Motivation and Emotion

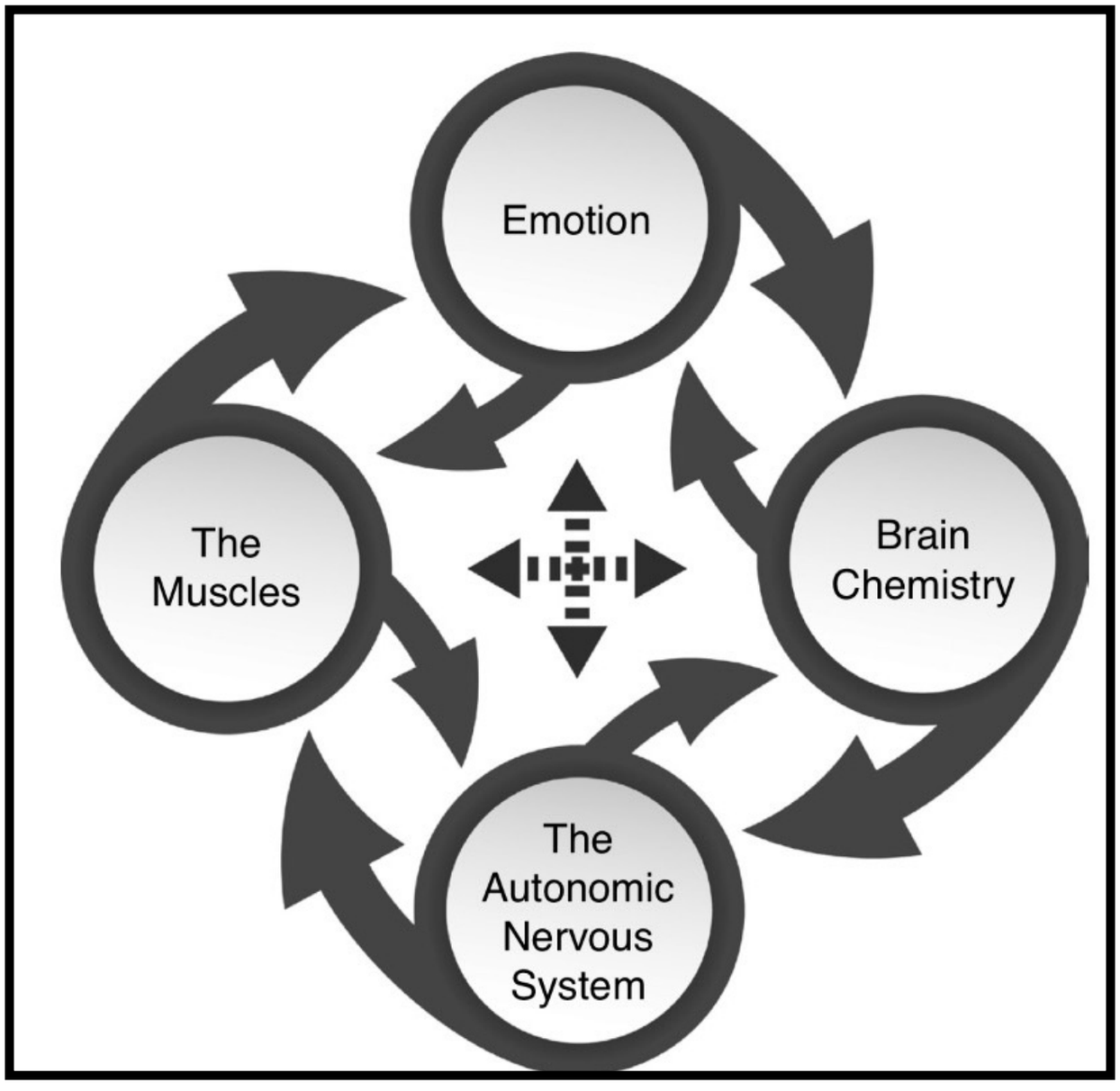
Dr. Rawan Masri

Emotions are defined as : complex reactions that we have and consist of : 1. physiological arousal 2. expressive behaviors and 3. Subjective cognitive state.

Motivation is defined as : an internal guide that serve to activate , guide and maintain our behavior ; how much you want to do something.

Motivation and emotions are closely related.

Physical component of emotion



Physical component of emotion

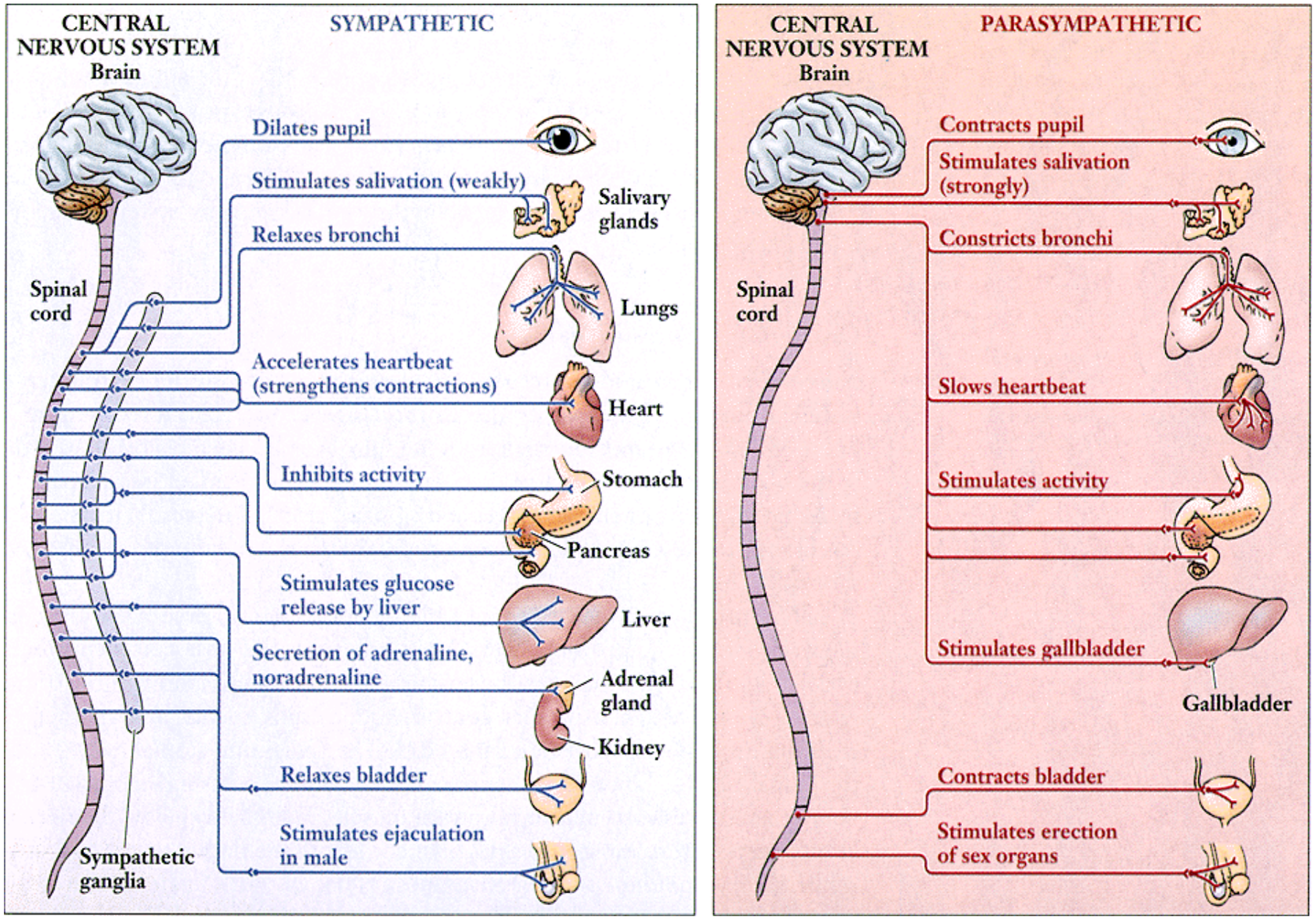
When you feel an emotion, a pattern of brain chemistry follows it. For example, happiness is often accompanied by changes in serotonin, dopamine and even endogenous opiates (the brain's own versions of morphine). If you then feel a different emotion, brain chemistry shifts to a pattern that reflects your new emotion.

