Psychology 1101 Midterm 1 Review

Chapter 1: Thinking Critically with Psychological Science

We cannot rely on intuition and common sense because of:

- Hindsight bias
- Overconfidence
- Tendency to perceive patterns in random events

Intuition:

- An effortless, immediate, automatic feeling or thought, as contrasted with explicit, conscious reasoning

Hindsight Bias:

- The tendency to believe, after learning an outcome, that one would have foreseen it.
    - The "*I-knew-it-all-along*" phenomenon
        - Ex:
            - The long distance romantic attraction experiment
                - Hindsight bias can be seen when opposite findings both seem like common sense
- Common sense is not always wrong
    - Rather it usually easily describes what has happened then what will happen
        - Better at explaining the past than predicting the future
            - "good ideas in psychology usually have an oddly familiar quality, and the moment we encounter them we feel certain that we once came close to thinking the same thing ourselves and simply failed to write it down."
                - Good ideas are like good inventions: Once created, they seem obvious.

Overconfidence:

- Humans tend to think we know more than we do

Perceiving Order in Random Events:

- In our natural eagerness to make sense of our world, we perceive patterns.
    - And in wanting to make sense of the patterns, we give them meaning
        - Even though something that might seem very rare and meaningful is very likely something just random

        - Even something that might only happen to 1 in a billion people, happens 7 times a day, 2500 times a year

Hindsight bias, overconfidence, and our tendency to perceive patterns in random events often lead us to overestimate our intuition

- However, scientific inquiries can help us sift reality from illusion

o----------o

The Scientific Attitude:

- 3 main characteristics:
    - Curious
    - Skeptical
    - Humble

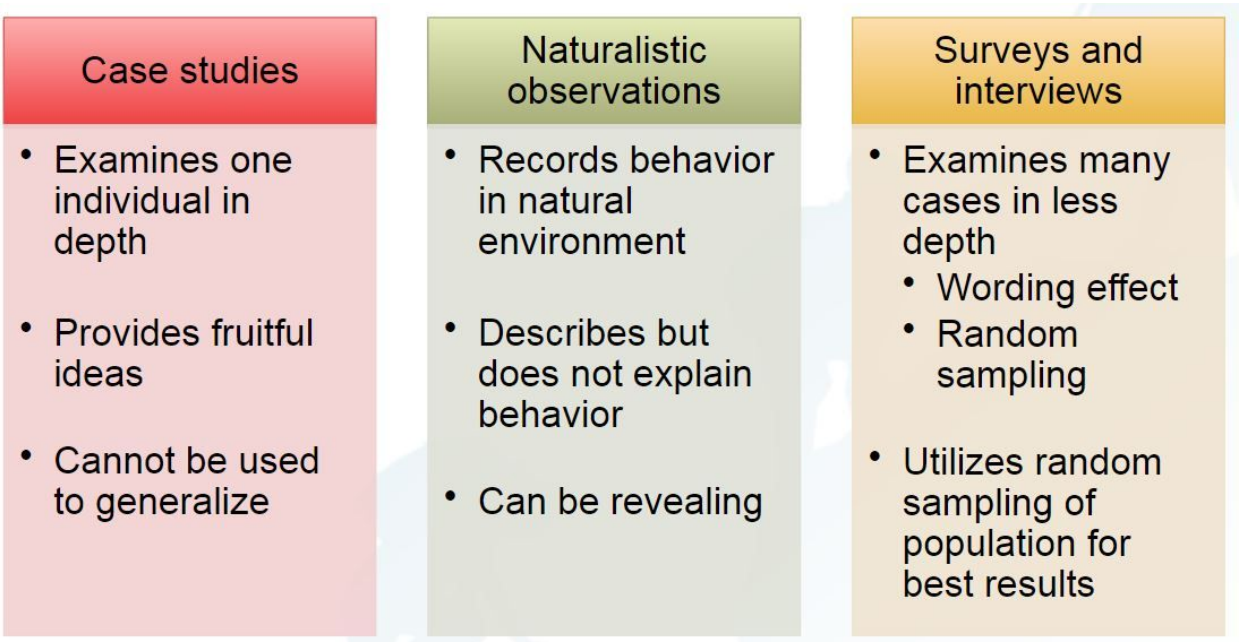
Critical Thinking:

- Thinking that does not blindly accept arguments and conclusions. Rather, it examines assumptions, appraises the source, discerns hidden values, evaluates evidence, and assesses conclusions.

The Scientific Method:

- Theory:
    - An explanation using an integrated set of principles that organizes observations and predicts behaviors or events. (predictions called hypotheses)
        - In the end, our theory will be useful if it
            - Organizes a range of self-reports and observations
            - Implies predictions that anyone can use to check the theory or to derive practical applications
            - Stimulate further research that leads to a revised theory that better organizes and predicts what we know.
- Hypothesis:
    - A testable prediction, often implied by a theory.
- Operational Definition:
    - A carefully worded statement of the exact procedures (operations) used in a research study. For example, human intelligence may be operationally defined as what an intelligence test measures.
- Replication:
    - Repeating the essence of a research study, usually with different participants in different situations, to see whether the basic finding extends to other participants and circumstances.

- We can test hypotheses through 3 ways:
    - Descriptive methods
        - which describe behaviors, often through case studies, surveys, or naturalistic observations
    - Correlational methods
        - which associate different factors
    - Experimental methods
        - which manipulate factors to discover their effects



o----------o

Description:

- 3 methods of observing and drawing conclusions
    - Case Studies
        - A descriptive technique in which one individual or group is studied in depth in the hope of revealing universal principles.
            - In depth analyses of individuals or groups
    - Naturalistic Observation
        - A descriptive technique of observing and recording behavior in naturally occurring situations without trying to manipulate and control the situation.
            - Watching and recording the natural behavior or many individuals
    - Surveys & Interviews
        - A descriptive technique for obtaining the self-reported attitudes or behaviors of a particular group, usually by questioning a representative, random sample of the group.

