COLUMBIA UNIVERSITY
IN THE CITY OF NEW YORK

Science of Psychology

PSY W1001 Section 2
MW 8:40-9:55 Fall 2012

Wednesday, October 24

Emotion

Motivation

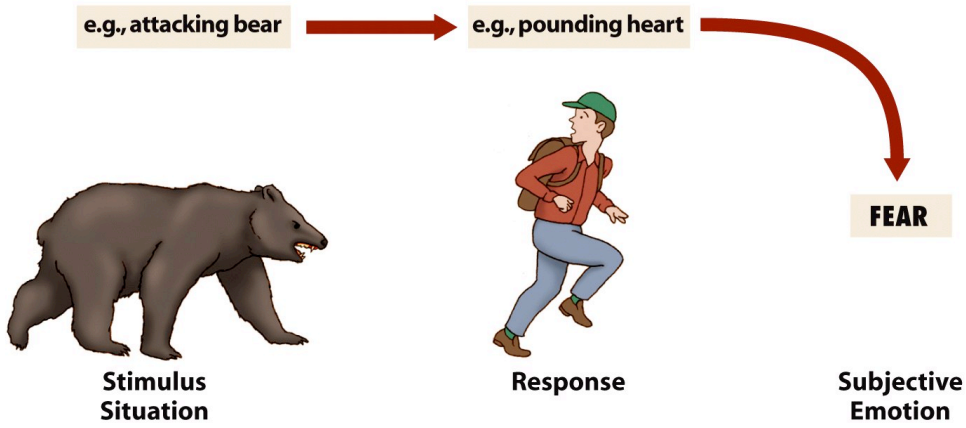
Announcements

- Make-up lecture
  - Friday, 8:30 to 9:40
  - 501 Schermerhorn
  - Audio will be posted
- Pick up your exam today if you haven't already.

- Questions from last lecture?

James-Lange Theory of Emotion

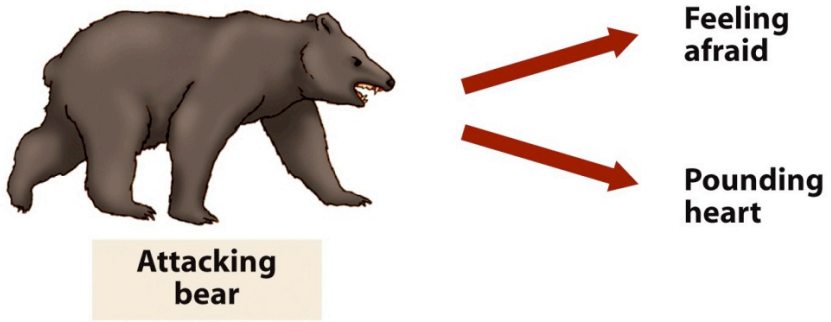
- Posited the reverse:
  - Emotional experiences cause emotional behavior
  - See a bear, run, "feel" our behavior as fear only after we run
  - Support: facial feedback theory
    - The configuration in which we hold our facial muscles influences the emotion we then claim as our experience
      - Smile and you'll feel happy!



"The emotions aren't always immediately subject to reason, but they are always immediately subject to action" William James