Your emotions also affect your muscles. You smile when you feel happy while stress causes your brow to crease and your shoulders to tense. These muscle movements are not conscious choices you make. They are like reflex reactions because your muscles are in communication with emotional centers of your brain.

Physical component of emotion

Emotions also play a role in the autonomic nervous system (ANS). Basically your ANS responds to your emotional state. This is why an emotion is technically smeared all over your body. Your ANS connects your brain to your heart and other organs in your chest, your abdomen and pelvis, and also to your eyes, larynx, and through your blood vessels and sweat glands to your skin.

Via the ANS, your skin actually responds moment-by-moment to the contents of your mind. Let's say you have a stressful or worrisome thought, for instance. Your skin starts to sweat. It's quite obvious when you feel really stressed and your palms become moist. But even a little stressful thought causes micro amounts of sweating. In fact, this is the basis of the polygraph (lie-detector) test. When a person tells a lie and knows it's a lie, the tiny (or large) amount of emotional stress they feel increases sweating. This is detected by sensors that measure the electrical conductance of the skin. When there's sweating, conductance goes up!


CENTRAL NERVOUS SYSTEM
Brain
SYMPATHETIC
Dilates pupil
Stimulates salivation (weakly)
Salivary glands
Relaxes bronchi
Spinal cord
Lungs
Accelerates heartbeat (strengthens contractions)
Heart
Inhibits activity
Stomach
Pancreas
Stimulates glucose release by liver
Liver
Secretion of adrenaline, noradrenaline
Adrenal gland
Kidney
Relaxes bladder
Stimulates ejaculation in male
Sympathetic ganglia
CENTRAL NERVOUS SYSTEM
Brain
PARASYMPATHETIC
Contracts pupil
Stimulates salivation (strongly)
Constricts bronchi
Spinal cord
Slows heartbeat
Stimulates activity
Stimulates gallbladder
Gallbladder
Contracts bladder
Stimulates erection of sex organs

Outward Signs of Emotion

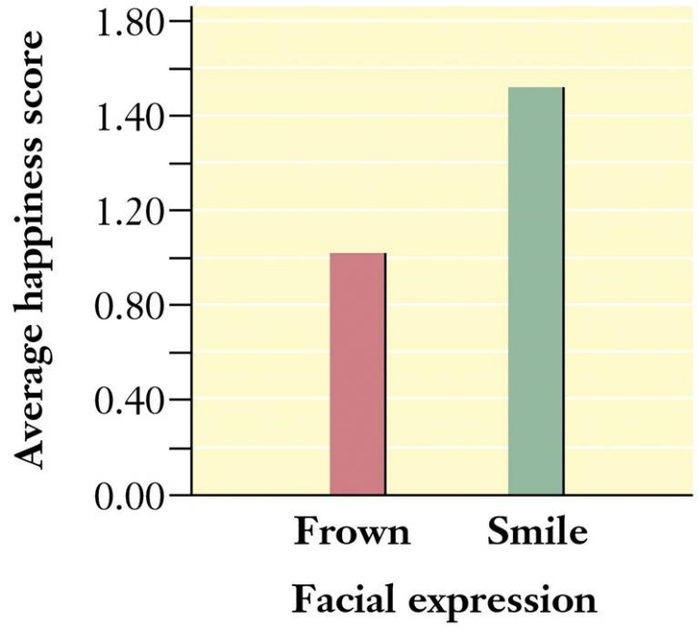
<<Nonverbal Cues : reading into the behavior of others ; what emotions they are experiencing in order to decide how we should respond to them.

1. Facial Expressions : how another person looks facially gives us an understanding of how they are feeling. Facial expressions appear to be universal.

2. Eye Contact : we generally have a negative reaction to people who fail to make eye contact.

3. Body Language: body posture and movements can give us cues to the emotions of others . ex: Thumbs up to indicate "A-OK"

4. Tone of Voice / Rate of Speech<< ex: pitch of voice increases when experienced emotion increases.



Facial-Feedback Hypothesis-states that feedback from facial muscles affects our experienced emotion

Gender Differences

- women report experiencing more emotion than men
- women are more comfortable experiencing emotion than men

Display Rules

They can be described as culturally prescribed rules that people learn early on in their lives by interactions and socializations with other people. They learn these cultural standards at a young age which determine when one would express certain emotions, where and to what extent.

Cultural norms which prescribe who can display what emotions.

ex: In our society, we are more accepting of men feeling anger and women feeling sadness.

Theories of Emotion

Common Sense Theory

a stimulus leads to an emotion, which then leads to bodily arousal.