        - Asking people questions
            - But asking questions is tricky, and the answers often depend on how questions are worded and respondents are chosen

    - Wording Effects:
        - Even subtle changes in the order or wording of questions can have major effects
    - Random Sampling:
        - How do you obtain a representative sample?
        - How could you choose a group that would represent the total student population?
            - Population:
                - All those in a group being studied, from which samples may be drawn.
            - Random Sample:
                - A sample that fairly represents a population because each member has an equal chance of inclusion.

Correlation:

- Naturalistic observations and surveys often show us that one trait or behavior is related to another. In such cases, we say the two correlate
    - Correlation:
        - A measure of the extent to which two factors vary together, and thus of how well either factor predicts the other.
- A statistical measure (the correlation coefficient) helps us figure how closely two things vary together, and thus how well either one predicts the other.
    - Correlation Coefficient:
        - A statistical index of the relationship between two things (from -1.00 to +1.00).
- Data can be graphed in a scatter plot to demonstrate how closely two things are related
    - Scatterplot:
        - A graphed cluster of dots, each of which represents the values of two variables. The slope of the points suggests the direction of the relationship between the two variables. The amount of scatter suggests the strength of the correlation (little scatter indicates high correlation).

Regression Toward the Mean:

- the tendency for extreme or unusual scores or events to fall back (regress) toward the average.
- Illusory correlation

        - When we believe there is a relationship between two things, we are likely to notice and recall instances that confirm our belief
            - Illusory correlations feed an illusion of control
    - The illusion that uncontrollable events correlate with our actions is also fed by a statistical phenomenon called regression toward the mean.
        - Average results are more typical than extreme results. Thus, after an unusual event, things tend to return toward their average level; extraordinary happenings tend to be followed by more ordinary ones.

Correlation & Causation:

- Correlations enable prediction but not cause-effect explanation
- Correlation does not prove causation.
    - Correlation indicates the possibility of a cause-effect relationship but does not prove such

Experimentation:

- Experiment:
    - A research method in which an investigator manipulates one or more factors (independent variables) to observe the effect on some behavior or mental process (the dependent variable). By random assignment of participants, the experimenter aims to control other relevant factors.
        - Independent Variable:
            - The factor that is manipulated; the variable whose effect is being studied.
        - Confounding Variable:
            - A factor other than the independent variable that might produce an effect.
        - Dependent Variable:
            - The variable that may change when the independent variable is manipulated.
- Experimental Group:
    - In an experiment, the group exposed to the treatment, that is, to one version of the independent variable.
- Control Group:
    - In an experiment, the group not exposed to the treatment; contrasts with the experimental group and serves as a comparison for evaluating the effect of the treatment.
- Random Assignment:
    - Assigning participants to experimental and control groups by chance, thus minimizing preexisting differences between the different groups.
- Double blind procedure:

        - An experimental procedure in which both the research participants and the research staff are ignorant (blind) about whether the research participants have received the treatment or a placebo. Commonly used in drug-evaluation studies.
    - Placebo Effect:
        - Experimental results caused by expectations alone; any effect on behavior caused by the administration of an inert substance or condition, which the recipient assumes is an active agent.

Comparing Research Methods

Research Method	Basic Purpose	How Conducted	What Is Manipulated	Weaknesses
Descriptive	To observe and record behavior	Do case studies, naturalistic observations, or surveys	Nothing	No control of variables; single cases may be misleading
Correlational	To detect naturally occurring relationships; to assess how well one variable predicts another	Collect data on two or more variables; no manipulation	Nothing	Cannot specify cause and effect
Experimental	To explore cause and effect	Manipulate one or more factors; use random assignment	The independent variable(s)	Sometimes not feasible; results may not generalize to other contexts; not ethical to manipulate certain variables

Psychology Research Ethics:

- Protecting Research Participants
    - Studying and protecting animals:
        - Many psychologists study animals because they find them fascinating
        - Psychologists also study animals to learn about people
    - Studying and protecting humans:
        - Informed consent:
            - Giving potential participants enough information about a study to enable them to choose whether they wish to participate.
        - Debriefing:
            - The post experimental explanation of a study, including its purpose and any deceptions, to its participants.

o----------o

Statistical Reasoning:

- Measure of central tendency:
    - Mode:
        - The most frequently occurring score in a distribution
    - Mean:

        - The arithmetic average of a distribution, obtained by adding the scores and then dividing by the number of scores
    - Median:
        - The middle score in a distribution; half the scores are above it and half are below it
- Measures of Variation:
    - Range:
        - The difference between the highest and lowest scores in a distribution
    - Standard Deviation:
        - A computed measure of how much scores vary around the mean score
    - Normal Curve:
        - A symmetrical, bell-shaped curve that describes the distribution of many types of data; most scores fall near the mean (68 percent fall within one standard deviation of it) and fewer and fewer near the extremes

Chapter 2: The Biology of Mind

Neural and Hormonal Systems:

