

Emotion

Lecture 26

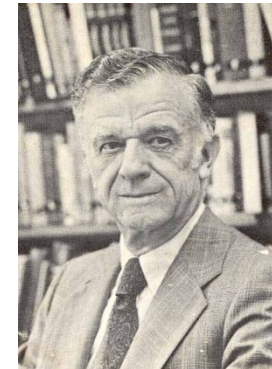
The Trilogy of Mind

Immanuel Kant (1791); Hilgard (1980)

**“There are three
absolutely irreducible
faculties of mind:
knowledge, feeling, and desire.”**



- Cognition
 - Knowledge and Beliefs
- Emotion
 - Affect, Moods, Feelings
- Motivation
 - Drives, Needs, Desires, Goals, Purposes



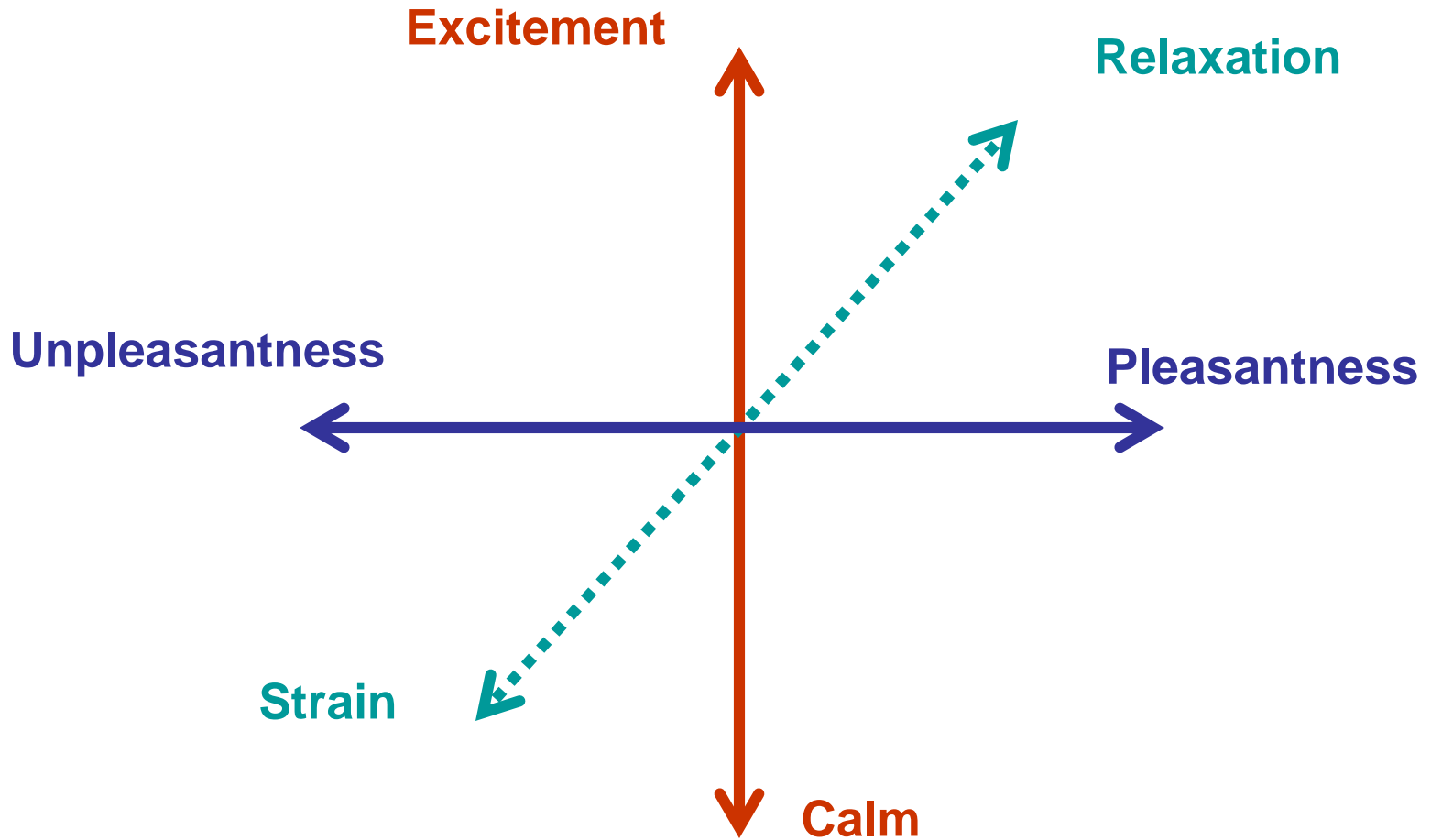
The Domain of Emotion

Niedenthal, Krauth-Gruber, & Ric (2006); Oatley, Keltner, & Jenkins (2006)

- “Brief, adaptive responses, involving physiological and cognitive reactions to objects, people, or situations.” [?]
- An internal mental state consisting of subjective feelings of pleasantness and unpleasantness.
- The Affective Lexicon
 - Feeling
 - Mood
 - Emotion