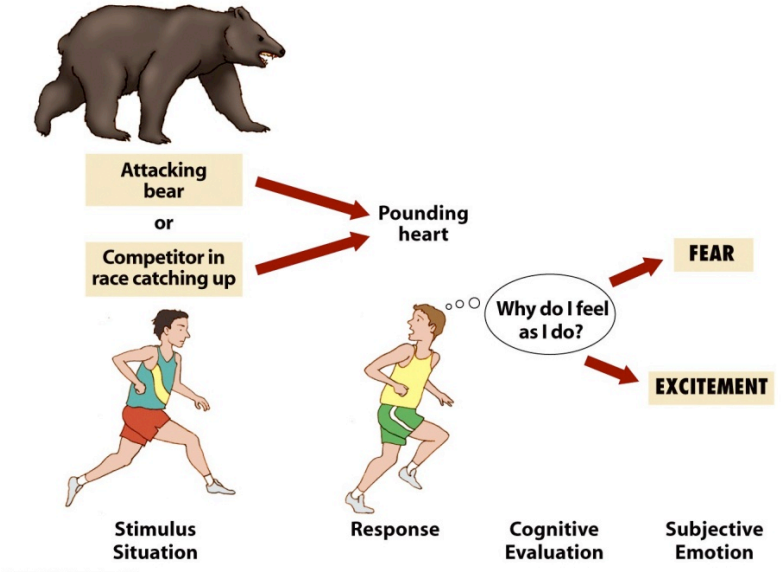
Cannon-Bard Theory of Emotion

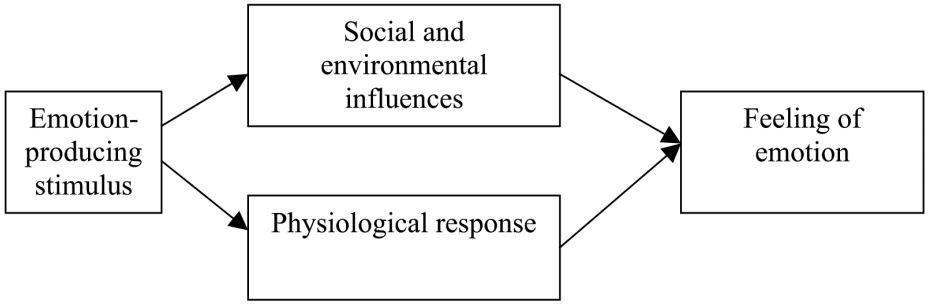
- Critique of James-Lange: our bodily experiences happen too *slowly* to be the source of our emotions
- Cannon-Bard: physiological and experiential responses occur simultaneously
- Both are triggered by changes in brain-state



Two-Factor Theory of Emotion

- Interpretation of changes in physiology are crucial to our labeling and experiences of our emotions
- Takes into account the strong role of cognitive appraisal, context and previous experience in emotional phenomena