James-Lange Theory

Theory that states that physiological arousal precede and cause the sensation of emotion

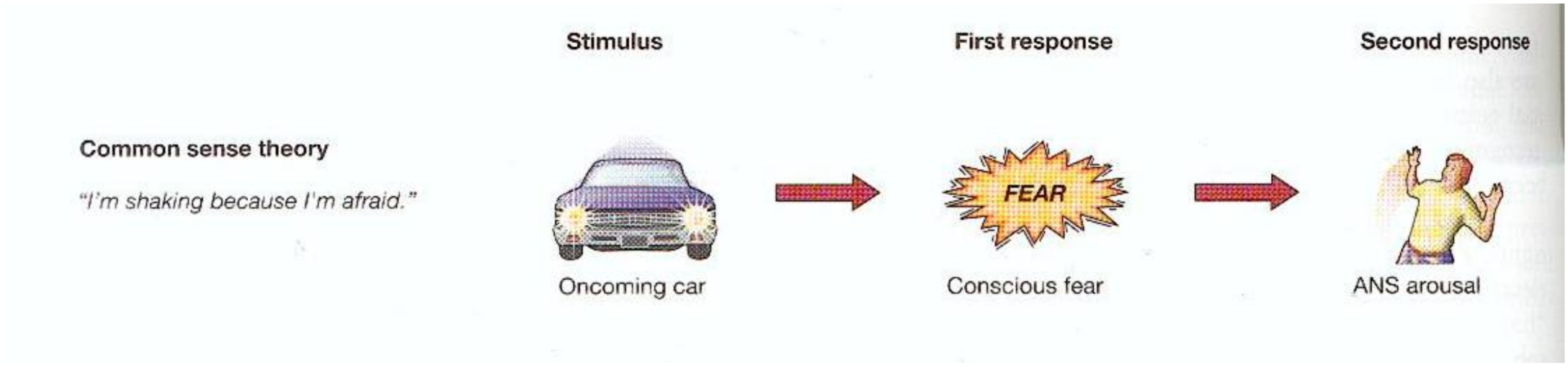
Cannon-Bard Theory

Theory that states that physiological arousal and emotional feelings occur simultaneously

Schacter-Singer's Two-factor Theory

Theory that states that emotion begins with an undifferentiated arousal that we interpret into an emotion dependent on the perceived context

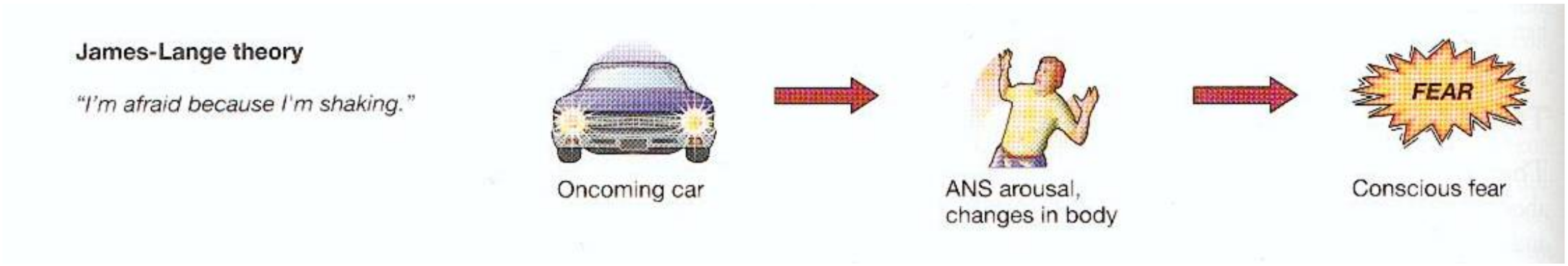
Common Sense Theory



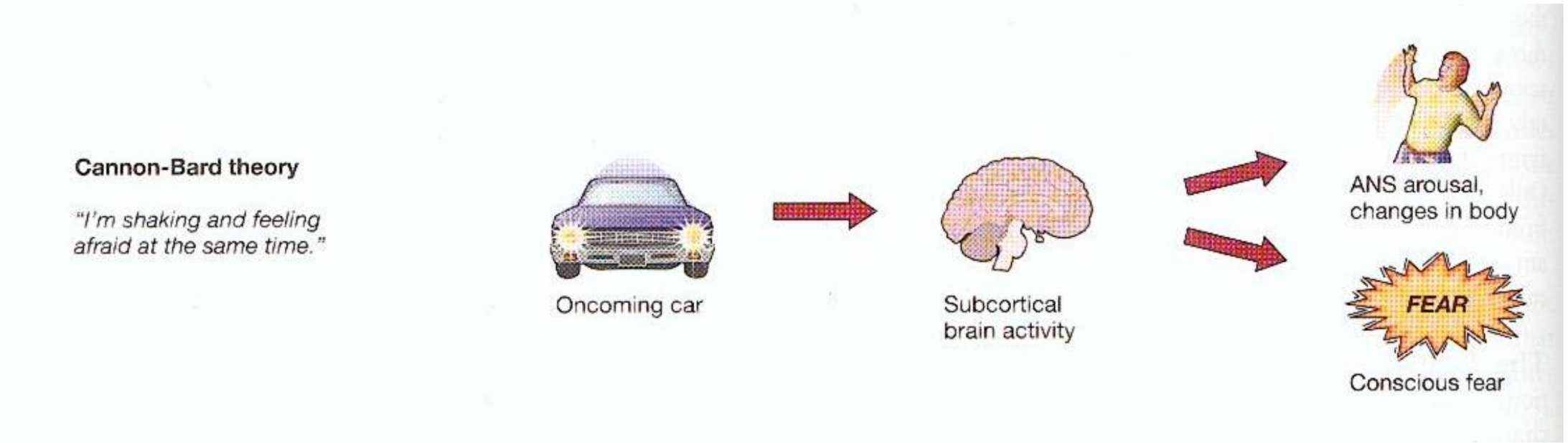
James-Lange Theory

-we feel sorry because we cry, angry because we strike, afraid because we tremble, and not that we cry, strike or tremble because we are sorry, angry or fearful."