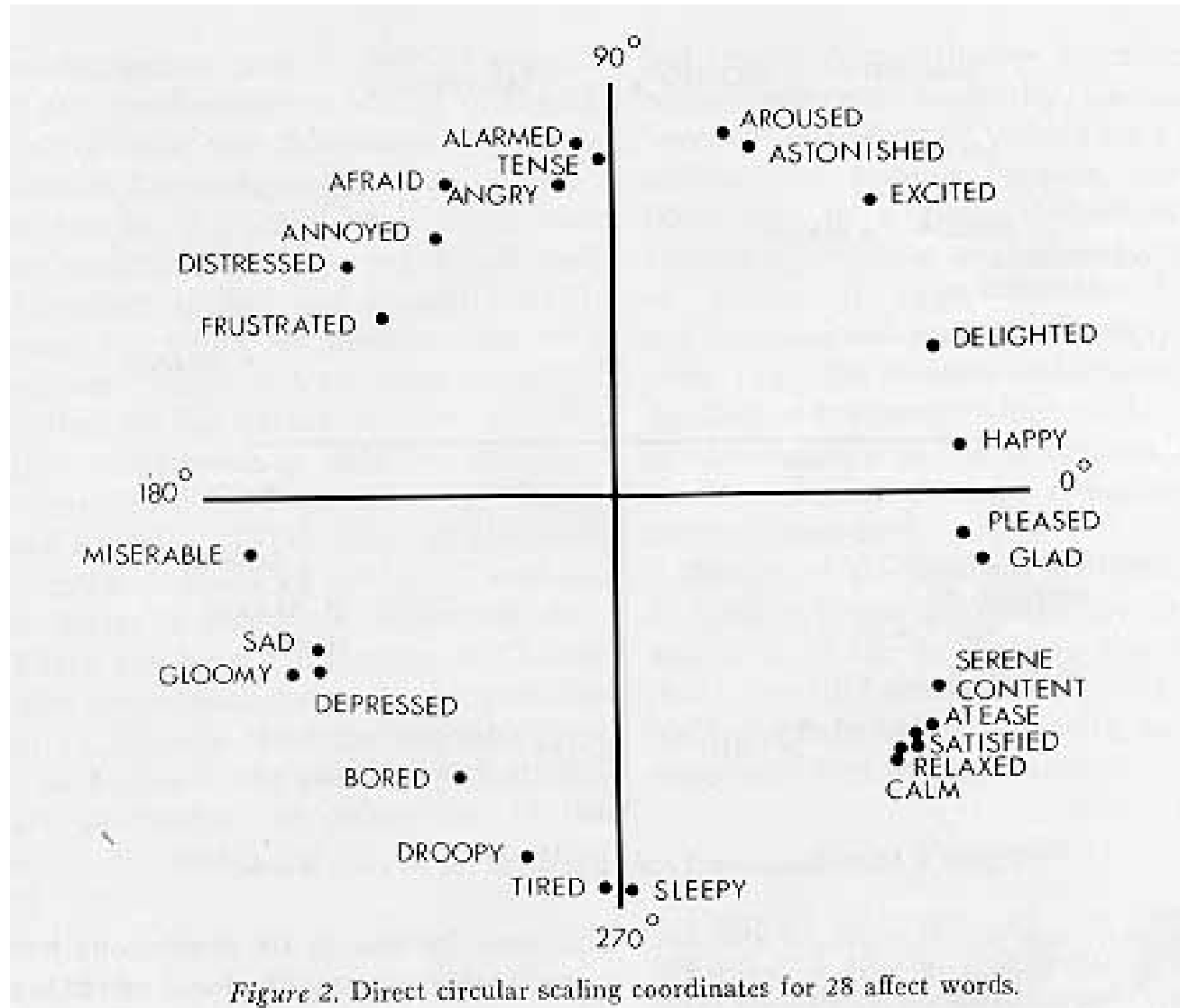
Dimensions of Feeling

Wundt (1899)



The Affect Circumplex

Russell (1980)



The Affect Circumplex

Watson & Tellegen (1985)