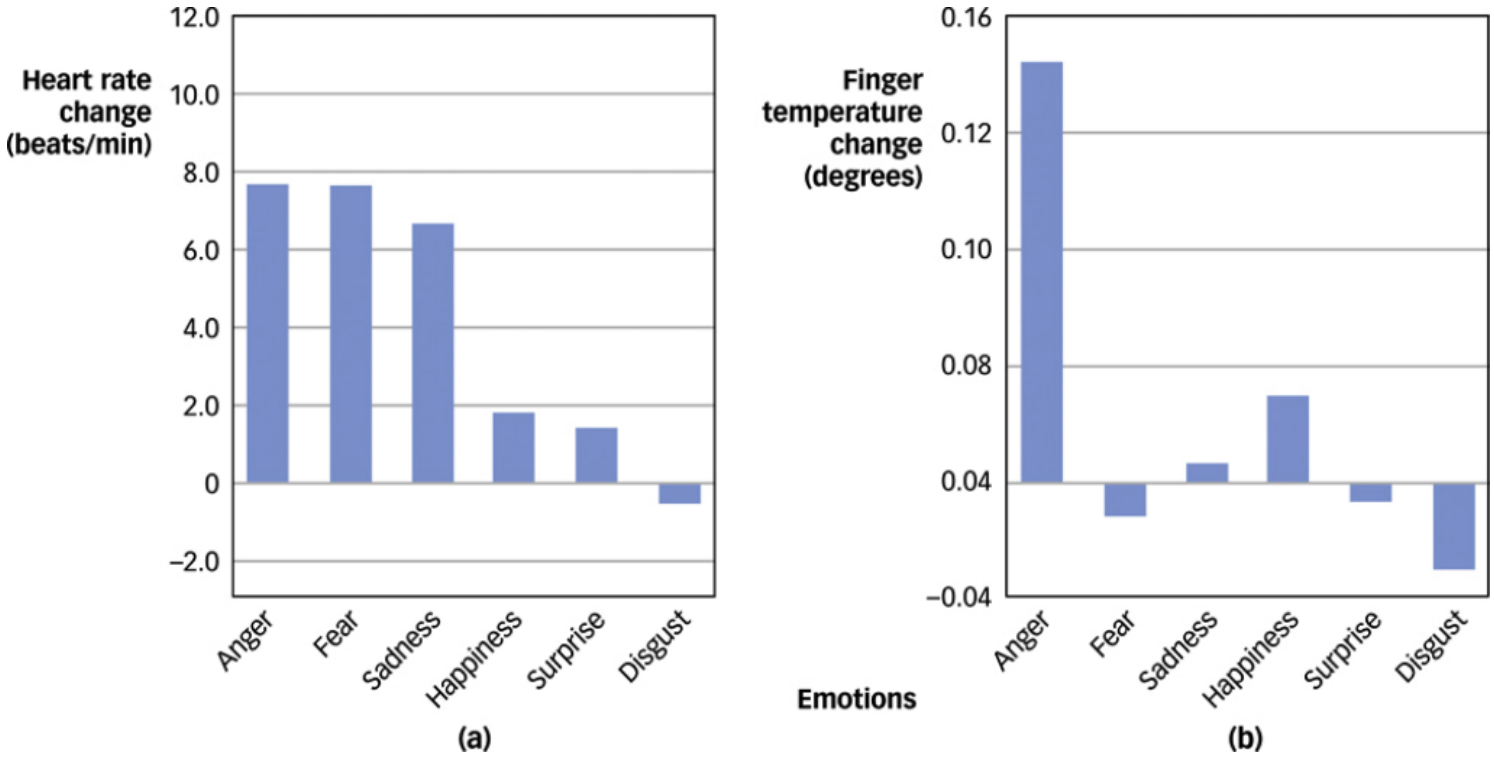
Classic experiment in Two-Factor Theory

- Experimental Design
  - 4 groups
    - Each told they would receive an injection that may have some side effects
    - Two groups told the effects
      - Increased heart rats, etc.
    - Two groups not told the effects
  - Placed in a room to "wait" with another "participant"
    - Other person is a confederate who acts out one of two emotions states – happy or angry
  - Participant asked to fill out questionnaire, including mood (emotional state) questions

	Happy Confederate	Mad Confederate
Told Effects	Mild or no change in emotion	Mild or no change in emotion
Not Told Effects	Report increased happiness	Report increased anger

Physiology of Emotion

- Were James and Lange right?

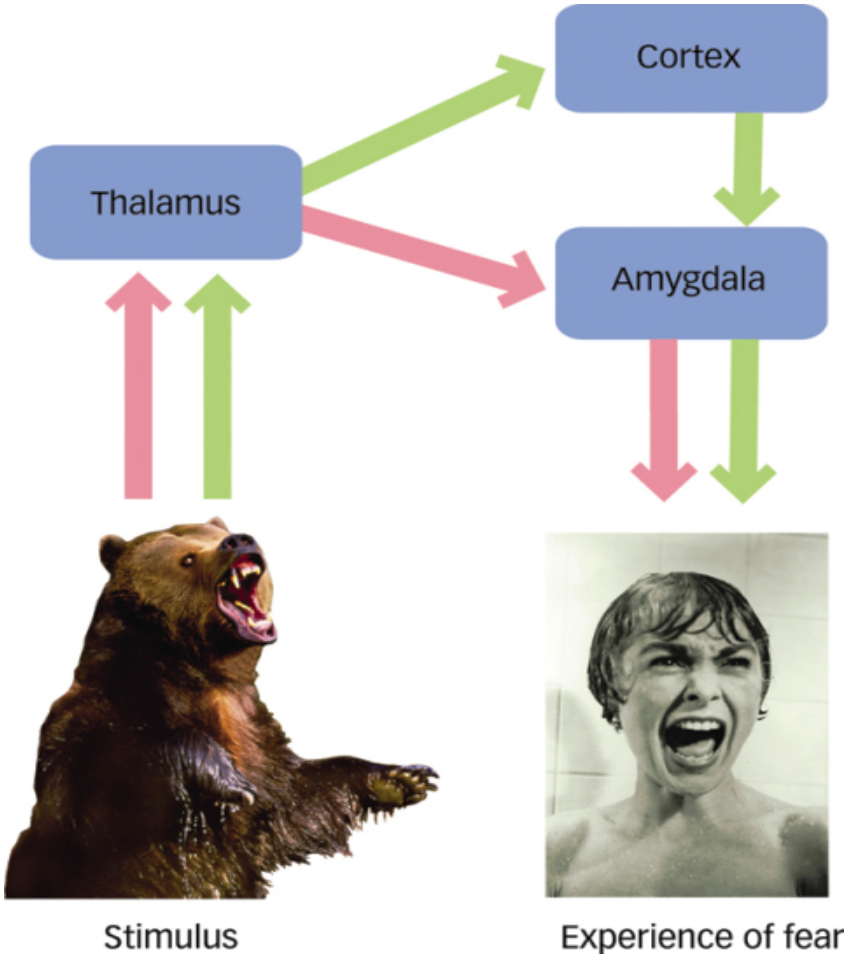


Functions of Emotion

- Help set up the body for reaction to threat/danger: "fight or flight" reaction and the accompanying emotion of *fear*
- Help recover from stress
- Aid in marking important memories
- Signal social intent/connection