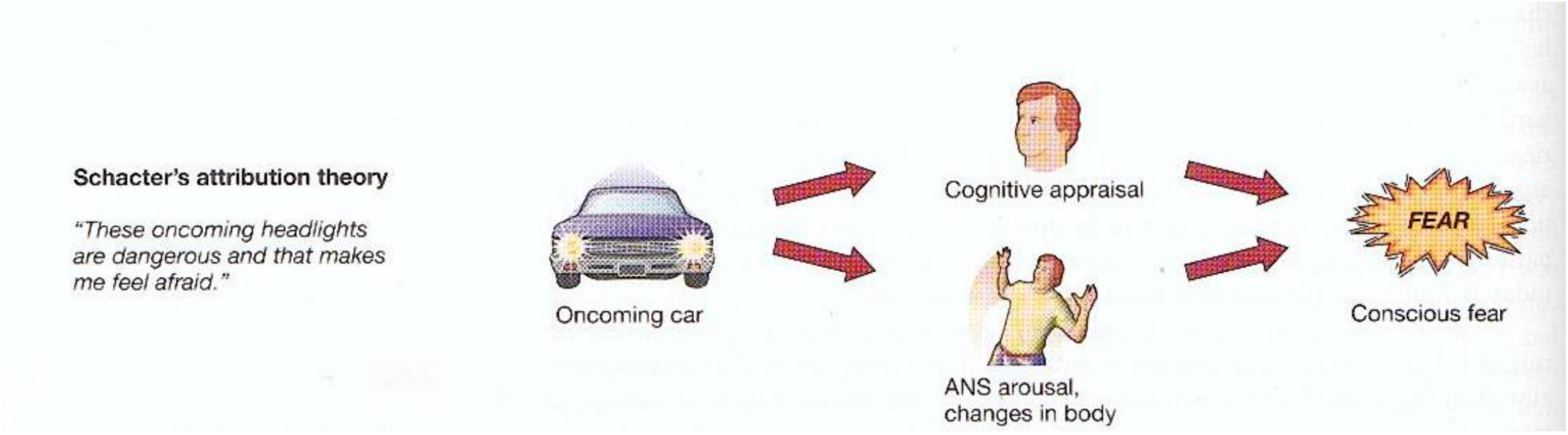
-- William James



Cannon-Bard Theory



Schacter's and Singer's Two - Factor Theory



Schacter's Experiment

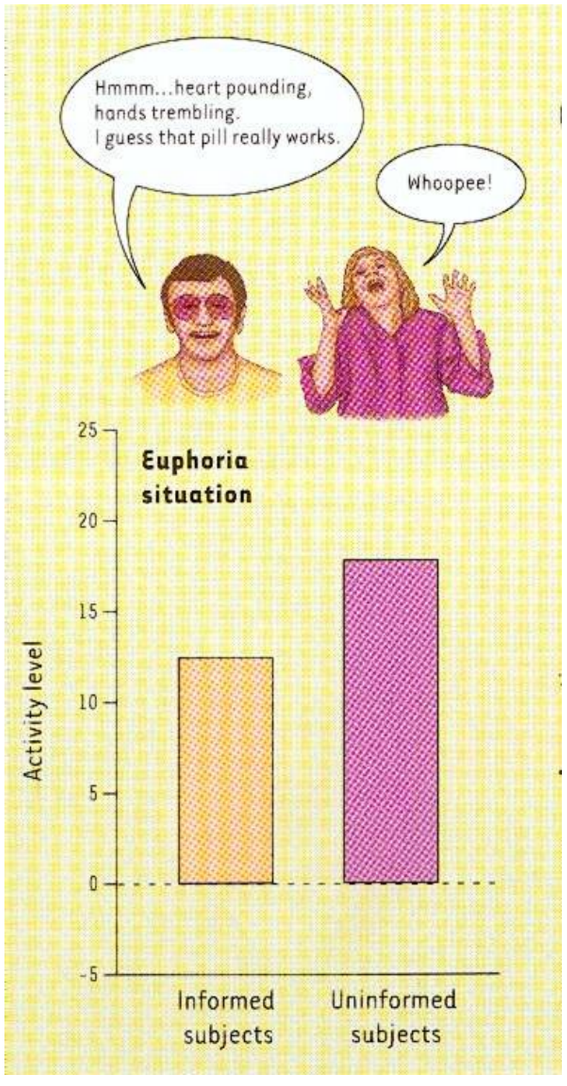
Schacter & Singer (1962)
subjects were injected with adrenaline (or a placebo)
    adrenaline >> sweaty palms, increased heart rate, shakes

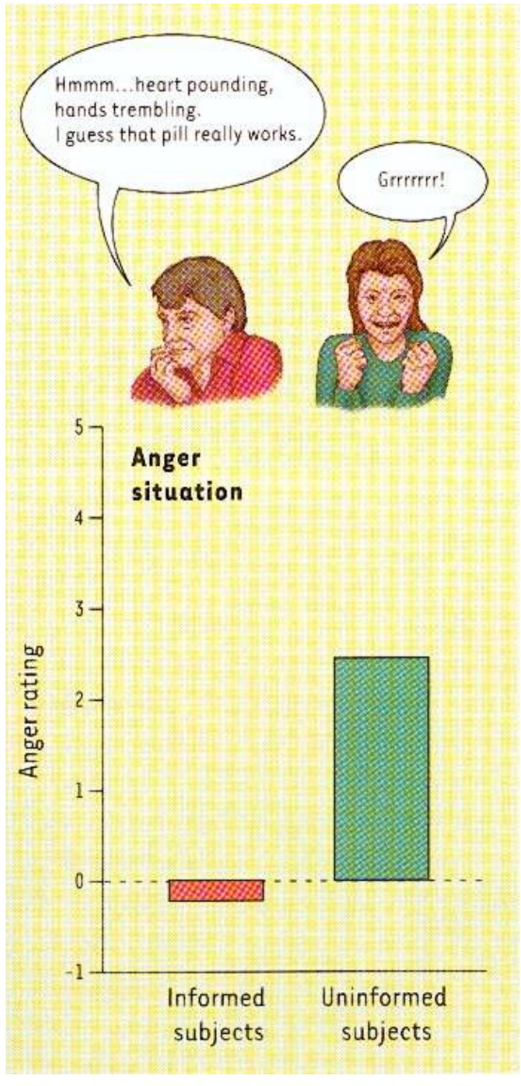
some subjects were told they would feel aroused; some were told nothing

left subjects in a waiting room with a confederate

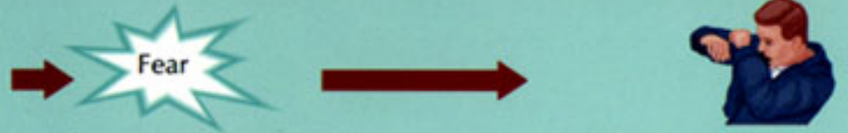
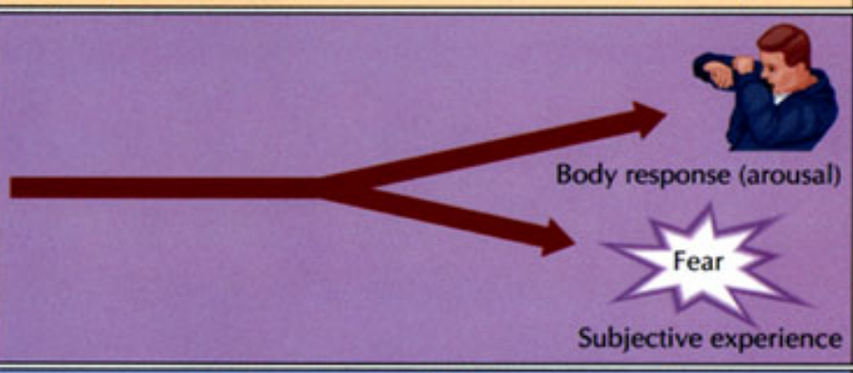
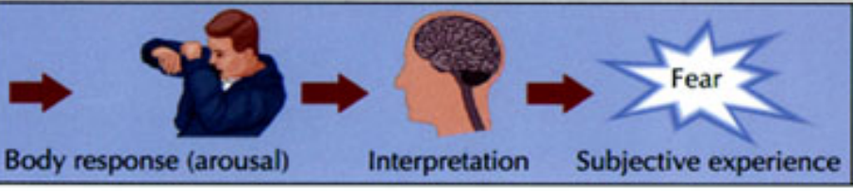
    euphoria condition
        confederate played with a hula hoop and made paper airplanes
    angry condition
        confederate asked obnoxious personal questions