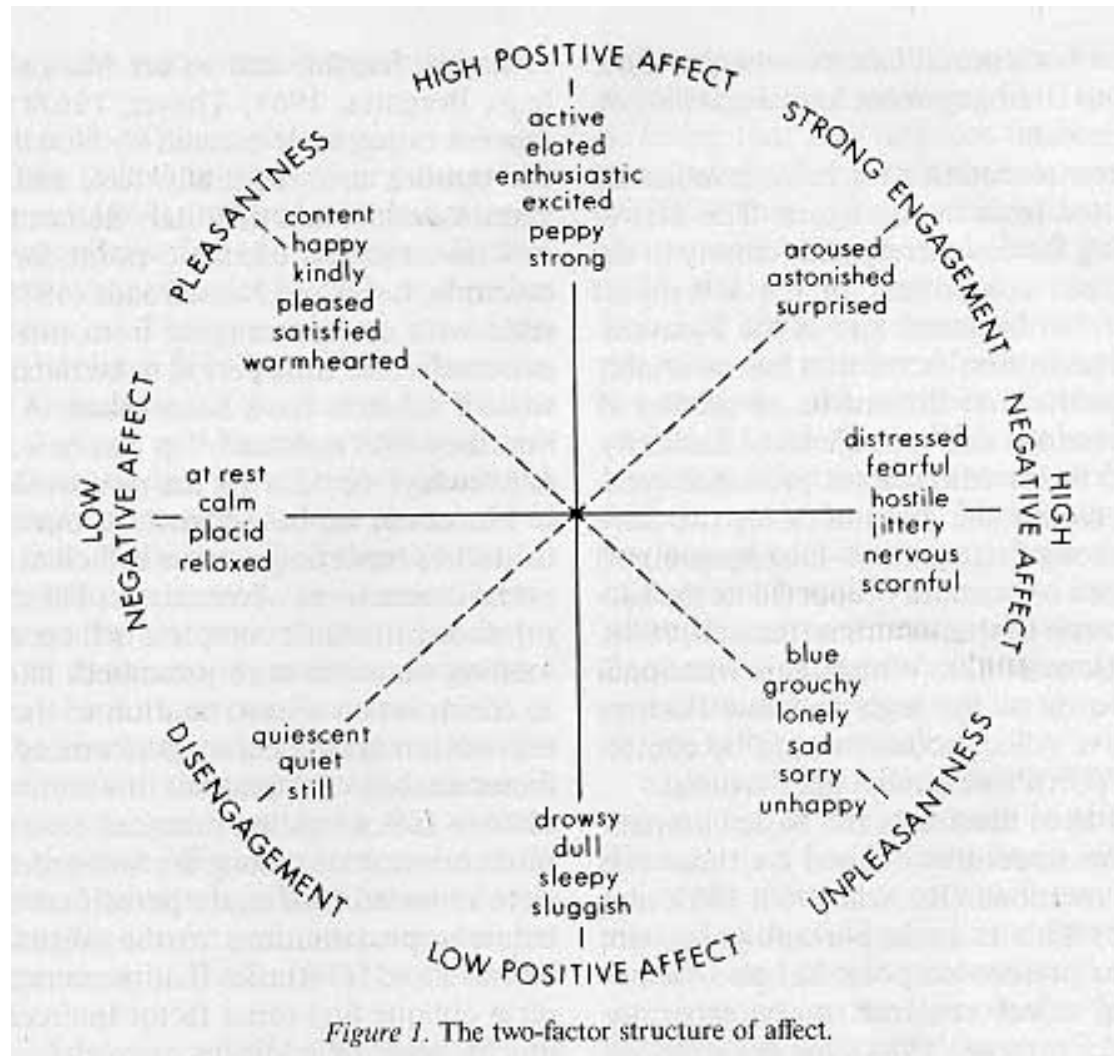
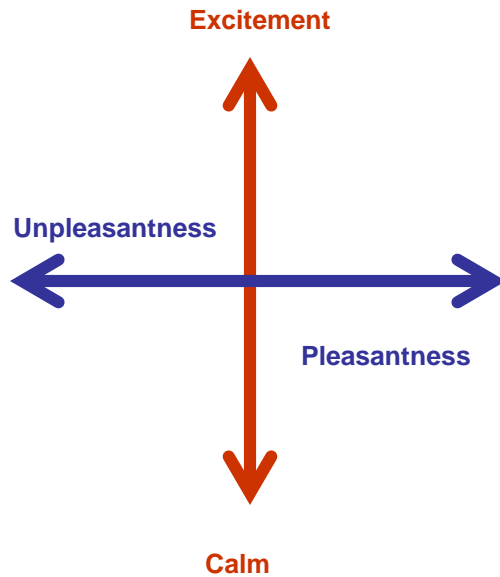


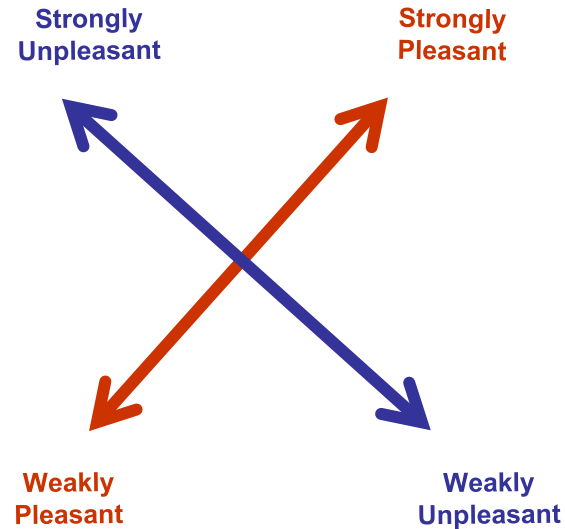
Figure 1. The two-factor structure of affect.

Dimensions of Feeling

Bipolarity vs. Independence



Russell (1980)



Watson & Tellegen (1985)