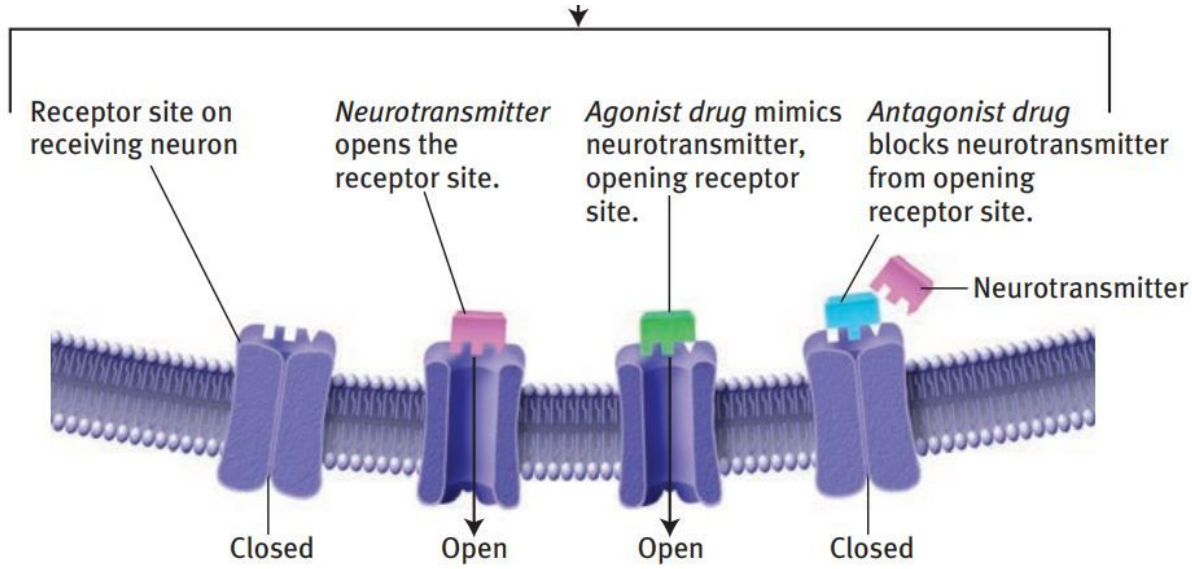
- Biological Perspective:
    - concerned with the links between biology and behavior. Includes psychologists working in neuroscience, behavior genetics, and evolutionary psychology. These researchers may call themselves
        - behavioral neuroscientists, neuropsychologists, behavior geneticists, physiological psychologists, or biopsychologists
- Neuron:
    - a nerve cell; the basic building block of the nervous system
- Dendrites:
    - a neuron's bushy, branching extensions that receive messages and conduct impulses toward the cell body
- Axon:
    - the neuron extension that passes messages through its branches to other neurons or to muscles or glands
- Myelin Sheath:
    - a fatty tissue layer segmentally encasing the axons of some neurons; enables vastly greater transmission speed as neural impulses hop from one node to the next.
- Glial Cells:
    - cells in the nervous system that support, nourish, and protect neurons; they may also play a role in learning, thinking, and memory

- Action Potential:
    - a neural impulse; a brief electrical charge that travels down an axon
- Refractory Period:
    - a period of inactivity after a neuron has fired
- Threshold:
    - the level of stimulation required to trigger a neural impulse
- All-or-none response:
    - a neuron's reaction of either firing (with a full-strength response) or not firing
- Synapse:
    - the junction between the axon tip of the sending neuron and the dendrite or cell body of the receiving neuron. The tiny gap at this junction is called the synaptic gap or synaptic cleft.
- Neurotransmitters:
    - chemical messengers that cross the synaptic gaps between neurons. When released by the sending neuron, neurotransmitters travel across the synapse and bind to receptor sites on the receiving neuron, thereby influencing whether that neuron will generate a neural impulse.
- Reuptake:
    - a neurotransmitter's reabsorption by the sending neuron

Neurotransmitters and their Effects:

Neurotransmitter	Function	Examples of Malfunctions
Acetylcholine (ACh)	Enables muscle action, learning, and memory	With Alzheimer's disease, ACh-producing neurons deteriorate.
Dopamine	Influences movement, learning, attention, and emotion	Oversupply linked to schizophrenia. Undersupply linked to tremors and loss of motor control in Parkinson's disease.
Serotonin	Affects mood, hunger, sleep, and arousal	Undersupply linked to depression. Some drugs that raise serotonin levels are used to treat depression.
Norepinephrine	Helps control alertness and arousal	Undersupply can depress mood.
GABA (gamma-aminobutyric acid)	A major inhibitory neurotransmitter	Undersupply linked to seizures, tremors, and insomnia.
Glutamate	A major excitatory neurotransmitter; involved in memory	Oversupply can overstimulate the brain, producing migraines or seizures (which is why some people avoid MSG, monosodium glutamate, in food).

- Endorphins:
    - “morphine within”—natural, opiate-like neurotransmitters linked to pain control and to pleasure.
- Agonist:
    - a molecule that increases a neurotransmitter’s action
- Antagonist:
    - a molecule that inhibits or blocks a neurotransmitter’s action



The Nervous System:

- the body’s speedy, electrochemical communication network, consisting of all the nerve cells of the peripheral and central nervous systems.

