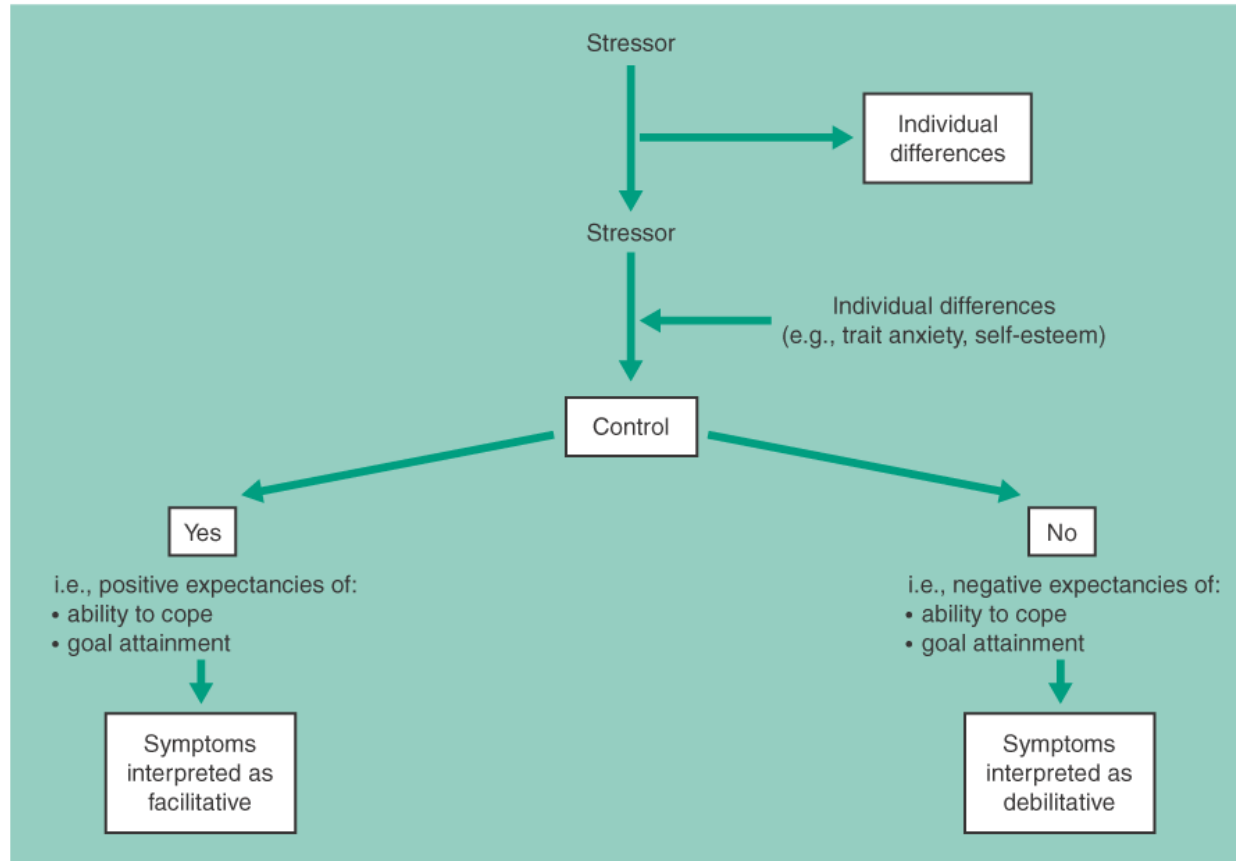
So

✕ Can Anxiety be a positive?

HOWEVER

- ✘ *Anxiety* is a **negative** emotional state with feelings of worry, nervousness, and apprehension associated with activation or arousal of the body.
- ✘ So when the athletes perceive these symptoms as positive, are they experiencing anxiety?
- ✘ Even Hanton and Jones have stated that there is a difference between perceiving the symptoms of anxiety as positive and “positive anxiety”.

JONES (1995) MODEL OF FACILITATIVE AND DEBILITATIVE ANXIETY



SIGNIFICANCE OF ALL THE AROUSAL-PERFORMANCE VIEWS

- Arousal and state anxiety do not always have a negative effect on performance—the **symptoms** 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 the optimal levels of physiological activation and arousal-related thoughts (worry) are not the same.