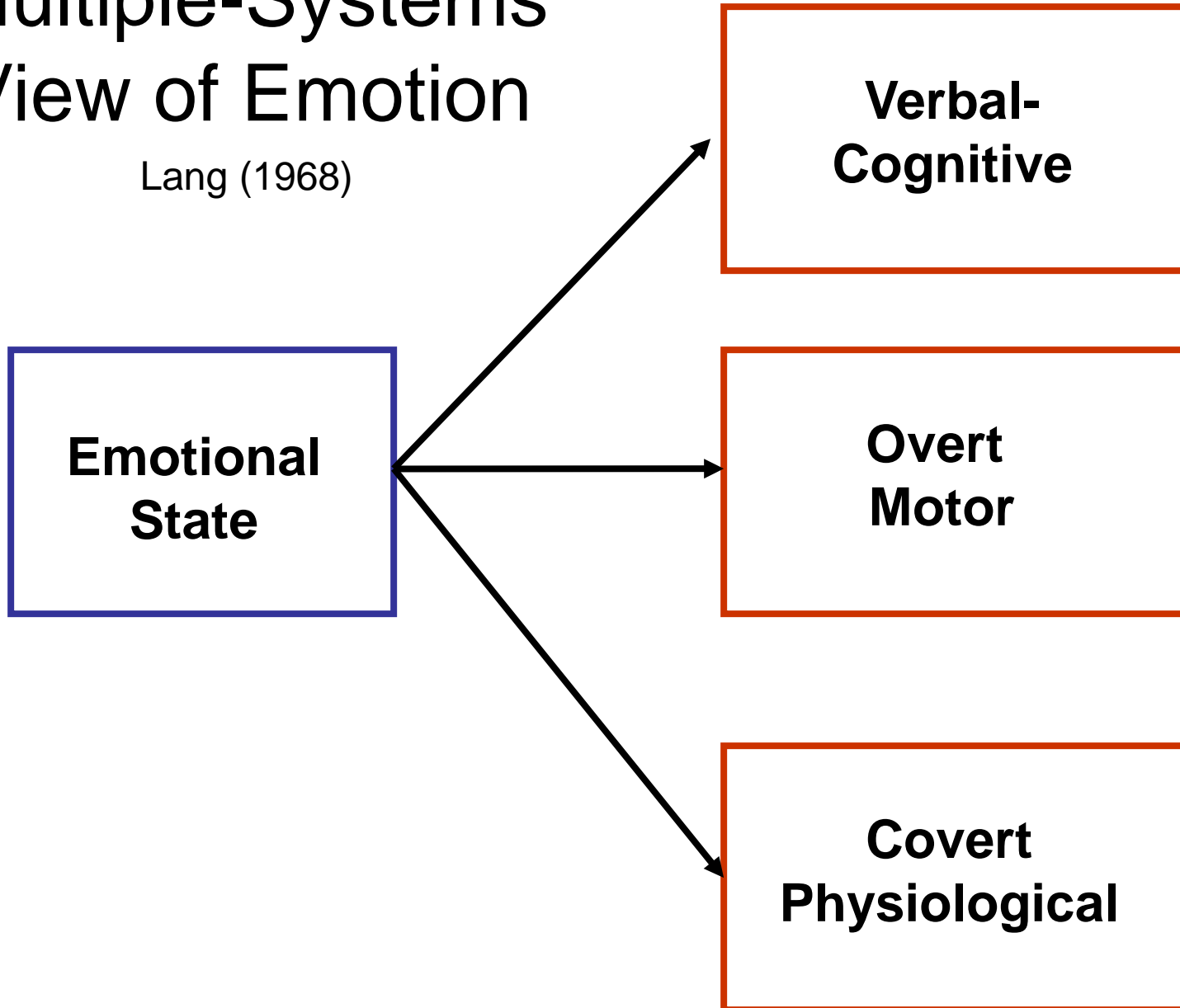
The Language of Emotion

Shaver et al. (1987)

- Love
 - Liking, Passion
- Happiness
 - Joy, Ecstasy
- Anger
 - Frustration, Rage, Resentment, Disgust, Envy
- Sadness
 - Agony, Grief, Disappointment, Guilt, Loneliness, Pity
- Fear
 - Alarm, Fright, Anxiety
- Surprise (A “Pre-Emotion”)

Multiple-Systems View of Emotion

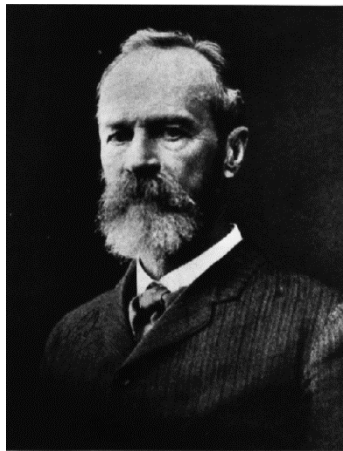
Lang (1968)



The James-Lange Theory of Emotion

James (1884); Lange (1885)

- External Event Elicits Bodily Response
 - James: Whole Body
 - Lange: Visceral
- Perception of Efferent Activity Experienced as Emotion



Critique of the James-Lange Theory

Cannon (1915, 1927, 1929); Bard (1934)

- Emotion is Preserved when Spinal Cord is Severed
- No Differential Pattern of Response
- Nonspecific Perception of Visceral Response
- Autonomic Responses Too Slow
- Manipulation of Autonomic Responses Has No Effect on Emotion



General Arousal Theory

Duffy (1934);

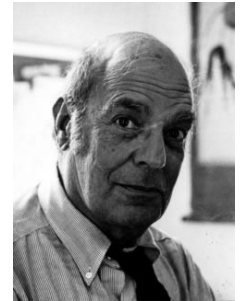
Lindsley (1951); Woodworth & Schlossberg (1958)

- **Physiological Arousal**
 - Single, Undifferentiated State
- **Different Emotions Vary Only in Intensity**

Cognitive-Evaluation Theory of Emotion

Schachter & Singer (1962)