- Central nervous system:
    - the brain and spinal cord.
- Peripheral nervous system:
    - the sensory and motor neurons that connect the central nervous system (CNS) to the rest of the body.
- Nerves:
    - bundled axons that form neural cables connecting the central nervous system with muscles, glands, and sense organs
- Sensory (afferent) neurons:
    - neurons that carry incoming information from the sensory receptors to the brain and spinal cord.
- Motor (efferent) neurons:
    - neurons that carry outgoing information from the brain and spinal cord to the muscles and glands

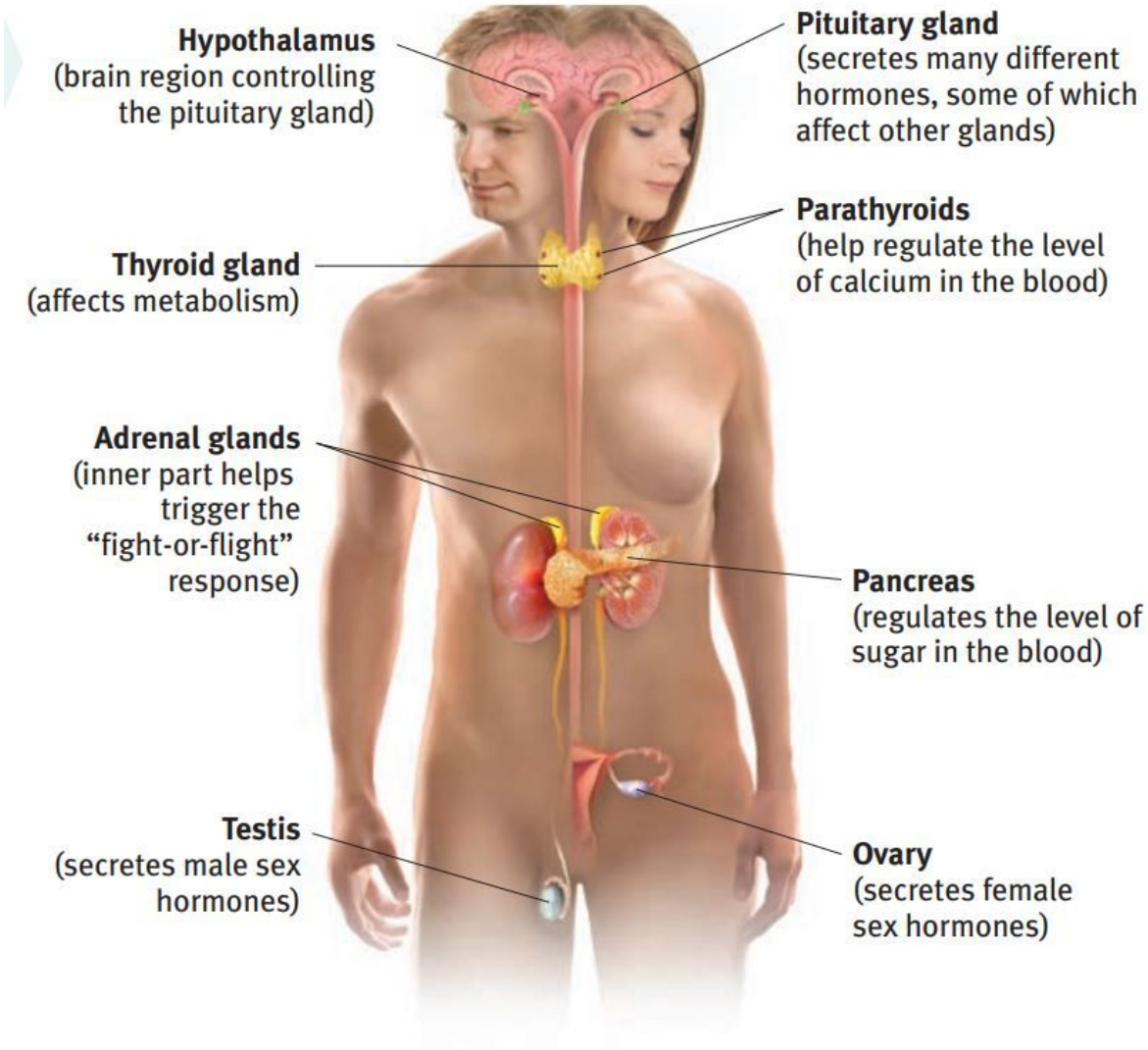
- Interneurons:
    - neurons within the brain and spinal cord; communicate internally and process information between the sensory inputs and motor outputs.
- Somatic nervous system:
    - the division of the peripheral nervous system that controls the body's skeletal muscles. Also called the skeletal nervous system
        - Our somatic nervous system enables voluntary control of our skeletal muscles
- Autonomic nervous system:
    - the part of the peripheral nervous system that controls the glands and the muscles of the internal organs (such as the heart). Its sympathetic division arouses; its parasympathetic division calms
- Sympathetic nervous system:
    - the division of the autonomic nervous system that arouses the body, mobilizing its energy.
- Parasympathetic nervous system:
    - the division of the autonomic nervous system that calms the body, conserving its energy

The Central Nervous System:

- Reflex:
    - a simple, automatic response to a sensory stimulus, such as the knee-jerk response

The Endocrine System:

- Endocrine system:
    - the body's "slow" chemical communication system; a set of glands that secrete hormones into the bloodstream
- Hormones:
    - chemical messengers that are manufactured by the endocrine glands, travel through the bloodstream, and affect other tissues



- Adrenal glands:
    - a pair of endocrine glands that sit just above the kidneys and secrete hormones (epinephrine and norepinephrine) that help arouse the body in times of stress
        - In a moment of danger, the ANS orders the adrenal glands on top of the kidneys to release epinephrine and norepinephrine (also called adrenaline and noradrenaline). These hormones increase heart rate, blood pressure, and blood sugar, providing a surge of energy
- Pituitary glands:
    - the endocrine system's most influential gland. Under the influence of the hypothalamus, the pituitary regulates growth and controls other endocrine glands
        - Among the hormones released by the pituitary is a growth hormone that stimulates physical development. Another is oxytocin, which enables

contractions associated with birthing, milk flow during nursing, and orgasm.

