Announcements

- Spring Break Next Week!
- No instructor office today
- Next Aplia due Monday after Spring Break
- Exam review features now functional
Convergent Pain Cells in Spinal Cord

Thalamus

Prefrontal Cortex (Oooowwwww)

Peri-Aquiducta| Grey

Opiate-induced Inhibition (Endorphins)

PAG

Convergent Pain Cells in Spinal Cord

Somatosensory Cortex (OUCH)

Pain-induced Inhibition (Intensity)

Gate-Control Theory of pain control

Review
Eating and Eating Disorders

G. Anorexia

1. Severe end of a continuum of concern about weight and dieting

2. To diagnose, must have all of the following:
   (a) Restriction of food intake leading to significantly low body weight
   (b) Intense fear of gaining weight or becoming fat
   (c) Disturbances in body shape perception, or undue influence of weight on self-evaluation, or lack of insight
Eating and Eating Disorders

G. Anorexia

3. Causes: multiple (biopsychosocial)
   a. Bio:
      1. Genetics
      2. Setpoint
   b. Psycho:
      1. Low self-evaluations
      2. Perfectionistic
      3. Family focus on appearance and weight
   c. Social
      1. Not seen in cultures where larger is desirable
Figure 8.5
Female’s Ratings of Body Size

Female’s ideal
Female’s attractive
Male’s attractive
Female’s current
Figure 8.5
Male's Ratings of Body Size

Female's attractive
Male's attractive
Male's current
Male's ideal

Based on Hare, McPherson, & Forth, 1988.
Fig. 3. Body mass indices of Canadian and American women aged 18–24 and Miss America Pageant winners. *Health survey data points are means.
Eating and Eating Disorders

Bulimia

(1) Recurrent binging and lack of control during the episode

(2) Recurrent inappropriate compensatory behavior (purging, vomiting, laxatives, medications, fasting, excessive exercise)

(3) Binges and compensatory behaviors occur on average at once per week for at least 3 months

(4) Self-evaluation unduly influenced by body weight and shape
Epidemiology of Eating Disorders

- **Women: Lifetime Prevalence of Eating Disorders**
  - Anorexia: 0.5 to 3.7 % of US
  - Bulimia: 1.1 to 4.2 % of US

- **Mortality** (Crow et al., *Am J Psychiatry*, 2009)
  - 4% for Anorexia
  - 3.9% for Bulimia

Rates may be conservative
Test your knowledge...
Emotion
I. Mood vs. Affect/emotion

A. Mood: enduring disposition
B. Affect/emotion: transient, reaction to stimuli.
Check your Experience of Emotion
B. Affect/emotion

Components:

1. Subjective experience
2. Internal physiological responses
3. Belief or cognitive appraisal
   a. Is emotion possible in absence of cognition?
   b. Animals' emotion
   c. Human emotion
      1. Cognitive corrigibility
      2. Cognitive incorrigibility
4. Facial Expression
The Muscles of the Human Face. Figure 11.2
B. Affect/emotion

Components:

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   a. Is emotion possible in absence of cognition?
   b. Animals' emotion
   c. Human emotion
      1. Cognitive corrigibility
      2. Cognitive incorrigibility
4. Facial Expression
5. Reaction (Behavior)
Key Aspects of Emotional Experience

A. Subjective experience
B. Physiological responses
C. Cognitive appraisal
D. Facial Expression
II. Physiological Arousal

What is the role of physiological arousal in emotion?
Intuitive View

Sight of oncoming car (perception of stimulus)

Fear (emotion)

Pounding heart (arousal)
II. Physiological Arousal

- What is the role of physiological arousal in emotion?
- James (1884) proposed that the perception of physiological changes IS the subjective experience of emotion

I am fearful because I tremble
I am angry because my heart races
Intuitive View

Sight of oncoming car (perception of stimulus)

Fear (emotion)

Pounding heart (arousal)
Sight of oncoming car (perception of stimulus)

James-Lange Theory

Pounding heart (arousal)

Fear (emotion)