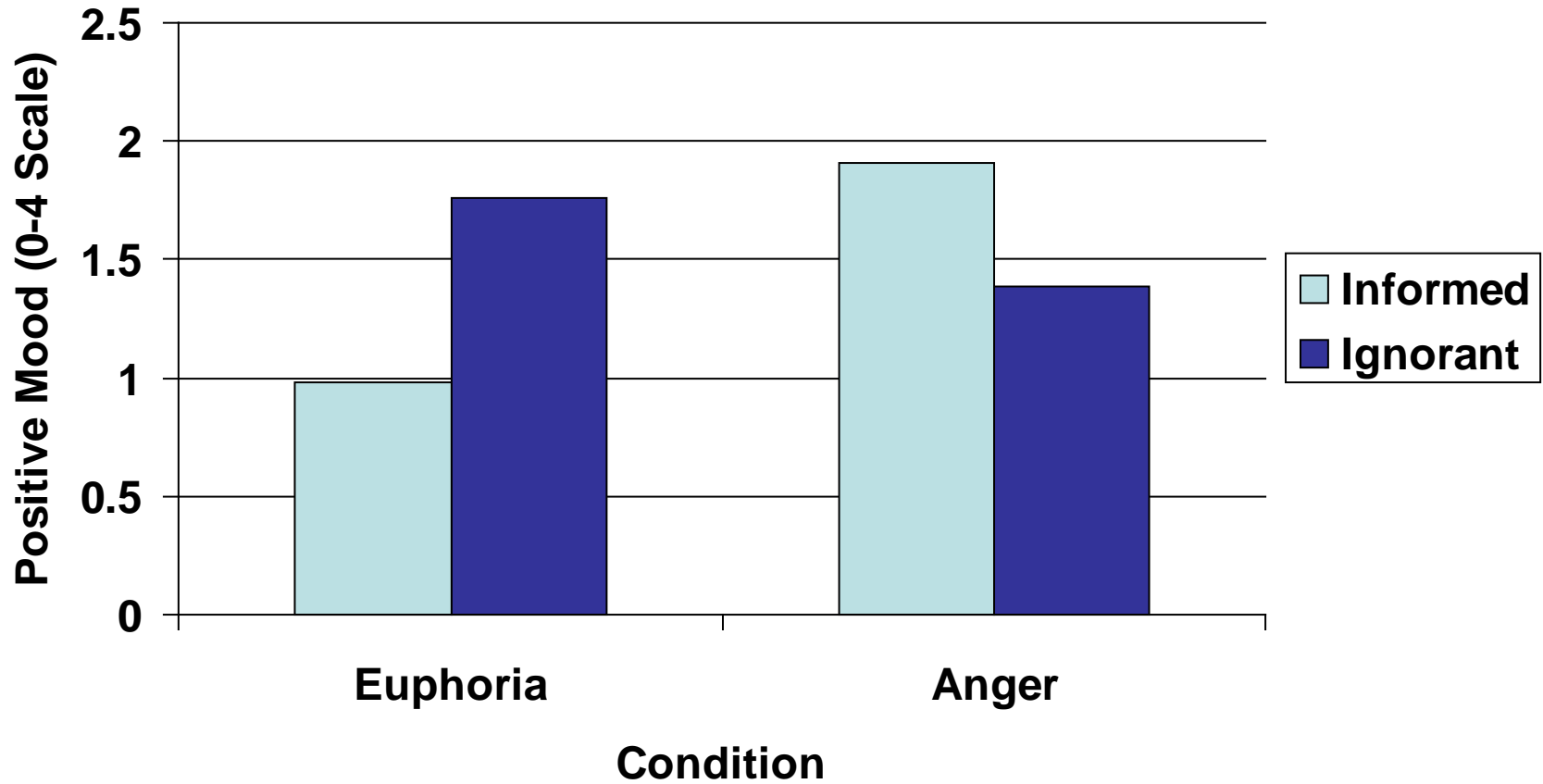
- Events Elicits Emotional Arousal
 - Undifferentiated
 - Unexplained
- Arousal Interpreted by Actor
 - Shaped by Current Situational Context



‘[P]recisely the same state of physiological arousal could be labeled “joy” or “fury” or “jealousy” or any of a great diversity of emotional labels depending on the cognitive aspects of the situation.’

Emotional State

Schachter & Singer (1962)



Cognitive Theory of Arousal

Mandler (1975, 1984)

- Arousal as Response to Discrepancy
 - Expectations
 - Intentions
 - Habits
- Arousal Elicits Attention
- Emotion Determined by Cognitive Evaluation
 - Source of Discrepancy
 - Context of Arousal



Cognitive-Appraisal Theory of Emotion

Smith & Ellsworth (1985), after Lazarus (1968)

- Pleasantness
- Anticipated Effort
- Certainty
- Attentional Activity
- Attributional Activity
 - Situational Control
 - Self-Other



Distinguishing Happiness from Pride

Smith & Ellsworth (1985)

Feature	Happiness	Pride
Pleasantness	Pleasant	Pleasant
Anticipated Effort	Little Effort	Little Effort
Certainty	High Certainty	High Certainty
Attentional Activity	Much Activity	Much Activity
Attributional Activity	Human Control and Personal Responsibility Not Necessary	Human Control Necessary (Self or Other)
Situational Control		
Self-Other		

James-Lange Redux: The Facial-Feedback Hypothesis

Tomkins (1962), after Schlossberg (1952)

- Dimensions of Facial Expression
 - Pleasantness vs. Unpleasantness
 - Rejection vs. Attention
 - Activation vs. Tension Relaxation
- Primary Emotions
 - Innate Neural Programs
 - Automatic Activation → Facial Display
 - Communicates Emotion to Others
 - Feedback Generates Emotional Experience