The Tools of Discovery: Having our Heads Examined:

- Before it was through selective lesions:
    - Destroying tiny clusters of brain cells, and observing their effects
- Today they stimulate various brain parts electrically, chemically, or magnetically
- Lesion:
    - tissue destruction. A brain lesion is a naturally or experimentally caused destruction of brain tissue
- Electroencephalogram (EEG)
    - an amplified recording of the waves of electrical activity sweeping across the brain's surface. These waves are measured by electrodes placed on the scalp
- PET (positron emission tomography) scan:
    - a visual display of brain activity that detects where a radioactive form of glucose goes while the brain performs a given task
- MRI (magnetic resonance imaging):
    - a technique that uses magnetic fields and radio waves to produce computer - generated images of soft tissue. MRI scans show brain anatomy
- fMRI (functional MRI):
    - a technique for revealing blood flow and, therefore, brain activity by comparing successive MRI scans. fMRI scans show brain function as well as structure

The Brainstem:

- the oldest part and central core of the brain, beginning where the spinal cord swells as it enters the skull; the brainstem is responsible for automatic survival functions
- The brainstem, including the pons and medulla, is an extension of the spinal cord. The thalamus is attached to the top of the brainstem. The reticular formation passes through both structures

- Medulla:
    - the base of the brainstem; controls heartbeat and breathing
- Pons:
    - Helps coordinate movements and control sleep

The Thalamus:

- the brain's sensory control center
- The thalamus receives information from all the senses except smell and routes it to the higher brain regions that deal with seeing, hearing, tasting, and touching
- The thalamus also receives some of the higher brain's replies, which it then directs to the medulla and the cerebellum
- Nerves from the left side of the brain are mostly linked to the right side of the body, and vice versa.

The Reticular Formation:

- a neuron network extending from the spinal cord right up through the thalamus. As the spinal cord's sensory input flows up to the thalamus, some of it travels through the reticular formation, which filters incoming stimuli, relays important information to other brain areas, and controls arousal

The Cerebellum:

- enables nonverbal learning and skill memory. It also helps us judge time, modulate our emotions, and discriminate sounds and textures. And (with assistance from the pons) it coordinates voluntary movement

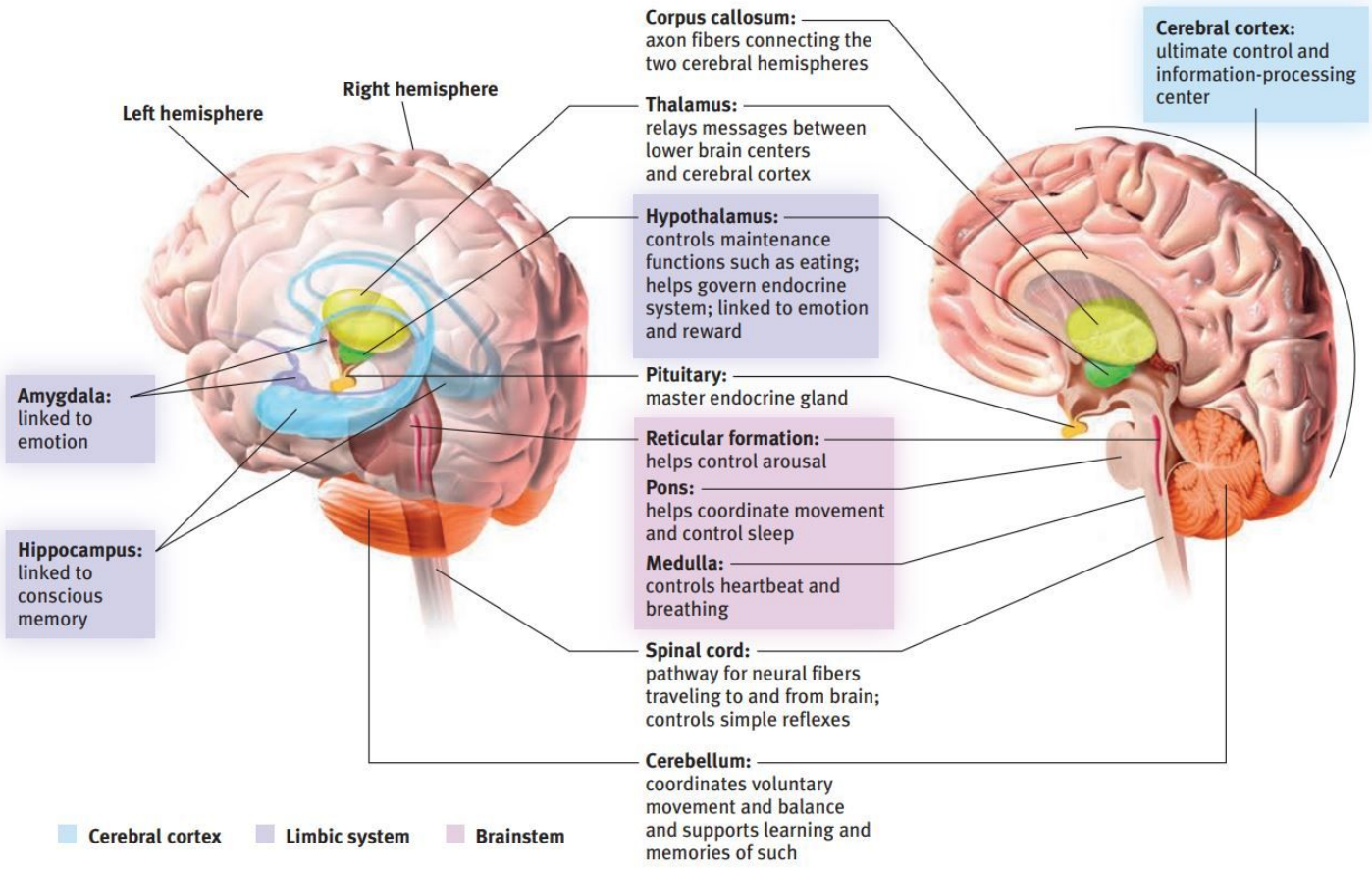
The Limbic System:

