AROUSAL 2 – Types of Arousal

Context: Individual differences

The theories of arousal addressed so far tend to assume that there is such a thing as “general arousal” and that everyone experiences it in the same way. You already know one theory that suggests this isn’t true: Hans Eysenck’s personality trait theory (1965). Eysenck suggests that everyone has varying amounts of the Neurotic personality trait. High-N individuals cope with arousal badly (low optimal level) while low-N individuals do not easily become over-aroused (high optimal level).

Cognitive psychology also started to question the simplistic idea of “general arousal”. When we are aware of getting aroused (heart beat, sweaty palms, difficulty breathing, butterflies in the stomach) we have a cognitive reaction to these sensations – maybe we decide they are exciting and fun or else frightening and nauseous. Not everyone perceives arousal in quite the same way.

Lacey (1967) – Response patterning

Husband-and-wife team John & Bea Lacey studied arousal (then termed “activation”) throughout the ‘60s. They carried out hundreds of tests on volunteers, measuring heart rate, skin conductivity and brain voltage, while giving the participant different challenges, including cognitive challenges (like puzzles) and physical challenges (tests of strength or agility). The Laceys expected to find that people belonged to different “types” who experienced arousal differently. This turned out to be somewhat true – some people became aroused quickly, other slowly; some experienced raised heart rate, others increased brain activity. However, they also found that it mattered how the arousal was stimulated – the sort of challenge that was given and the situation the participant was put in. Some participants would respond to a cognitive puzzle with rising heart rate, others with increasing brain activity.

John Lacey presented his findings at a conference in Toronto organized by the US Office of Naval Research (the same people who commissioned Zimbardo’s Prison Simulation). Lacey argued that arousal is not a simple response to all situations, the way Cannon’s “Fight-or-Flight” response suggests. He identified three types of arousal:

- **Autonomic arousal**: this is a biological response triggered by the nervous system, including raised heart rate, pupil dilation, changes in breathing, etc (the sympathetic response)
- **Electrocortical arousal**: this is a change in brain functioning, with brain waves changing frequency, speeding up or slowing down (probably linked to Eysenck’s Reticular Activating System)
- **Behavioural arousal**: this is a change in observable behaviour, including restlessness, fidgeting, trembling or tension

Lacey argued that some types of arousal are separate (“dissociated”), so someone could experience autonomic arousal without showing behavioural arousal. Even with biological processes, a person can experience one arousal-response (eg raised heart rate) without getting the others (eg pupil dilation). Lacey also pointed out that people’s type of arousal can be “individual response stereotypy” (dispositional – a feature of how they personally react to stress) or “situational stereotypy” (situational – affected by the type of challenge or stimulus given to them). Finally, Lacey showed how the brain reacts to signals from autonomic arousal in the body, normally by inhibiting the amount of arousal rather than adding to it. Effectively, the brain is a “calming influence”.

Contribution to sport psychology

John & Bea Lacey were hugely influential biopsychologists who invented new techniques, measuring devices and statistical approaches. For example, they pioneered the measurement of galvanic skin response (GSR). John Lacey’s theories also moved the study of arousal away from a simplistic idea of “general arousal” towards a more sophisticated picture. Modern athletes and coaches will try to identify their own unique Somatic Response Pattern – their own personal way of responding to arousal. They will also take into account what Lacey called “situational stereotypy” – how you own response pattern changes for different types of stimuli, such as physical challenges or tactical problems.

Evaluation

The Laceys carried out lots of experimental research but what is presented here is the outline of John Lacey’s theory of Somatic Response Patterning which was inspired by his experiments.

Lacey’s theory is much less reductionist than what had gone before. He recognised that there was not one simple arousal response, that people got aroused in different ways and that different situations triggered different sorts of arousal. He started to explore how bodily (somatic) arousal influences our thought processes (cognitions) – and in return how our brain can influence our somatic arousal. Sports players often use these insights to calm themselves or excite themselves, using imagery or self-talk.

On the other hand, there’s still a definite Biopsychology bias to Lacey’s ideas. He studied bodies, brains and behaviour, but not actual thoughts, feelings or ideas. He saw arousal as coming from the body, with the brain on the receiving end. Modern psychologists take a more interactionist approach, being aware of how thoughts and imagery sometimes influence the body as much as the body influences our thoughts and feelings.

The Laceys took a strictly scientific approach to the study of arousal – in fact, they had started their careers working within the Psychodynamic perspective but ditched that to focus on Biopsychology. Their research was of immense practical value, since they created new techniques and biological measures – like GSR to measure skin conductivity.

Comprehension

1. What is meant by “somatic response”?
2. Why is the “fight-or-flight” response too simple as a way to view arousal?
3. What is unusual about a Neurotic person’s response to arousal?
4. What is galvanic skin response?
5. Explain the difference between autonomic and electrocortical arousal with a sports example.
6. What does it mean to say that somatic and behavioural arousal are dissociated?
7. Give a sports example of differences in arousal in response to situation stereotypy.
8. Is the idea of Somatic Response Patterns reductionist?

Exam Question

(a) Outline different types of arousal that are relevant to sport psychology. [8 marks]
(b) Evaluate the use of scientific techniques to study arousal. [14 marks]