Schachter's Results





Theories of emotion

Theory	Stimulus	Response	Report
Common sense			"My heart is pounding because I feel afraid."
James-Lange			"I feel afraid because my heart is pounding."
Cannon-Bard			"The dog makes me feel afraid and my heart pound."
Two-factor			"My pounding heart means I'm afraid because I interpret the situation as dangerous."

Brain Mechanisms in Emotion

Hemispheric Lateralization

Right hemisphere is associated with negative emotions
– right frontal damage << fewer negative emotions
often not appropriately upset or concerned about injury, may produce laughter, euphoria, and witzelsucht, a tendency to joke and make puns

Left hemisphere is associated with positive emotions
– activated by positive emotions
– left frontal damage << depressed ,sometimes overly catastrophic and weepy about injury

Within the hemispheres, the temporal and frontal lobes play a prominent role in emotion.

Brain Mechanisms in Emotion

Limbic System

amygdala-associated with fear, anxiety, and rage

- damage to amygdala
  - absence of fear
  - absence of conditioned fear response
  - inability to recognize facial emotions

- abnormal activation of amygdala
  - sudden violent rage
- in brain imaging studies, the amygdala is activated by scary stimuli (even if you're not aware of them)

hippocampus-important in the processing of memories

hypothalamus-begins a cascade of hormonal changes to perceived threats in the environment

Brain Mechanisms in Emotion

Frontal lobe Key functions

i. Speech

ii. Critical to personality

iii. Abstract thought

iv. Memory and higher-order mental functions

v. Capacity to initiate and stop tasks

vi. Concentration

Frontal Lobe Dysfunction

(dorsolateral convexity lesions)

Apathy >> Decreased drive, initiative >> Poor grooming >> Decreased attention >> Poor ability to think abstractly>> Broca aphasia (if in dominant hemisphere)

(orbitofrontal cortex lesions)

Withdrawal >> Fearfulness >> Explosive mood >> Loss of inhibitions (disinhibitions) >>Violent outbursts

Kluver-Bucy syndrome (bilateral injury to the temporal lobe)**:**

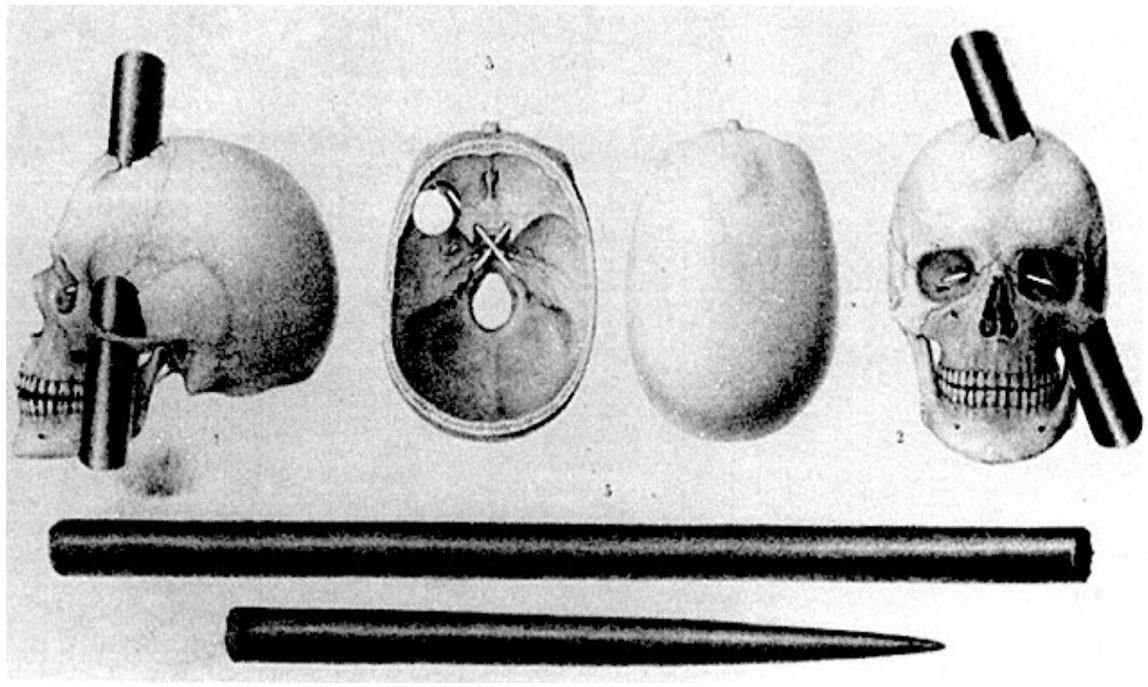
Behavior in this syndrome is characterized by hypersexuality, placidity, a tendency to explore the environment with the mouth(hyperorality), inability to recognize the emotional significance of visual stimuli, and constantly shifting attention, called hypermetamorphosis.

The frontal lobe syndrome:

- most commonly produced by trauma, infarcts, tumors, lobotomy, multiple sclerosis, or Pick's disease.
- consists of slowed thinking, poor judgment, decreased curiosity, social withdrawal, and irritability.
- Patients typically display apathetic indifference to experience that can progress to impulsive disinhibition.
- Unilateral frontal lobe lesions may be largely unnoticed because the intact lobe can compensate with high efficiency.