- Contains:
    - Amygdala
    - Hypothalamus
        - governing bodily maintenance. Some neural clusters in the hypothalamus influence hunger; others regulate thirst, body temperature, and sexual behavior. Together, they help maintain a steady (homeostatic) internal state
    - Hippocampus
        - processes conscious, explicit memories

Definitions:

- Thalamus:
    - the brain's sensory control center, located on top of the brainstem; it directs messages to the sensory receiving areas in the cortex and transmits replies to the cerebellum and medulla
- Reticular Formation:
    - a nerve network that travels through the brainstem into the thalamus and plays an important role in controlling arousal.
- Cerebellum:
    - the "little brain" at the rear of the brainstem; functions include processing sensory input, coordinating movement output and balance, and enabling nonverbal learning and memory.
- Limbic System:
    - neural system (including the hippocampus, amygdala, and hypothalamus) located below the cerebral hemispheres; associated with emotions and drives
- Hippocampus:

- a neural center located in the limbic system; helps process explicit memories for storage.
- Amygdala:
  - two lima bean-sized neural clusters in the limbic system; linked to emotion.
- Hypothalamus:
  - a neural structure lying below (hypo) the thalamus; it directs several maintenance activities (eating, drinking, body temperature), helps govern the endocrine system via the pituitary gland, and is linked to emotion and reward.



The Cerebral Cortex & Our Divided Brain:

- Cerebral cortex:
  - a thin surface layer of interconnected neural cells. It is your brain's thinking crown, your body's ultimate control and information-processing center
  - the intricate fabric of interconnected neural cells covering the cerebral hemispheres; the body's ultimate control and information-processing center
- Structure of the cortex:
  - Each hemisphere's cortex is subdivided into four lobes, separated by prominent fissures, or folds

- Body areas requiring precise control, such as the fingers and mouth, occupy the greatest amount of cortical space
    - Starting at the front of your brain and moving over the top, there are the frontal lobes (behind your forehead), the parietal lobes (at the top and to the rear), and the occipital lobes (at the back of your head). Reversing direction and moving forward, just above your ears, you find the temporal lobes
- Frontal lobes:
    - portion of the cerebral cortex lying just behind the forehead; involved in speaking and muscle movements and in making plans and judgments.
- Parietal lobes:
    - portion of the cerebral cortex lying at the top of the head and toward the rear; receives sensory input for touch and body position.
- Occipital lobes:
    - portion of the cerebral cortex lying at the back of the head; includes areas that receive information from the visual fields
- Temporal lobes:
    - portion of the cerebral cortex lying roughly above the ears; includes the auditory areas, each receiving information primarily from the opposite ear
- Motor cortex
    - an area at the rear of the frontal lobes that controls voluntary movements

- Somatosensory cortex:
    - area at the front of the parietal lobes that registers and processes body touch and movement sensations
- Association areas:
    - areas of the cerebral cortex that are not involved in primary motor or sensory functions; rather, they are involved in higher mental functions such as learning, remembering, thinking, and speaking.
- Plasticity:
    - the brain's ability to change, especially during childhood, by reorganizing after damage or by building new pathways based on experience

    - Neurogenesis:
        - the formation of new neurons.
    - Corpus callosum:
        - the large band of neural fibers connecting the two brain hemispheres and carrying messages between them
            - Split brain:
                - a condition resulting from surgery that isolates the brain's two hemispheres by cutting the fibers (mainly those of the corpus callosum) connecting them.

Chapter 6: Sensation and Perception

Sensation:

- the process by which our sensory receptors and nervous system receive and represent stimulus energies from our environment

Perception:

- the process of organizing and interpreting sensory information, enabling us to recognize meaningful objects and events

Bottom up processing:

- analysis that begins with the sensory receptors and works up to the brain's integration of sensory information

Top down processing:

- information processing guided by higher-level mental processes, as when we construct perceptions drawing on our experience and expectations

Transduction:

- conversion of one form of energy into another. In sensation, the transforming of stimulus energies, such as sights, sounds, and smells, into neural impulses our brain can interpret

Psychophysics:

- the study of relationships between the physical characteristics of stimuli, such as their intensity, and our psychological experience of them

Thresholds:

- Absolute threshold:
    - the minimum stimulus energy needed to detect a particular stimulus 50 percent of the time.
- Signal detection theory:
    - a theory predicting how and when we detect the presence of a faint stimulus (signal) amid background stimulation (noise). Assumes there is no single absolute threshold and that detection depends partly on a person's experience, expectations, motivation, and alertness.
- Subliminal:
    - below one's absolute threshold for conscious awareness.
- Priming:
    - the activation, often unconsciously, of certain associations, thus predisposing one's perception, memory, or response.

Difference Thresholds:

- the minimum difference between two stimuli required for detection 50 percent of the time. We experience the difference threshold as a just noticeable difference (or jnd)
- Weber's Law:
    - the principle that, to be perceived as different, two stimuli must differ by a constant minimum percentage (rather than a constant amount)

Sensory Adaptations:

- diminished sensitivity as a consequence of constant stimulation

Perceptual set:

- a mental predisposition to perceive one thing and not another.