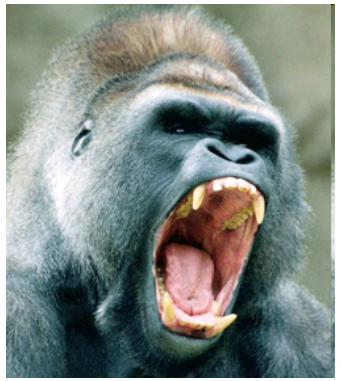
The Emotional Brain

- Amygdala
  - make a rapid appraisal (pink route)
  - why?
- Cortex
  - make a slow, thorough appraisal (green route)
  - why?



Amygdala as "Emotion Area"

- Kluver-Bucy Syndrome
  - Would you steal bananas from this guy?



- Heavily interconnected
    - Many sub-nuclei within amygdala

- Most studies of emotion implicate amygdala

Emotion Regulation

- Two primary forms:
  - Cognitive reappraisal: decrease emotional response by re-interpretation of stimuli
  - Suppression: Decrease in emotional reaction by decreasing strength of facial expression or denying other behavior appropriate to that emotion (e.g., refusing to frown or cry when sad)

"The sign of an intelligent people is their ability to control their emotions by the application of reason" Marya Mannes

Emotion and Attention

- Emotional Pop-out effects
  - Snakes and flowers
    - Only have the pop-out effect with the fearful stimuli
    - Similar effect with faces
- Selective attention
  - Auditory pop-out from emotional word

Emotion and Decision Making

- How can emotions influence decisions?
  - Anticipatory
    - What will I get?
      - How much do I want this thing?
  - Expected
    - What will happen later?
      - Will I be happy or sad if I make that decision?
  - Immediate
    - What do I feel RIGHT NOW?
      - I'm sad, so I don't want to ever come here again.

Somatic Marker Hypothesis

- Damasio
  - Reasoning is guided by emotional evaluation of the consequences of an action
    - Do you go to a party on an icy, stormy night?
      - Weighing the cost of accident against the reward of fun
  - Gut Feelings
    - Memories + situation + emotional response
  - Decisions are based on emotionally marked memories

Emotional Communication

- Emotional expression
  - emotional states influence the way we talk (intonation, inflection, loudness, & duration)
  - listeners can infer a speaker's emotional state with better-than-chance accuracy
  - can also infer emotional states from how someone walks and facial expressions

Communicative Expression

- Deceptive expression
- Display rules
  - intensification
  - deintensification
  - masking
  - neutralizing