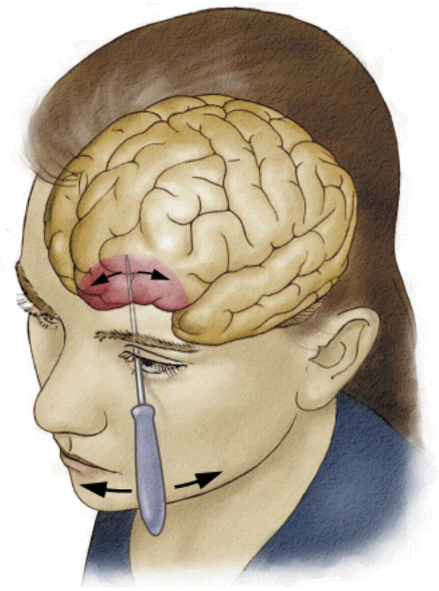
Phineas Gage

– "Gage is no longer Gage"

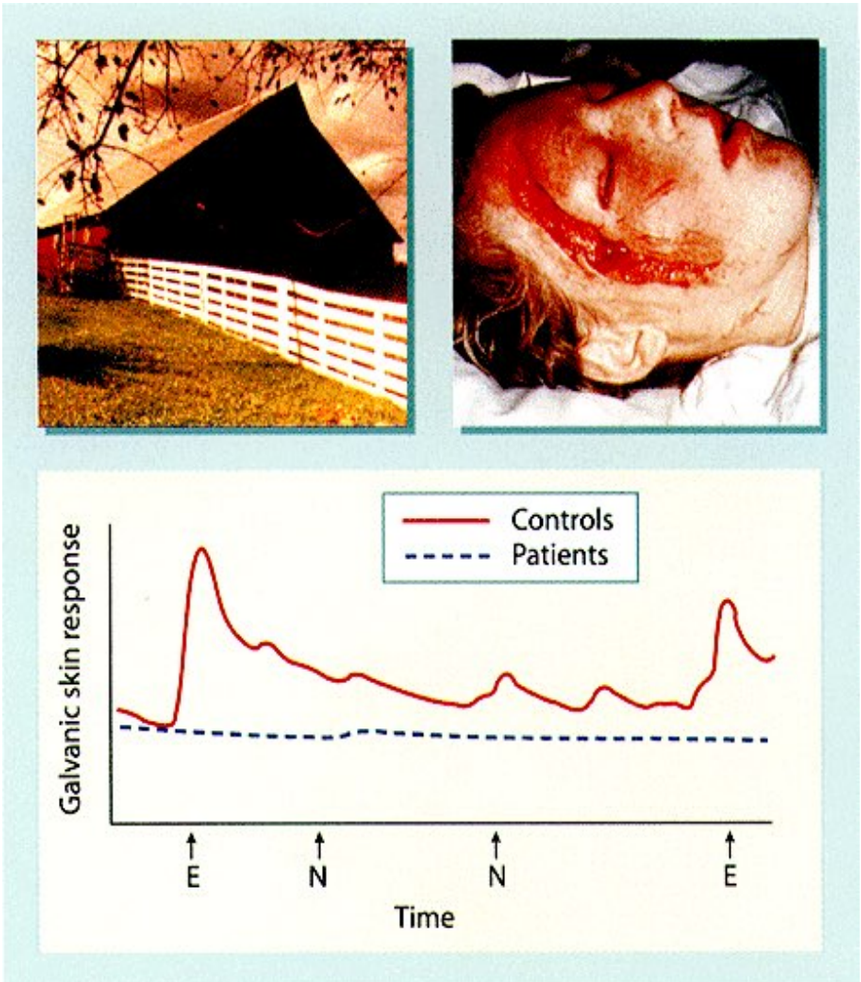


frontal lobotomies

- 1935: chimps who were neurotic before surgery became more relaxed after it
- 1930s: Egaz Moniz begins frontal lobotomies in humans (and eventually wins Nobel Prize)
- 1950s: psychosurgery in vogue; 40,000 frontal lobotomies in North America
- The story of Agnes (Kolb & Whishaw)
  - no outward signs of emotion
  - no facial expression
  - no feelings toward other people (but still liked her dog)
  - felt empty, zombie-like
  - Other patients lose prosody = emotional component of speech



Frontal patients show flat skin conductance to disturbing stimuli



Theories of Motivation

Instinct/evolution Theories- The most basic theory- Explaining behavior in how it lends itself to the support of reproduction in the organism. These behaviors are generally innate and unlearned.

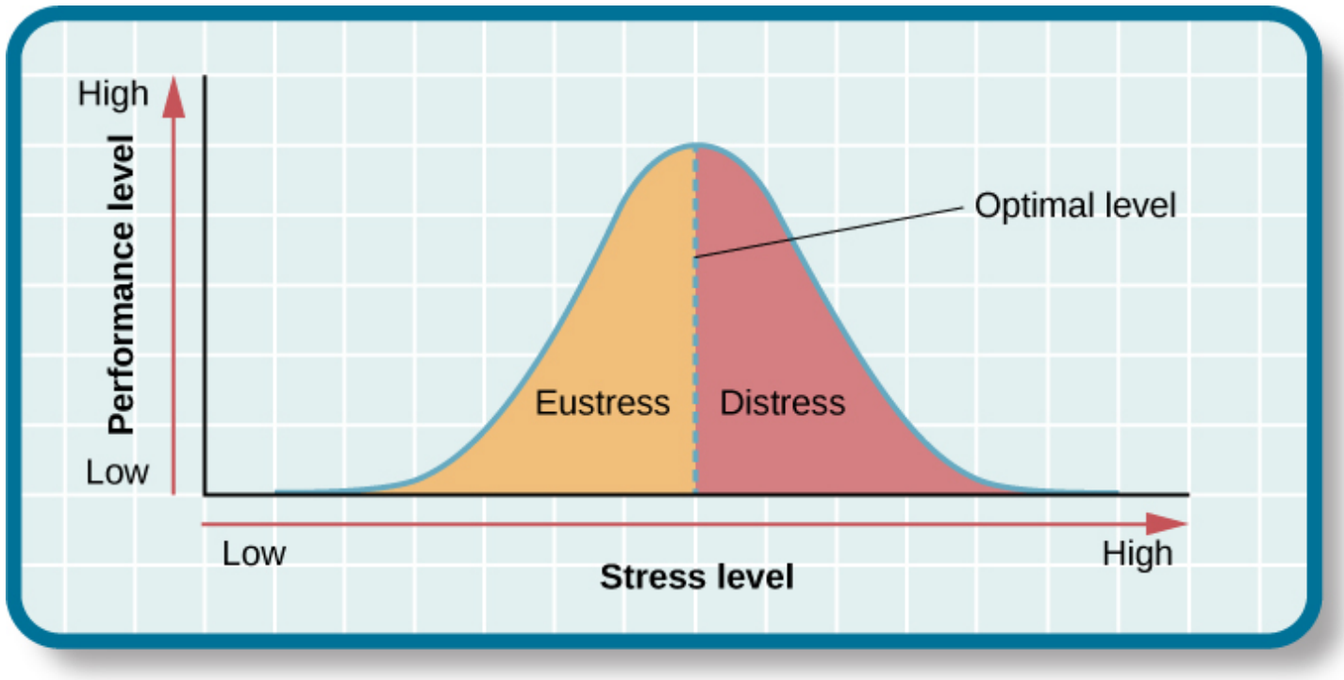
Drive-Reduction Theory- an organism is motivated to engage in activities that reduce an internal drive state - when a need is not met it creates an unpleasant state of arousal which are motivated to decrease. To decrease this state you act in a way to fulfill the need

Arousal Theory- we seek to obtain a level of arousal that is optimal for us in any given situation. Usually this is some moderate level of arousal.