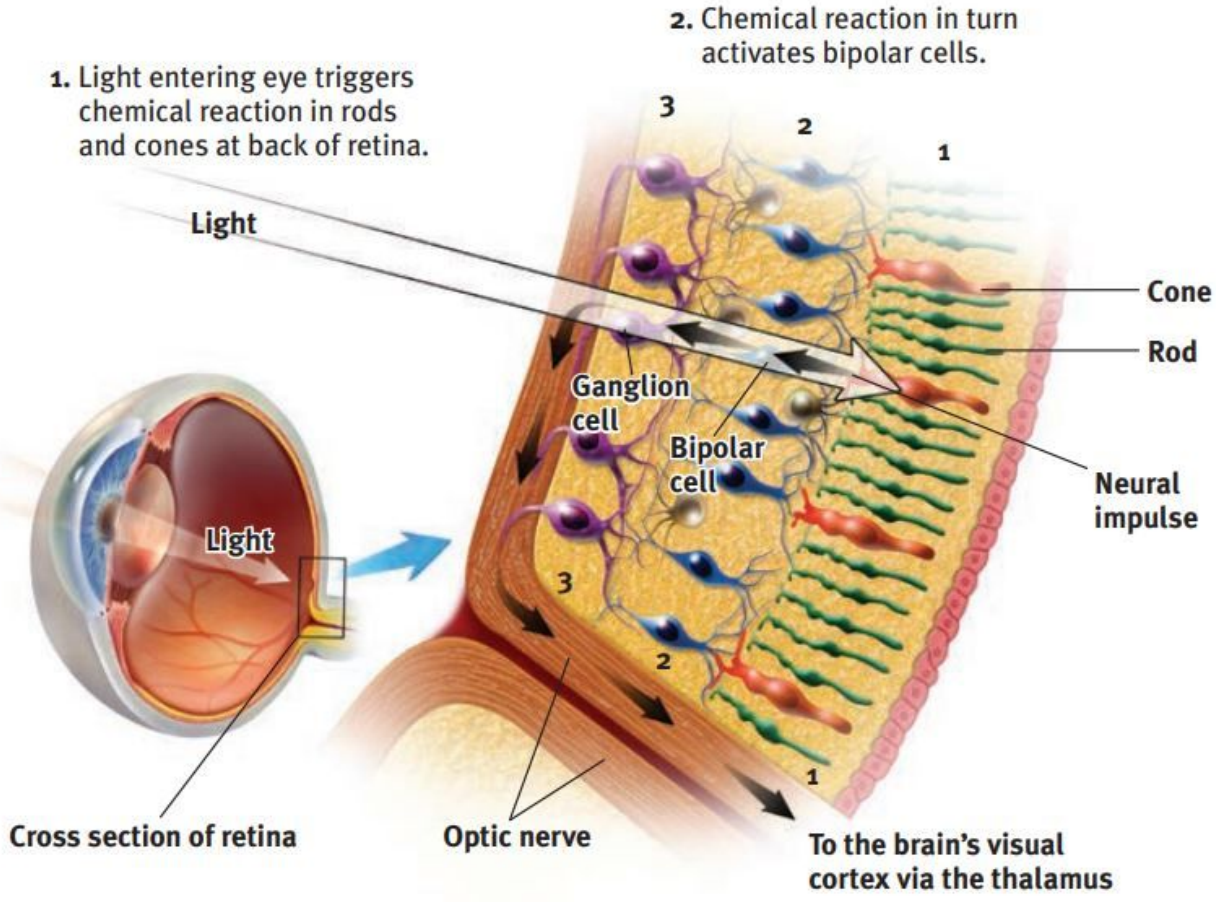
Vision:

- Wavelength:
    - the distance from the peak of one light or sound wave to the peak of the next. Electromagnetic wavelengths vary from the short blips of cosmic rays to the long pulses of radio transmission.
- Hue:
    - the dimension of color that is determined by the wavelength of light; what we know as the color names blue, green, and so forth.
- Intensity:
    - the amount of energy in a light wave or sound wave, which influences what we perceive as brightness or loudness. Intensity is determined by the wave's amplitude (height).

The Eye:

- Pupil:
    - the adjustable opening in the center of the eye through which light enters.
- Iris:
    - a ring of muscle tissue that forms the colored portion of the eye around the pupil and controls the size of the pupil opening.
- Lens:
    - the transparent structure behind the pupil that changes shape to help focus images on the retina.
- Retina:
    - the light-sensitive inner surface of the eye, containing the receptor rods and cones plus layers of neurons that begin the processing of visual information.
- Accomodation:
    - the process by which the eye's lens changes shape to focus near or far objects on the retina.

- Rods:
    - retinal receptors that detect black, white, and gray; necessary for peripheral and twilight vision, when cones don't respond.
- Cones:
    - retinal receptor cells that are concentrated near the center of the retina and that function in daylight or in well-lit conditions. The cones detect fine detail and give rise to color sensations
- Optic nerve:
    - the nerve that carries neural impulses from the eye to the brain.
- Blind spot:
    - the point at which the optic
    - nerve leaves the eye, creating a "blind"
    - spot because no receptor cells are
    - located there.



3. Bipolar cells then activate the ganglion cells, whose combined axons form the optic nerve. This nerve transmits information (via the thalamus) to the brain.

Retinal Processing:

- Rods and cones get triggered
    - Activates nearby bipolar cells
        - Activates ganglion cells
            - They form the optic nerve
                - Signal gets sent to the thalamus
- Rods and cones differ in where they're found and in what they do. Cones cluster in and around the fovea, the retina's area of central focus
    - Fovea:
        - the central focal point in the retina, around which the eye's cones cluster

	Cones	Rods
Number	6 million	120 million
Location in retina	Center	Periphery
Sensitivity in dim light	Low	High
Color sensitivity	High	Low
Detail sensitivity	High	Low

How we perceive color:

- Young-Helmholtz trichromatic (three-color) theory:
    - the theory that the retina contains three different color receptors—one most sensitive to red, one to green, one to blue—which, when stimulated in combination, can produce the perception of any color
- Opponent-process theory:
    - the theory that opposing retinal processes (red-green, yellow-blue, white-black) enable color vision. For example, some cells are stimulated by green and inhibited by red; others are stimulated by red and inhibited by green.