SIGNIFICANCE OF ALL THE AROUSAL-PERFORMANCE VIEWS

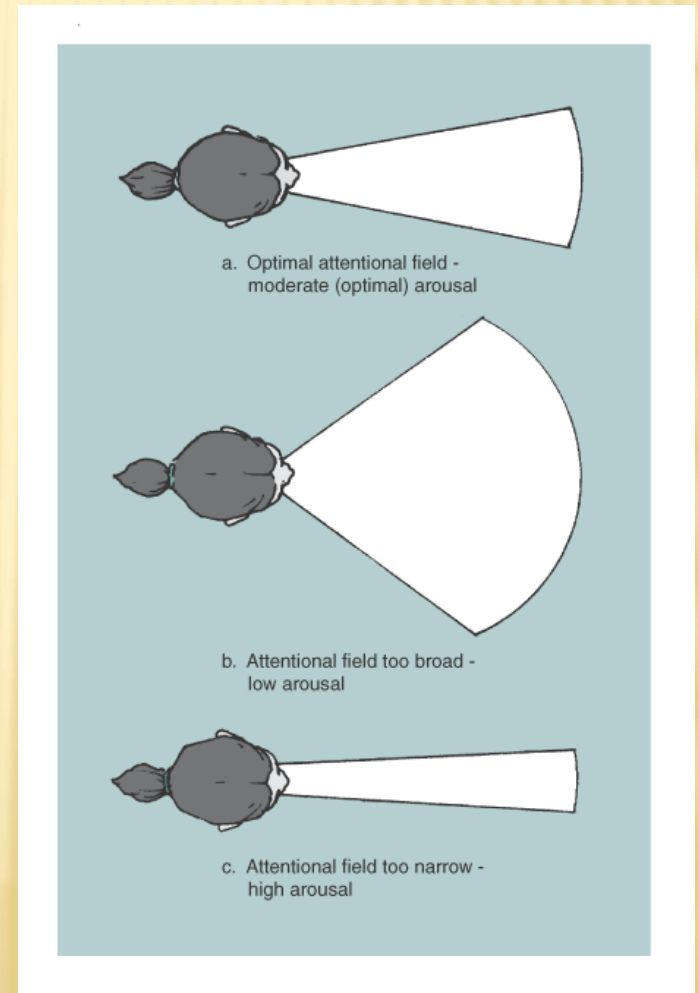
- Interaction of physiological activation and arousal interpretation is more important than actual levels of each.
- It is doubtful that the optimal level of arousal is always at the midpoint of the arousal scale.
- “Psyching-up” strategies should be employed with caution because it is difficult to recover from a catastrophe.
- Athletes should have well-practiced self-talk, imagery, and goal-setting skills for coping with anxiety.

WHY AROUSAL INFLUENCES PERFORMANCE

- Increased muscle tension and coordination difficulties
- Attention and concentration changes
 - ✗ Narrowing of attention
 - ✗ Shift to dominant style
 - ✗ Attending to inappropriate cues
 - ✗ Performance worries and situation-irrelevant thoughts

WHY AROUSAL INFLUENCES PERFORMANCE

- ✗ Attentional narrowing
- ✗ *Remember week 1's lecture and the work of Nideffer.*