Expectancy Theory- being driven to perform a behavior because you believe that it will yield a certain outcome. When your expectations are for success
 or something pleasurable , your motivation is high.

Maslow's Hierarchy of Needs- being driven by an ascending "needs" list

- Imagine you're writing an exam of average difficulty. How well would you do if you were
  - really mellow or drowsy
  - average
  - really stressed (or hooped on chocolate-covered espresso beans)?



Yerkes-Dodson law

Yerkes-Dodson law states the relationship between task performance and levels of arousal.

Participants perform low-difficulty tasks better with higher than average arousal

Participants perform moderate-difficulty tasks better with moderate arousal

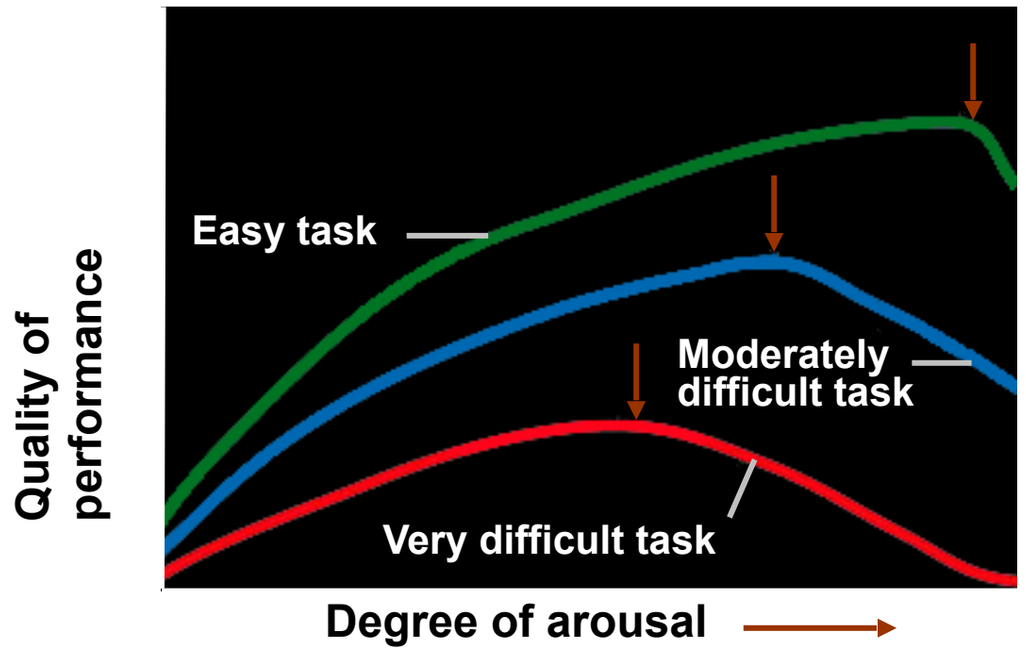
Participants perform high-difficulty tasks better with lower than average arousal

Some arousal is necessary

High arousal is helpful on easy tasks

As level of arousal increases, quality of performance decreases with task difficulty