Feature detection:

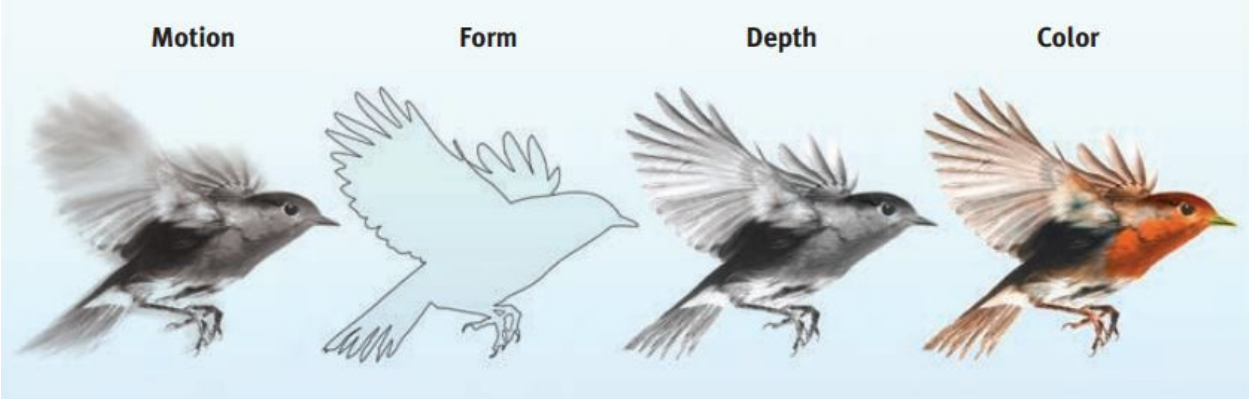
- Feature detectors:
    - nerve cells in the brain that respond to specific features of the stimulus, such as shape, angle, or movement.

Parallel Processing:

- the processing of many aspects of a problem simultaneously; the brain's natural mode of information processing for many functions, including vision.
- Studies of patients with brain damage suggest that the brain delegates the work of processing motion, form, depth, and color to different areas. After taking a scene apart, the brain integrates these subdimensions into the perceived image.

Gestalt:

- an organized whole. Gestalt psychologists emphasized our tendency to integrate pieces of information into meaningful wholes.



Form Perception:

- Figure ground:
    - the organization of the visual field into objects (the figures) that stand out from their surroundings (the ground).
- Grouping:
    - the perceptual tendency to organize stimuli into coherent groups.
        - We group things according to:
            - Proximity:
                - We group nearby figures together. We see not six separate lines, but three sets of two lines
            - Continuity:
                - We perceive smooth, continuous patterns rather than discontinuous ones. This pattern could be a series of alternating semicircles, but we perceive it as two continuous lines—one wavy, one straight
            - Closure:
                - We fill in gaps to create a complete, whole object. Thus we assume that the circles on the left are complete but partially blocked by the (illusory) triangle. Add nothing

more than little line segments to close off the circles and your brain stops constructing a triangle.

Depth perception:

- the ability to see objects in three dimensions although the images that strike the retina are two dimensional; allows us to judge distance.
- Visual cliff:
    - a laboratory device for testing depth perception in infants and young animals.
        - Eleanor Gibson and Richard Walk devised this miniature cliff with a glass-covered drop-off to determine whether crawling infants and newborn animals can perceive depth. Even when coaxed, infants are reluctant to venture onto the glass over the cliff.
- Binocular cues:
    - depth cues, such as retinal disparity, that depend on the use of two eyes.
        - Retinal disparity:
            - a binocular cue for perceiving depth: By comparing images from the retinas in the two eyes, the brain computes distance—the greater the disparity (difference) between the two images, the closer the object
- Monocular cues:
    - depth cues, such as interposition and linear perspective, available to either eye alone
    - Relative height:
        - We perceive objects higher in our field of vision as farther away. Because we assume the lower part of a figure-ground illustration is closer, we perceive it as figure
    - Relative motion:
        - As we move, objects that are actually stable may appear to move. If while riding on a bus you fix your gaze at some point—say, a house—the objects beyond the fixation point will appear to move with you. Objects in front of the point will appear to move backward. The farther an object is from the fixation point, the faster it will seem to move.
    - Relative size:
        - If we assume that two objects are similar in size, most people perceive the one that casts the smaller retinal image as farther away
    - Linear perspective:
        - Parallel lines appear to meet in the distance. The sharper the angle of convergence, the greater the perceived distance
    - Interposition:
        - If one object partially blocks our view of another, we perceive it as closer.
    - Light and shadow:
        - Shading produces a sense of depth consistent with our assumption that light comes from above. If you invert this illustration, the hollow will become a hill.

Motion Perception:

- Phi phenomenon:
    - an illusion of movement created when two or more adjacent lights blink on and off in quick succession

Perceptual Constancy:

- perceiving objects as unchanging (having consistent color, brightness, shape, and size) even as illumination and retinal images change.
- Color constancy:
    - perceiving familiar objects as having consistent color, even if changing illumination alters the wavelengths reflected by the objects.

Perceptual adaptation:

- in vision, the ability to adjust to an artificially displaced or even inverted visual field.