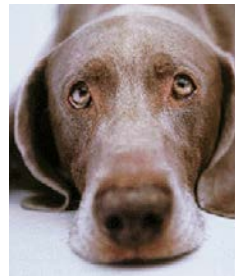
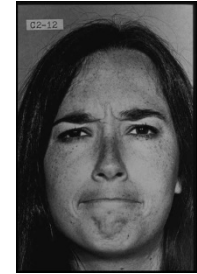
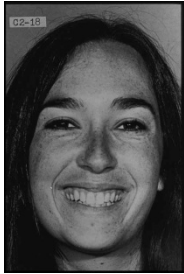


Facial Expressions of Emotion

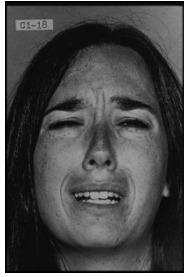
Darwin, *The Expression of the Emotions in Men and Animals* (1872)

Ekman & Friesen (1975)

- Verbal vs. Nonverbal Communication

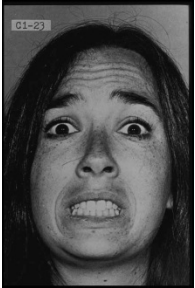
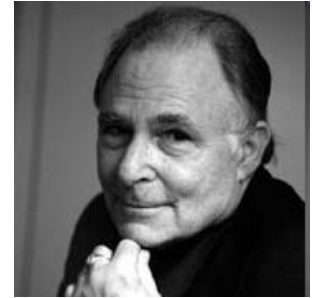


- Expression *Follows* Emotion



Basic Emotions

Ekman & Friesen (1975)



Happiness

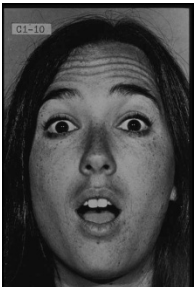
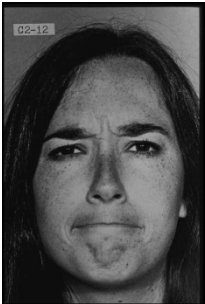
Sadness

Fear

Anger

Surprise

Disgust



- Noncognitive Motor Signs
 - Prewired, Automatic
- Universal
 - Across Cultures
 - Across Species
- Blends of Emotion

Perceptual-Motor Theory of Emotion

Leventhal (1980, 1984, 1990)

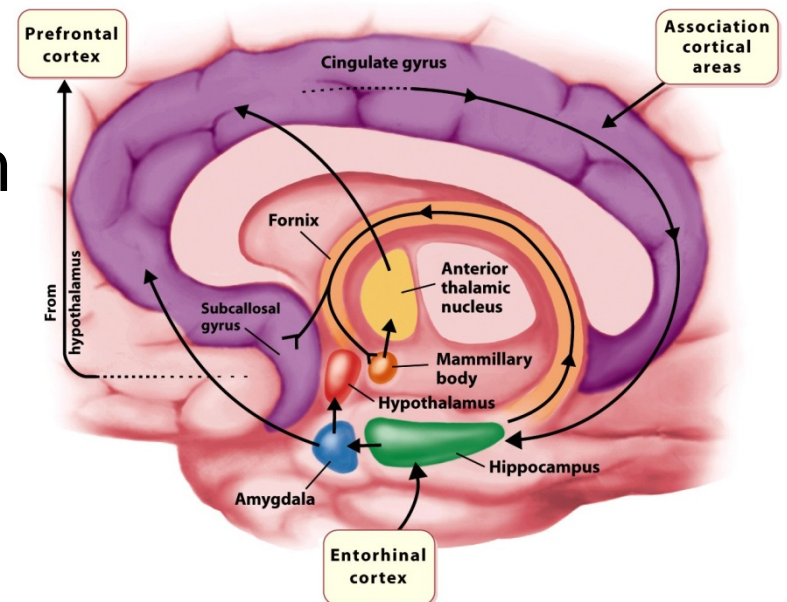
- Expressive-Motor Processing
 - Subjective Feelings
 - Expressive Reactions
- Schematic/Perceptual Memory
 - Records Emotional Episodes
 - Automatic Activation
 - Rapid Evaluation
- Conceptual/Abstract Memory
 - Declarative Knowledge About Emotion
 - Nonverbal Codes for Recognition, Enactment²¹