Too much arousal is harmful

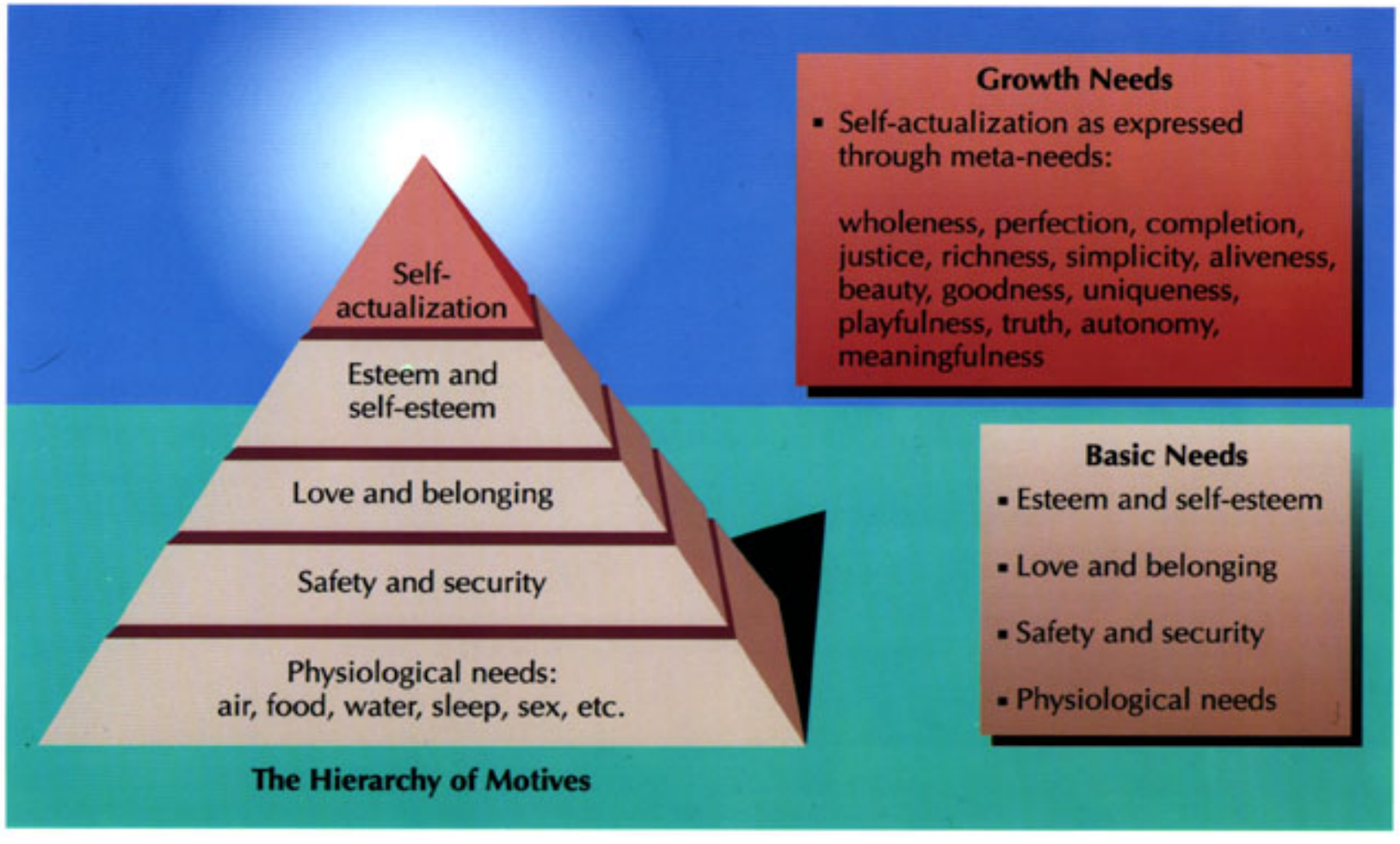


Maslow's Hierarchy of Needs

Individuals have needs that exist in a hierarchy and you are not motivated to satisfy higher level needs unless your lower level needs have been satisfied. At the base of the hierarchy are **physiological needs** , next comes **safety needs** then **social needs** . Theses three needs are referred to as **deficiency needs**.

The higher level growth needs are **esteem needs** and **self-actualization needs .**

Maslow's hierarchy of needs



MASLOW'S HIERARCHY OF NEEDS

ABRAHAM MASLOW

MORALITY, CREATIVITY, SPONTANEITY, PROBLEM SOLVING, LACK OF PREJUDICE, ACCEPTANCE OF FACTS

SELF-ACTUALIZATION

SELF-ESTEEM, CONFIDENCE, ACHIEVEMENT, RESPECT OF OTHERS, RESPECT BY OTHERS

ESTEEM

FRIENDSHIP, FAMILY, SEXUAL INTIMACY

LOVE/BELONGING

SECURITY OF BODY, OF EMPLOYMENT, OF RESOURCES, OF MORALITY, OF THE FAMILY, OF HEALTH, OF PROPERTY

SAFETY

BREATHING, FOOD, WATER, SEX, SLEEP, HOMEOSTASIS, EXCRETION

PHYSIOLOGICAL

Abraham Harold Maslow (April 1, 1908 - June 8, 1970) was a psychologist who studied positive human qualities and the lives of exemplary people. In 1954, Maslow created the Hierarchy of Human Needs and expressed his theories in his book, Motivation and Personality.

Self-Actualization - A person's motivation to reach his or her full potential. As shown in Maslow's Hierarchy of Needs, a person's basic needs must be met before self-actualization can be achieved.

Hunger Drive

Two areas of the hypothalamus, the lateral and ventromedial areas, play a central role in the hunger drive.

ventromedial hypothalamus-when stimulated, it signals satiety. If damaged the organism will severely overeat.

lateral hypothalamus-when stimulated, its signals hunger. If damaged can cause an organism to starve to death.

Internal Cues

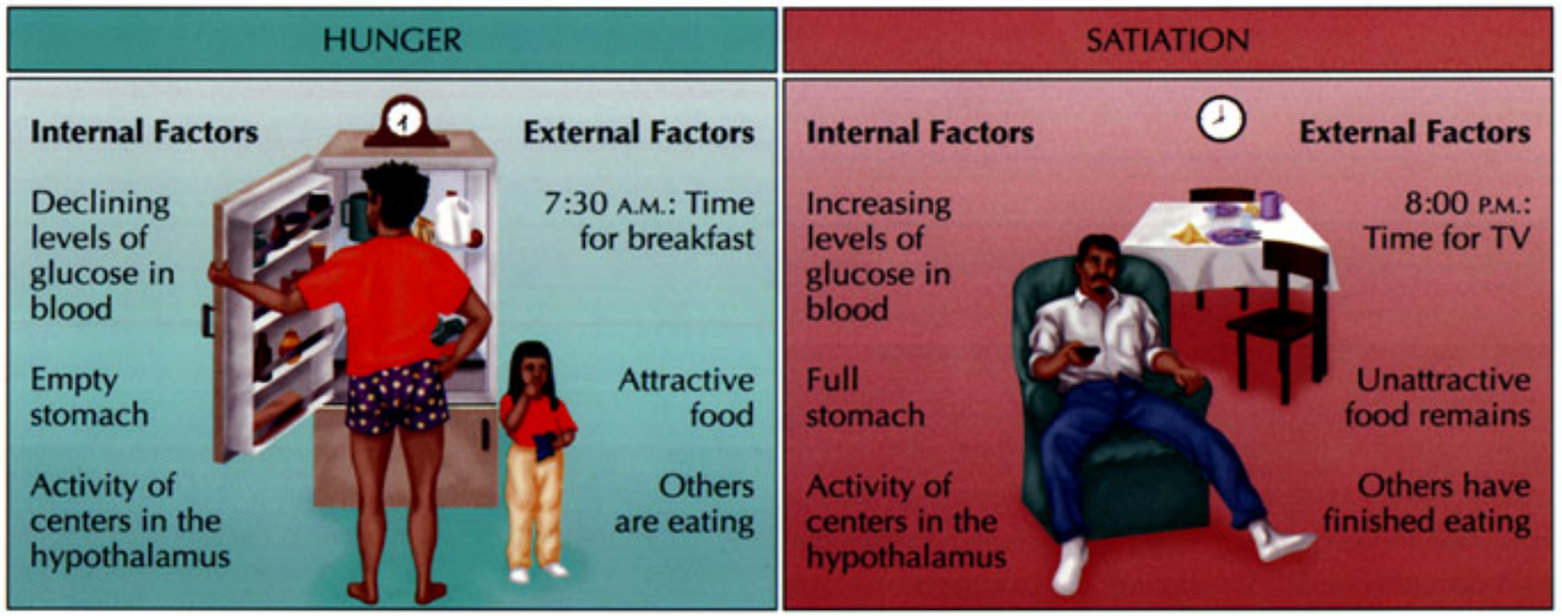
Glucostatic theory of hunger- as glucose levels drop in the blood, hunger signals are initiated

Set point theory of hunger and weight- the idea that the body tries to maintain a set weight, such that when weight drops below the set point there is a signal for hunger brain messages

External Cues

Texture of food, smell, pictures of food, etc.
Variety of foods
Cafeteria effect
Social mores and taboos

Factors controlling hunger and satiation



Thirst Drive

Extracellular Thirst (Volemic Thirst)

Water is lost from fluids around the cell

Caused by vomiting, bleeding, diarrhea, sweating and alcohol (hangovers)

Solution- drink salty drinks- Gatorade

Intracellular Thirst (Osmotic Thirst)

Fluid is drawn out of the cells

Caused by salty meals

Solution- drink water

THANK YOU