

Negative Emotion

Fear and Anger



A reminder

- Multi-component view of emotion
 - Cognition/ appraisal
 - Physiological/ brain changes
 - Feeling states
 - Behavior
- Fear is a prototypical example because all are clearly understood
 - Unpleasant/ uncertain/ uncontrollable/ externally caused
 - Sympathetic activation
 - Clear feelings of being in danger
 - Flight or freeze behavior/ clear facial display



Component Process Theory

- **Facial Display:** raise eyebrows, eyes widen, mouth opens, contract muscles below lips, pull cheeks down
- Component Process Theory (Scherer, 1992)
 - Explains the possible meaning of each element
- Fear
 - Unexpected event (widened eyes)
 - Displeasure (downturned mouth)
 - Desire to change situation (frown brows)
 - Uncontrollable or low power (open mouth) distinguishes fear from anger



Fear versus anxiety

- What is the difference?
- Fear:
 - Reaction to perceived danger
 - Subsides quickly when threat is gone
- Anxiety
 - More general expectation that 'something will go wrong'
 - Tends to be more enduring



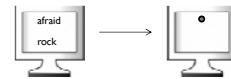
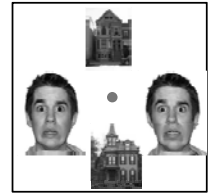
Where does fear come from?

- Inborn
 - fear of sudden, loud noises
 - Startle response/potentiated when we feel more in danger implications for anxious temperament
 - Fear of separation from caregivers
- Learned
 - **Preparedness:** learn some fears more readily than others snakes/ spiders/heights
 - Single trial learning
 - Learn through observation
 - Also learn unique fears based on aversive experiences



Attention

- Fear focuses attention
 - Competing attention tests
 - photos of objects
 - photos of faces (fearful or neutral)
 - say whether they are the same or different
- low anxiety subjects – made few errors
high anxiety subjects – focused in on faces/ more amygdala activity
- 'dot-probe' tests
 - asked if emotion word and dot were in the same or different locations
 - high anxiety subjects – respond more quickly with both in same location



Attention can be preconscious

- Photos of snakes and spiders are flashed quickly on the screen
 - subjects do not consciously see the images
 - half get mild shock after snake photos
 - half get mild shock after spider photos
- Later photos of snakes and spiders are shown consciously
 - HR and breathing increase with photos you were earlier shocked with
- Implications:
 - we learn fears even when not consciously aware of the stimuli



Autonomic Response

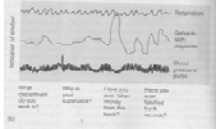
- Fear is one of the best understood emotions
 - why?
- Clear autonomic response –
- An experiment
 - serial subtraction (1,528 minus 7 minus 7)
 - be fast and accurate (threat):
 - see it as a challenge (challenge)
- Sympathetic NS activated in both conditions but more efficient
 - cardiovascular response in the threat condition (faster pumps, more blood per heartbeat & less resistance in the arteries)



Challenge or threat?

More on Lie Detector Tests

- Theory:
 - Fear associated with lying increases sympathetic response
 - Some people react emotionally just to the situation



- One study:
 - Correctly identified 76% of criminals
 - Incorrectly identified 37% of innocent as guilty
- Inconsistency means they aren't allowed as evidence in court cases (American & Europe)
- Ekman finds that many people make a brief, partial shrug (micromovement) when they lie

Two Behavioral Systems in Fear

- Sympathetic arousal (flight)
 - HR increases
 - Blood flow to muscles increases
 - Sweat glands get active
 - Breathing rate increases
- Behavioral Inhibition System (freeze)
 - Decreases HR
 - Increases attention/ inhibits action
 - Parasympathetic response



Amygdala & Fear

- Plays important role in fear response
- Plays a role in fear detection
- Also integral to startle response
- Amygdala damage
 - Poor fear detection in faces
 - Approach dangerous situations
 - (Anti-anxiety meds/ alcohol have similar impact)
- Amygdala over-activation
 - Social phobias
 - Very high reactivity to angry or contemptuous faces
 - (cortisol have a similar impact)



Individual differences

- Infants can be assessed at 6 months for signs of fearful temperament
 - predicts outcomes at age 2 and 6
 - more amygdala reaction/ more right brain activity
- Anxiety disorders run in families
 - Serotonin reabsorbing proteins --- differ genetically
 - individual with fewer reabsorbing proteins - learn fears more readily/ more anxious
- Childhood abuse/ neglect predicts adulthood anxiety
- Females report more anxiety than males. Greater startle reaction
 - no greater social anxiety or claustrophobia

Interesting...

- Two groups of subjects
 - one:** favor death penalty, support military force, guns
 - show strong startle response in clinical trials
 - slow habituation to triggers (see the world as a dangerous place ??)
 - two:** against death penalty, low military support, control guns
 - Show less startle response in clinical trials
 - Quickly habituate to triggers
- *Our emotional temperament can influence our thinking politically*

Anger

- Coming soon...

Remember this?

- Component Process Theory (Scherer, 1992)
 - Explains the possible meaning of each element
- Anger has 4 components
 - Unexpected event (widened eyes) also present in anger and fear
 - Displeasure (downturned mouth) also present in sadness and disgust
 - Desire to change situation (frown brows) also present in frustration and concentration
 - Sense of resolve or efficacy (tightened lips) also present in pride