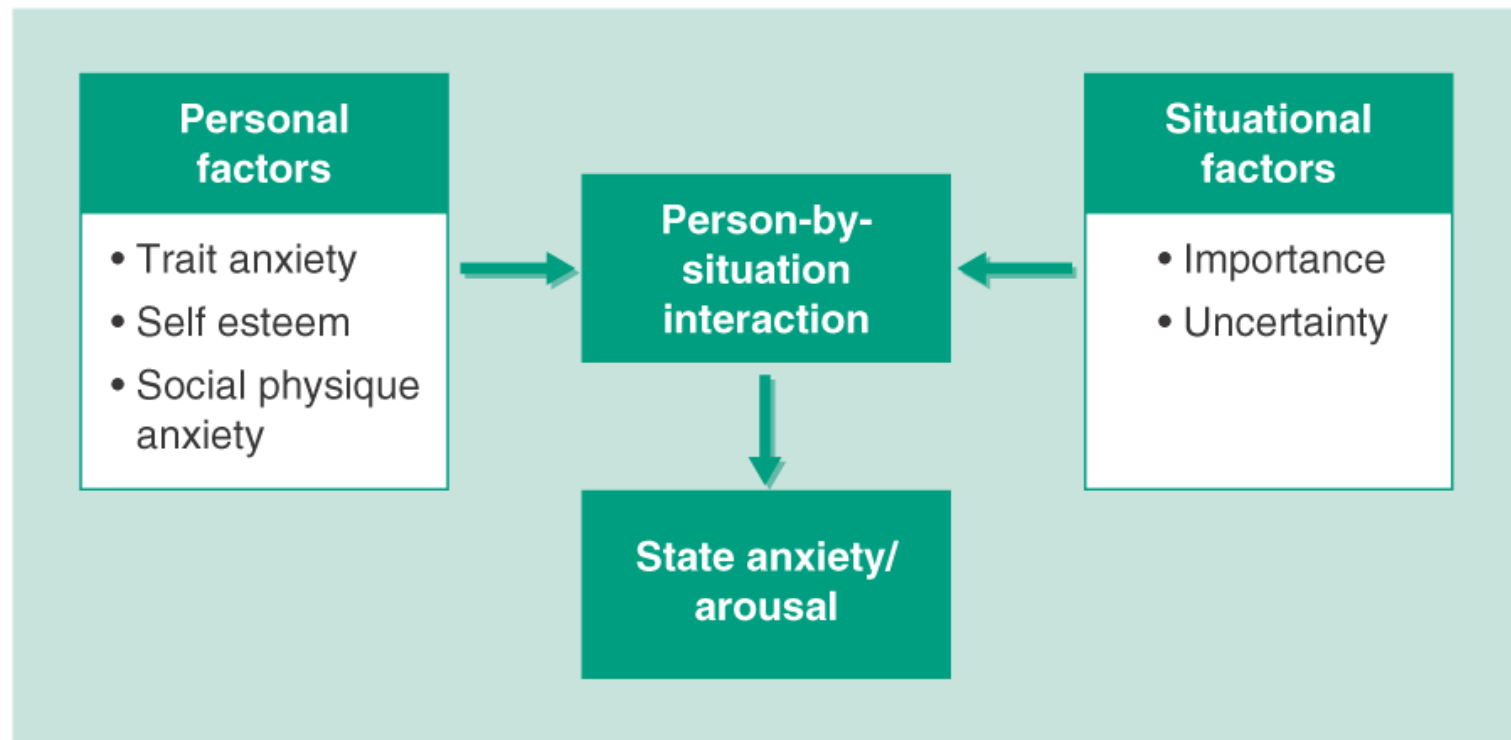


IMPLICATIONS FOR PRACTICE

- ✖ Identify optimal combinations of arousal-related emotions needed for best performance.
- ✖ Recognize how personal and situational factors interact to influence arousal, anxiety, and performance.

IMPLICATIONS FOR PRACTICE

✗ Interactional Model of Anxiety



IMPLICATIONS FOR PRACTICE

- Recognize arousal and state anxiety signs.
- Tailor coaching strategies to individuals:
- ✗ Different strokes for different folks.
- ✗ Sometimes arousal and state anxiety must be reduced, other times maintained, and other times facilitated.
- Develop performers' confidence and perceptions of control.

PERSONAL AND SITUATIONAL FACTORS THOUGHT TO INFLUENCE ANXIETY.

- ✗ Situational Factors....

- ✗ Location of event?

- ✗ Hostile environment of away fixture.

- ✗ Largely hypothesised to have an impact on individuals anxiety levels.

- + However, several studies (such as Bray and Martin, 2003) have found no significant relationship.

BURKE ET AL (2000)

- ✗ Situational factors.....
- ✗ Timing....
- ✗ Burke et al (2000) measured 25 Basketball officials feelings of state anxiety (cognitive and somatic) at 3 different periods.
 - + 30 minutes before a match,
 - + at half time
 - + 15 minutes after match.
- ✗ Findings – Significant higher COGNITIVE anxiety 30 minutes before the match than at half time or after the game.
 - + No significant differences in somatic anxiety at the three times.

FLOWERS AND BROWN (2002)

- ✖ Sporting Context.....
- ✖ 140 division 1 college track and field athletes.
 - + 70 male, 70 female
 - + 60 individual competition athletes, 80 team competition athletes.
- ✖ Findings –
- ✖ Male individual competitors reported greater cognitive anxiety compared to Males participating in team sports (prior to competition).
- ✖ Female individual competitors reported greater somatic anxiety compared to females participating in team sports (prior to competition).

FLOWERS AND BROWN (2002)

- ✗ This study also looked at Birth order and anxiety in sports.
- ✗ 65 first born, 75 non-first born children.
- ✗ First born reported higher cognitive and somatic anxiety than non-first born children.

FLOWERS AND BROWN (2002) – CRITIQUE.

- ✗ Is Track and Field athletics a good example of team competition?
- ✗ Rationale is that they wanted to make the sample as homogenous as possible in terms of athletic ability.
- ✗ Why did they not consider the direction of the feeling of anxiety?