Hypothalamic Theory of Emotion

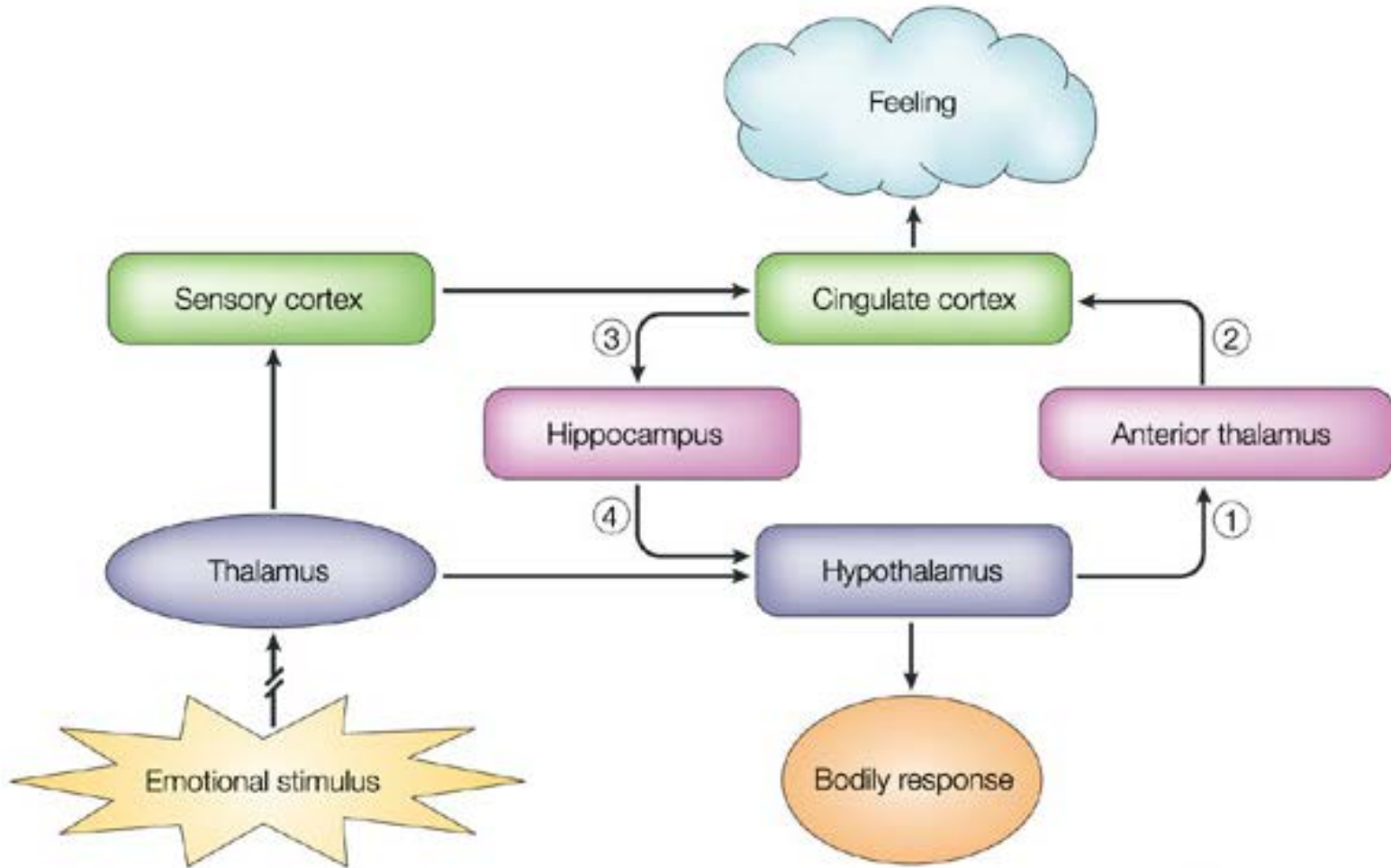
Cannon (1915, 1927, 1929); Bard (1928)

- Emotional State
 - Generated by Hypothalamus
- Emotional Behavior
 - Discharges to Brainstem
- Emotional Experience
 - Discharges to Cortex



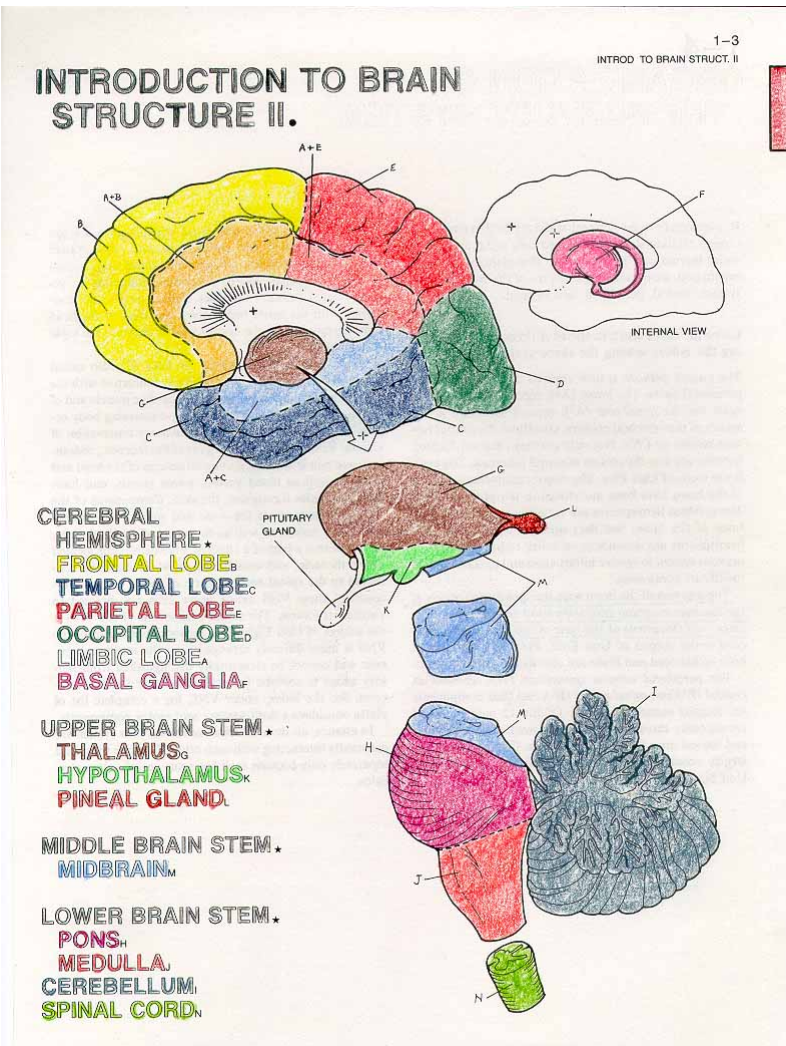
Papez' Circuit

Papez (1937)



