

Psychology 351 - Pomerantz Psychology of Perception, Week 2

Philosophical Issues in Perception, Basic Facts about Perception

Three key questions:

Mind-body relationship, origins of knowledge, what is to be explained?

Mind- body problem

Is mind matter? Does mind matter?

Monism: mind and body are one

Materialism, idealism, radical skepticism

Dualism: mind and body are two separate entities

Interactionism, epiphenomenalism

Free will vs. determinism

Reductionism and emergent phenomena

Functionalism (hardware:software:: body:mind)

Epistemology: origins of knowledge

The Oracle; the environment; genes; nowhere?

Realism: critical vs. naive

What must be explained?

Behavior, phenomenology, underlying processes?

Converging operations

Mental representation: Psychophysical isomorphism, complementarity

Ten facts about perception: Perception...

1. **Is limited.** We detect only a slim portion of the information and energy around us: [Frequency Spectrum](#), [Infrared Scene](#), [Mite](#), [Powers of Ten](#), [Edgerton Bullet](#), [Gallopig Horse](#).

2. **Is selective.** Of that information we do detect, we can attend to only a small fraction at any one moment: cocktail party phenomenon
3. **Requires memory.** Advanced perceptual systems store perceptual memories and then match inflowing sensory information against those memories to allow recognition and prediction.
4. **Is not entirely veridical** (trustworthy). We experience illusions that reveal how normal, faithful perception works: [Hermann Grid](#), [Spiral Illusion](#), [Simultaneous Contrast](#), moon illusions, “[optical](#)” illusions (most illusions aren’t optical in origin.)
for more, see [Illusionworks](#) and the PBS site www.pbs.org/wnet/brain/illusions/index.html
5. **Takes time.** We do not perceive the world in real time but at a slight delay, as neural processing unfolds: flicker, [Metacontrast \(slowed down\)](#)
6. **Corresponds more to the distal than to the proximal stimulus.** We perceive the invariant properties of the world around us, not the fleeting and accidental properties resulting from viewpoint, illumination, etc. [Shepard Boxtops](#), [Adelson Shadow Effect](#)
7. **Involves the active organization of sensory information.** We don’t receive information passively but piece it together into a model. [Hexagram of Spots](#), [R. C. James Photograph](#)
8. **Focuses on change, not on steady-state** information: disappearance of [stabilized images](#), adaptation, McCollough Effect. Adaptation to steady state is the norm in perceiving both external stimuli (e.g., brightness, loudness) and internal (emotional states like happiness).
9. **Involves both bottom-up and-top down processing.** Bottom up focuses on sensory information flowing from receptors to the brain; top down focuses on hypotheses and predictions generated in the brain and on feedback from the brain back down to the receptors. Mismatches between bottom-up and top-down (i.e., between what we expect to perceive and what we actually perceive) attract our attention.
10. **Is based on our brain’s model of the world** – an internal representation of distal reality. It is this model that we perceive, not the world itself, with missing bits of sensory information filled in., [Necker Cube](#), [Subjective Necker Cube](#). Attention is drawn to mismatches between our model and incoming stimulation.