Perceived stimulus

Specific physical responses

Subjective feeling
A. William James’ Theory

1. Stimulus situation $\Rightarrow$ Bodily reaction $\Rightarrow$ Subjective emotion

2. Autonomic reactions are key

3. Sometimes called James-Lange theory
B. Cannon (1927)

1. Problems with James' theory:
   a. Emotion possible without visceral feedback
   b. Physiological changes are very similar across different emotions; **non-specificity** of emotion
   c. Physiological reactions are slow but experience of emotion can be very fast
   d. Artificial physiological stimulation does not produce true emotion
Sight of oncoming car (perception of stimulus)

Cannon-Bard Theory

Perceived stimulus

Physical responses

Subjective feeling

Pounding heart (arousal)

Fear (emotion)
B. Cannon (1927)

2. Cannon's theory
   a. Stimulus situation =>
   b. Perception & Subjective interpretation =>
      1. Bodily changes for homeostasis (prepare fight/flight)
      2. Subjective Experience
Key Aspects of Emotional Experience

A. Subjective experience
B. Physiological responses
C. Cognitive appraisal
D. Facial Expression
C. Eckman: facial expressions are key

1. similarity of expression across persons
2. similarity of interpretation, even across cultures
3. distinct pattern of muscular changes for each emotion
Expressed Emotion

- Culturally universal expressions
A. Mad
B. Glad
C. Sad
D. Scared
E. Disgusted
The polite "unfelt" smile

The Duchene smile
Facial feedback hypothesis

1. Definition:
   a) feedback from facial muscles will alter emotional state
   b) also the feedback from other's faces is important (mimicry, contagion)

2. Experiment: Hold Pencil in teeth or make golf tees touch (smile or frown)
Facial Feedback!

- Attaching two golf tees to the face and making their tips touch causes the brow to furrow.
Ekman’s Facial Feedback Theory

Facial expressions have an effect on self-reported anger and happiness.
Facial Feedback and Botox

- Botox group is poorer at identifying emotions of others ... why?
Key Aspects of Emotional Experience

A. Subjective experience
B. Physiological responses
C. Cognitive appraisal
D. Facial Expression
III. Cognition & Emotion

A. Zajonc/LeDoux: emotion is primary
   1. animals experience emotion without any cognitions
   2. persons experience emotions sometimes without knowing why

B. Lazarus/Schacter: cognition precedes
   1. there is always a cognition that associates stimuli with internal states
Short-cut enables instant fear response

Slightly slower interpretation: "This is a snake! Get away."

To pounding heart
III. Cognition & Emotion

- C. Schacter & Singer: **Cognition-Arousal theory**
  1. Emotion is a function of both Arousal and Cognition
  2. Both necessary

\[ E = f(A \times C) \]
Sight of oncoming car (perception of stimulus)

Schachter's Two-Factor Theory

Pounding heart (arousal)

Cognitive label

“I'm afraid”

Fear (emotion)

Perceived stimulus

General arousal

Assessment of surroundings

Subjective feeling
2. Schacter’s infamous Study

a. "Suproxin" given as a drug to "improve vision"

b. While waiting for vision experiment, a “stooge” acted either angry or happy

c. Subjects labeled their emotion as that which the stooge portrayed
Extending Schacter’s Perspective

D. Excitation transfer

1. Arousal from one situation will be interpreted consistent with subsequent cues
2. Shaky bridge experiment
Another example of excitation transfer...

- An arousal response to one event spills over into our response to the next event.

Arousal from a soccer match can fuel anger, which may lead to rioting.
Yet Another example?

Arousal from driving in traffic

Negative Cognitions & Actions
Cognition and Emotion

- Cognition does not always precede emotion

![Graph showing Corrugator EMG to subliminal words](Arndt, Allen, & Greenberg, 2001)
Cognition & Emotion

E. Cognition in depression

1. Distorted cognitions create depression
2. Cognitive distortions (or errors)
   a. Overgeneralization
   b. Selective abstraction
   c. Magnification & Minimization
   d. All or Nothing thinking
3. Changing cognitions changes emotions
4. Sadder but Wiser phenomenon