Sensation

Sensation	refers specifically to the stimulation of our sensory organs.
	physical things in the world stimulate our sensory organs.
	occurs when special receptors in the sense organs—the eyes, ears, nose, skin, and taste buds—are activated, allowing various forms of outside stimuli to become neural signals in the brain.
	This process of converting outside stimuli, such as light, into neural activity is called transduction.

Sensory Thresholds

Ernst Weber	did studies trying to determine the smallest difference between two weights that could be detected.
Weber's Law	of just noticeable differences (jnd, or the difference threshold). A jnd is the smallest difference between two stimuli that is detectable 50 percent of the time, and Weber's law simply means that whatever the difference between stimuli might be, it is always a constant.
Gustav Fechner	expanded on Weber's work by studying something he called the absolute threshold
Absolute Threshold	is the lowest level of stimulation that a person can consciously detect 50 percent of the time the stimulation is present.
Subliminal Stimuli	Stimuli that are below the level of conscious awareness
	These stimuli are just strong enough to activate the sensory receptors but not strong enough for people to be consciously aware of them. Many people believe that these stimuli act upon the unconscious mind, influencing behavior in a process called subliminal perception.
Formula	$\Delta I/I = k$

Sensory Thresholds (cont)

where ΔI represents the smallest noticeable difference, I represent stimulus intensity, and k is known as Weber's constant

Signal Detection Theory

Definition	Signal Detection Theory is a psychophysical model that explains how humans make decisions based on sensory information.
	based on the idea that individuals may pick up on meaningful information, known as "signals," from noisy and ambiguous stimuli.
	is used when psychologists want to measure the way we make decisions under conditions of uncertainty, such as how we would perceive distances in foggy conditions
Four Outcomes	
Hit	A hit occurs when the observer correctly detects the presence of a signal and responds, "yes." It is considered a correct response
Miss	A miss occurs when the observer fails to detect the presence of a signal and responds "no" when the signal is actually present. It is considered an incorrect response.
False Alarm	A miss occurs when the observer fails to detect the presence of a signal and responds "no" when the signal is actually present. It is considered an incorrect response.
Correct Rejection	A correct rejection occurs when the observer correctly detects the absence of a signal and responds, "no." It is considered a correct response.

Sensory Receptors

Sensory Receptors	are specialized forms of neurons, the cells that make up the nervous system.
	Instead of receiving neurotransmitters from other cells, these receptor cells are stimulated by different kinds of energy—for example, the receptors in the eyes are stimulated by light, whereas the receptors in the ears are activated by vibrations. Touch receptors are stimulated by pressure or temperature, and the receptors for taste and smell are triggered by chemical substances.
	Each receptor type transduces the physical information into electrical information in different ways, which then either depolarizes or hyperpolarizes the cell, causing it to fire more or to fire less based on the timing and intensity of information it is detecting from the environment.

Habituation and Sensory Adaptation

Habituation	Some of the lower centers of the brain filter sensory stimulation and “ignore” or prevent conscious attention to stimuli that do not change. The brain is primarily interested in changes in information.
	Although they actually are hearing it, they aren’t paying attention to it.
	it is the way the brain deals with unchanging information from the environment.
Sensory Adaptation	is another process by which constant, unchanging information from the sensory receptors is effectively ignored.

Habituation and Sensory Adaptation (cont)

In habituation, the sensory receptors are still responding to stimulation but the lower centers of the brain are not sending the signals from those receptors to the cortex.	The process of sensory adaptation differs because the receptor cells themselves become less responsive to an unchanging stimulus—garbage odors included—and the receptors no longer send signals to the brain.

Eye Diagram