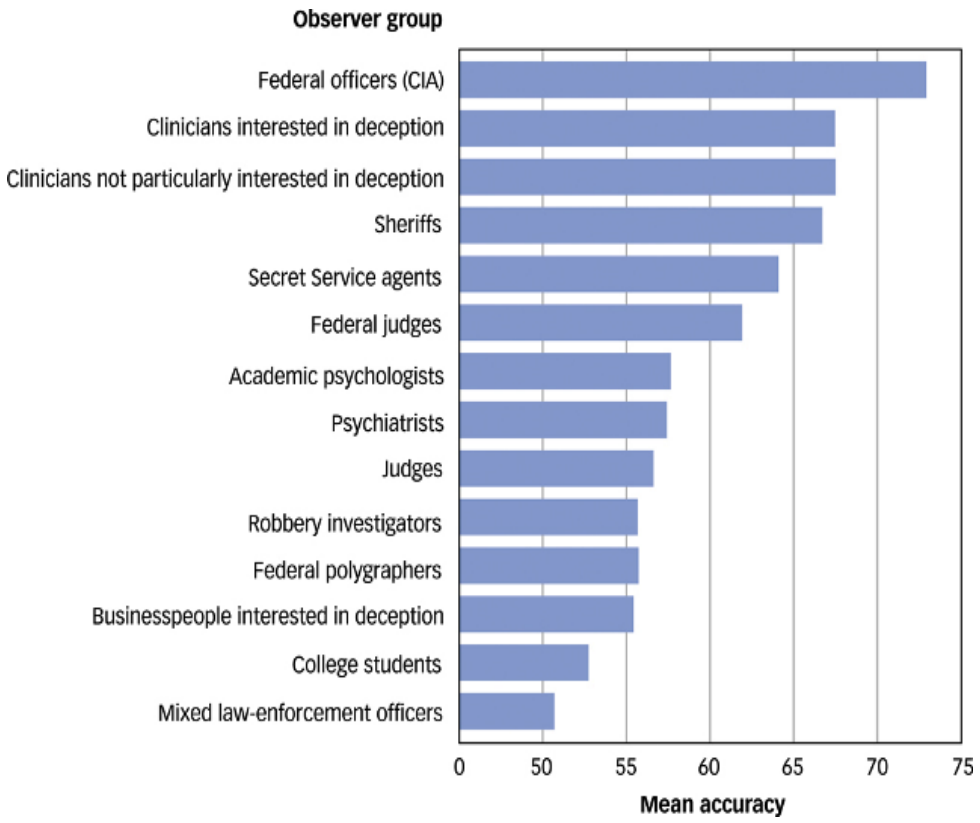
Deceptive Expression

- Cultural Display Rules
  - Sometimes betrayed by incomplete control of facial muscles
- Four sets of features that allow careful observer to tell whether our emotional expression is sincere
  - morphology
  - symmetry
  - duration
  - temporal patterning

Can you spot a liar?

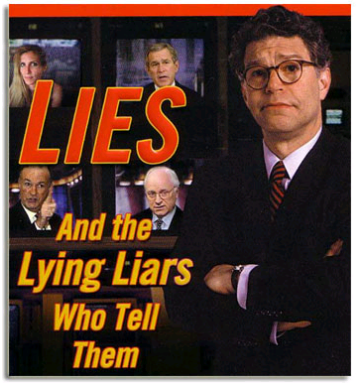
Deceptive Expression

- Humans are generally not that good at detecting when others are lying
- Studies look at accuracy based on profession (100% = perfect accuracy, 50% = guessing)



Deceptive Expression

- Polygraph
  - measures physiological changes associated with stress
  - high false positive rate
- Blood flow in brain
  - some brain areas are more active when people lie than when they tell the truth



Emotion and Memory

- Video

Emotion Study Questions

- Compare and contrast the James-Lange, Cannon-Bard and Two-Factor (Schacter-Singer) theories of emotion.
- Describe (in detail) the classic experiment that supports the two-facto theory of emotion. Be sure to identify the independent and dependent variable(s), hypothesis, operational definitions, and conclusions.
- What evidence supports the James-Lange theory of emotion?
- What are the functions of emotion?
- Describe the main brain areas that have been implicated in emotion. Provide experimental evidence that these areas are important.
- How do we regulate emotions? Describe the 2 primary ways we do this.
- What is an "emotional pop-out"?
- How do emotions play a role in decision making?
- What is the somatic marker hypothesis? How does this hypothesis relate to emotion and decision-making?
- How do we communicate emotions?
- Discuss display rules of emotion. What do we use to judge the sincerity of emotional expression?
- Are we good at detecting false emotion (lying)? Why or why not?
- Do polygraphs work? Explain what is measured and why you would or would not rely on this as evidence of lying.
- What is the role of emotion in memory? Discuss the results of the experiments of McGaugh and Cahill (from the video shown in class) in rats and humans that explore the role of emotion and memory

Motivation Study Questions

**** You must reference your textbook to answer these questions since we did not have time to discuss during lecture**

- What is the hedonic principle?
- What is motivation? Be able to give examples of both biological and psychological motivations.
- Explain intrinsic versus extrinsic motivation. Be able to give examples of each.
- How can threats turn intrinsic motivations into extrinsic motivations? Be able to give an example.
- Maslow's Hierarchy of Needs attempts to organize human urges/needs in a meaningful way. How does this hierarchy explain motivation? (See figure 8.13 on pg 329).
- How does the principle of homeostasis explain motivation? What is a drive? Give an example incorporating these two concepts that would lead to motivated behavior.
- What are orexigenic and anorexigenic signals for eating? What hormones are implicated in each?
- What is the role of the hypothalamus in eating? Describe the role of the two main parts of the hypothalamus and the experiments that lead us to believe this true. Be sure to include orexigenic and anorexigenic signals in your answer.