

Psychology Chapter 10

Experiencing Emotions:

Emotion and mood are two words that are often used interchangeably

Emotions = immediate, specific responses

Moods = diffuse, long lasted emotional states

Emotion: feelings that involve subjective evaluation, psychological processes and cognitive beliefs (also called affect)

3 components...

- 1) Subjective experience: feelings that accompany an emotion
- 2) Physical changes: increase in heart rate, skin temperature, brain activation
- 3) Cognitive appraisals: people's beliefs and understandings about why they feel the way they do

Emotion and Subjective Component:

We know we are experiencing emotions because we feel them (subjective)

Alexithymia: causes people to not experience the subjective components of emotions

- This happens when emotions don't reach the brain or when damage is to the prefrontal cortex

Primary Emotions: are evolutionarily adaptive, shared across cultures, and associated with specific psychical states; they include anger, fear, sadness, disgust, happiness, and possibly surprise and contempt

Secondary Emotions: blends of primary emotions, they include remorse, guilt, submission and anticipation

circumplex model: At the center of the circle, there is an intersection of two core dimensions of affect...

- 1) Valence: indicates how negative or positive emotions are
- 2) Activation: indicates how arousing they are

Arousal: a generic term used to describe physiological activation (such as increased brain activity) or increased autonomic responses (such as increased heart rate, impulse sweating or muscle tension)

David Watson (1999): negative affect and positive affect are independent... we can experience both simultaneously

- Neurochemical evidence is used to support this response
- Happy and positive states are associated with dopamine
- Negative states are associated with an increase of norepinephrine
- Both states can lead to crying due to both positive and negative states
- Crying can relieve stress through activation of the parasympathetic nervous system

Physiological Component:

James-Lange Theory: common sense suggests that emotions lead to physical changes

- A person's interpretation of physical changes in a situation leads that person to feel an emotion... (ex: we are sorry because we cry or angry because we strike instead of crying because we are sorry or striking because we are angry)

- J-L Theory of Emotion supported by Carl Lange: we perceive specific patterns of bodily responses and as a result of that perception we feel emotion
- Different primary emotions produce different patterns of brain activation

Facial Feedback Hypothesis: Silvan Tomkins produced this idea that facial expressions trigger emotions

- Physical changes are basis for emotional states

Cannon-Bard Theory: Walter Cannon noted that the human mind and the human body do not experience emotions at the same speed

- The mind is quick to experience emotions
- The body is slower, taking seconds to respond
- All information from an emotion-producing stimulus is processed in subcortical structures
- Two separate emotions, one physical and one emotional

The Amygdala: James Papez proposed that many subcortical brain regions were involved in emotion

- Limbic System: consists of brain structures that border the cerebral cortex
 - Outside of the limbic system are involved in emotion and that the limbic structures are not central to emotion
 - Limbic system is used mainly in a rough, descriptive way rather than directly linking brain areas to emotional functions

Amygdala: processes the emotional significance of stimuli and generates immediate emotional and behavioral reactions

- This has evolved over many years and has protected animals from danger
- Is a brain structure most important for emotional learning
- Damage to the amygdala show fear when **confronted** with dangerous objects but don't develop conditioned fear responses to **associated** with dangerous objects

Information reaches the amygdala in two different ways...

- 1) **"Quick and dirty":** processes sensory information nearly instantaneously (with the exception of smell, all sensory information travels to the thalamus before going on to other brain structures)
 - Along this path, sensory information travels quickly through the thalamus to the amygdala for priority processing
- 2) **Second pathway:** Is somewhat slower, leads to more deliberate and more thorough evaluations
 - Along this path, sensory material travels from the thalamus to the cortex (the visual cortex or the auditory cortex) where the information is scrutinized in greater depth before it is passed along to the amygdala

Example: fast pathway prepares animals to respond to a threat and the slow pathway confirms the threat

- Emotional events are store in the memory which the amygdala plays a role in doing so

- Emotional events are likely to increase activity in the amygdala which is likely to improve long-term memory
- Amygdala modifies how the hippocampus consolidates memory, especially memory for fearful events (fearful emotions strengthen our memory)

Amygdala plays another role in processing emotions:

- Involved in the perception of social stimuli as we decipher the emotional meanings of other people's facial expressions
- Amygdala is especially sensitive to intensity of fearful faces... oddly, the amygdala reacts more when a person observes a face displaying fear than when a person observes a face displaying anger
- The greater the activity of the amygdala when a person looks at a frightened face is due to the ambiguity of the situation
- Amygdala responds to all emotions, even happiness however fear is the greatest effect
- Can be active with neutral faces however this usually promotes anxiety

Social

- Social impairments result when the amygdala is damaged
- Can mentally process it however their idea of what is trustworthy, for example, can be impaired
- Lack normal mechanisms

The Prefrontal Cortex:

Cerebral asymmetry: founded by Richard Davidson, the right prefrontal cortex is associated with negative affect where the left is associated with positive affect

- People can be dominant in one certain hemisphere however being dominant can lead to bias emotion
- People who move their eyes to the right are left hemisphere dominant while those who move their eyes to the left are right hemisphere dominant
 - Hemisphere dominant is tested by a series of questions about emotional situations
 - Founded: people who are left hemisphere dominant show positive responses to pleasant scenes and those who were right hemisphere dominant showed negative responses to unpleasant scenes
 - Depression shows greater activity in the right frontal lobe because the left lobe doesn't seem to respond normally

Emotions have Cognitive Component:

Two Factor Theory of Emotion: founded by Stanley Schachter and Jerome Singer: a situation evokes a physiological response such as arousal and a cognitive interpretation or an emotional label

- When people experience arousal, they initiate a search for its source
- The search for a cognitive explanation is often quick and straight forward since a person generally recognizes the event that led to their emotional state
- Whatever the person believes caused the emotion will determine how the person labels the emotion