The Limbic System and the Visceral Brain

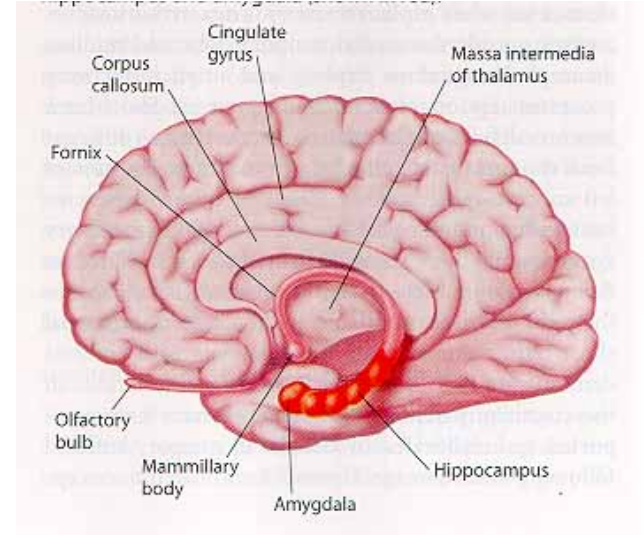
MacLean (1952; 1970, 1990)



- Neocortex
 - “New Brain”
- Limbic System
 - “Old Mammalian” Brain”
 - Amygdala
 - Hypothalamus
 - Hippocampus
- R-Complex
 - “Reptilian Brain”
 - Brain Stem
 - Cerebellum

Brain Systems in Fear

LeDoux (1995)



**Emotional
Event**

Thalamus

Amygdala

Cortex

**Behavioral
Response**

**Physiological
Response**

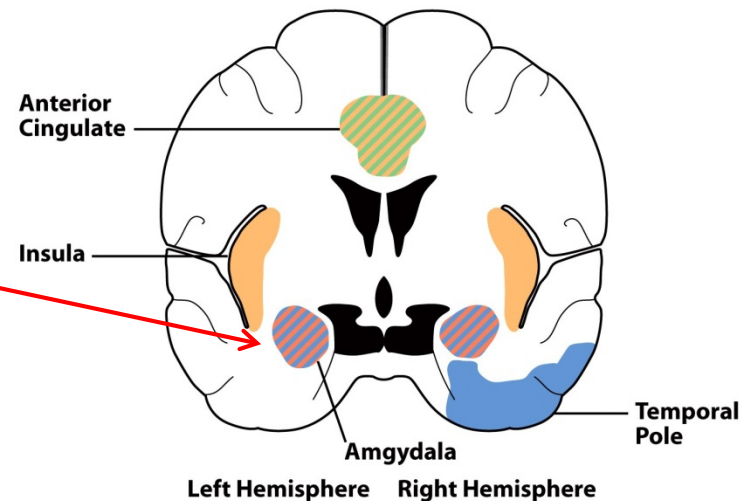
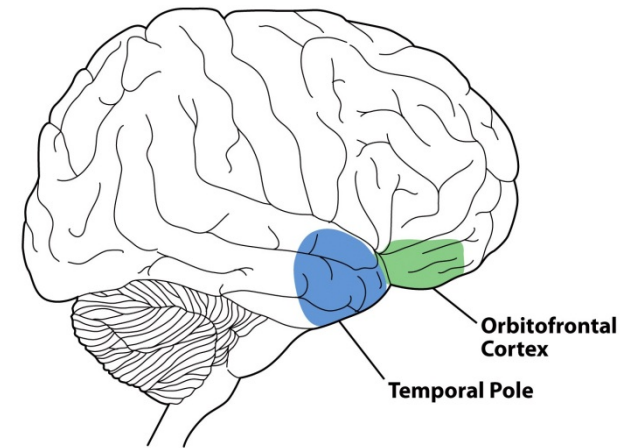
**Subjective
Experience**

The Modularity of Emotion

Affective Neuroscience

Panskepp (1992, 1996, 1998); Davidson & Sutton (1995); Davidson (2000)

- Fear (and Other Negative Affect?)
 - Amygdala
- Emotion Regulation
 - Orbitofrontal Cortex
- Discrepancies
 - Anterior Cingulate Gyrus
- Positive Affect
 - Nucleus Accumbens
- Disgust
 - Insula





The Embodied Mind

Niedenthal (2007); Niedenthal et al. (2005); Proffitt (2006)



- Mind Not Separate from the Body
 - Descartes Was Wrong
 - Mental Architecture Not “Amodal”
- Mental Representations and Processes Are Grounded in their Physical Context
- Embodied Emotion
 - Emotional States Derived from Bodily States
 - Emotional States Expressed in Bodily States

Emotion and Cognition

Eich et al. (2000); Niedenthal & Kitayama (1994)



- Cognition Affects Emotion
 - Self-Regulation of Pain, Anxiety in Surgery
 - “Depressogenic” Schemata in Depression
- Emotion Affects Cognition
 - Perception (“Rose-Colored Glasses”)
 - Memory: Mood-Congruent, Mood-Dependent
 - Judgment
 - Performance
 - Risk-Taking