

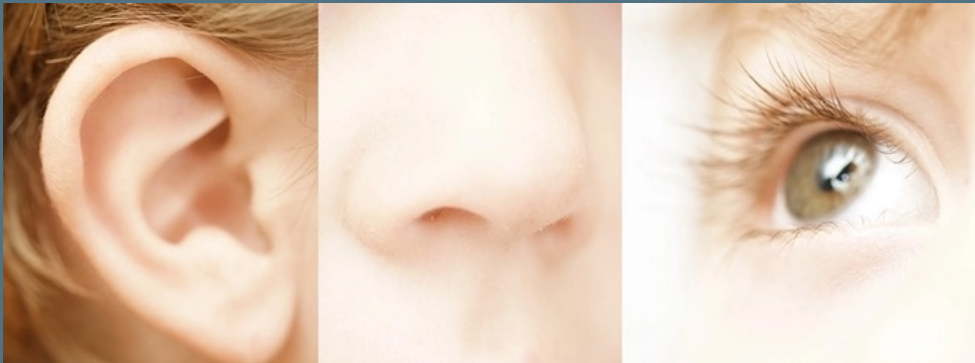
Overview:

- Distinguishing Sensation and Perception
- The Sensory Process
- The Problem of Coding

Distinguishing Sensation and Perception

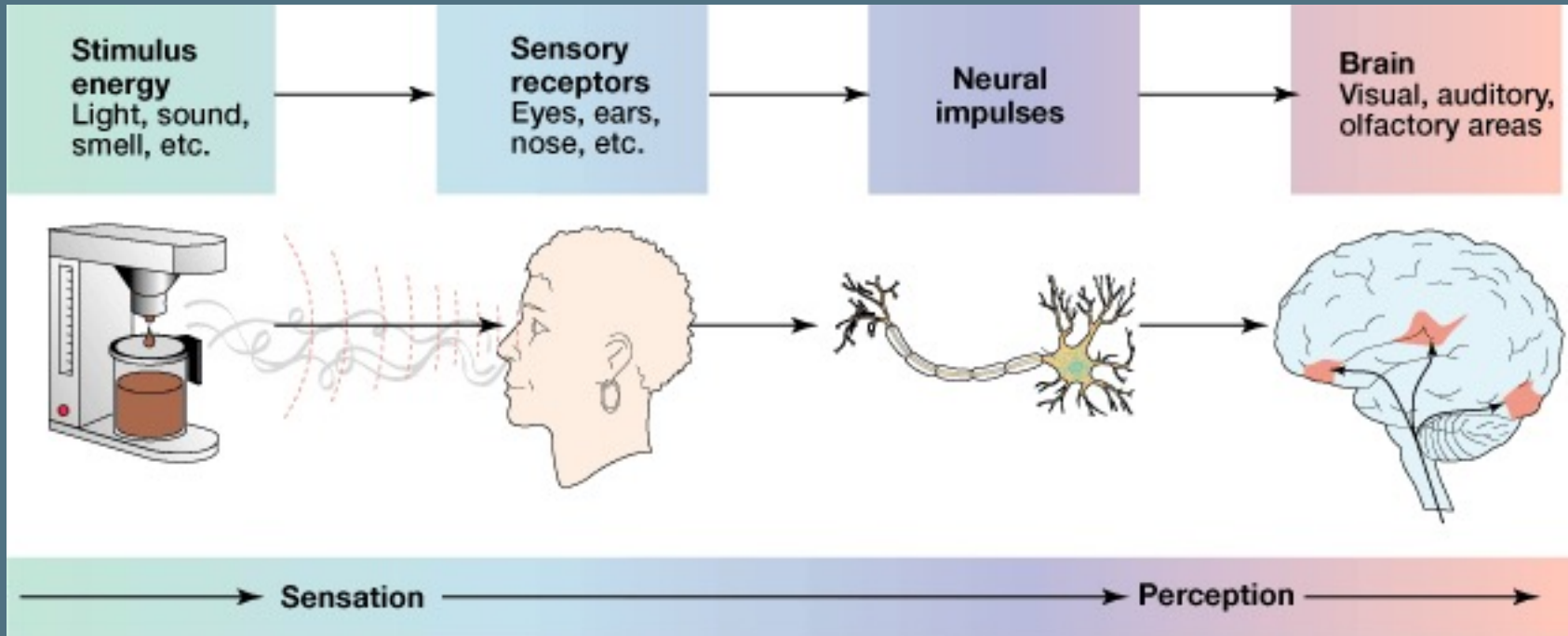
Week 2

- Sensation and perception both involve complex neural processes and take up a substantial portion of the brain's cerebral cortex.
- Sensations (qualia) are primitive mental states or experiences induced by sensory stimulation.
- Perceptions are complex, organized, and meaningful experiences of objects or events.



Distinguishing Sensation and Perception

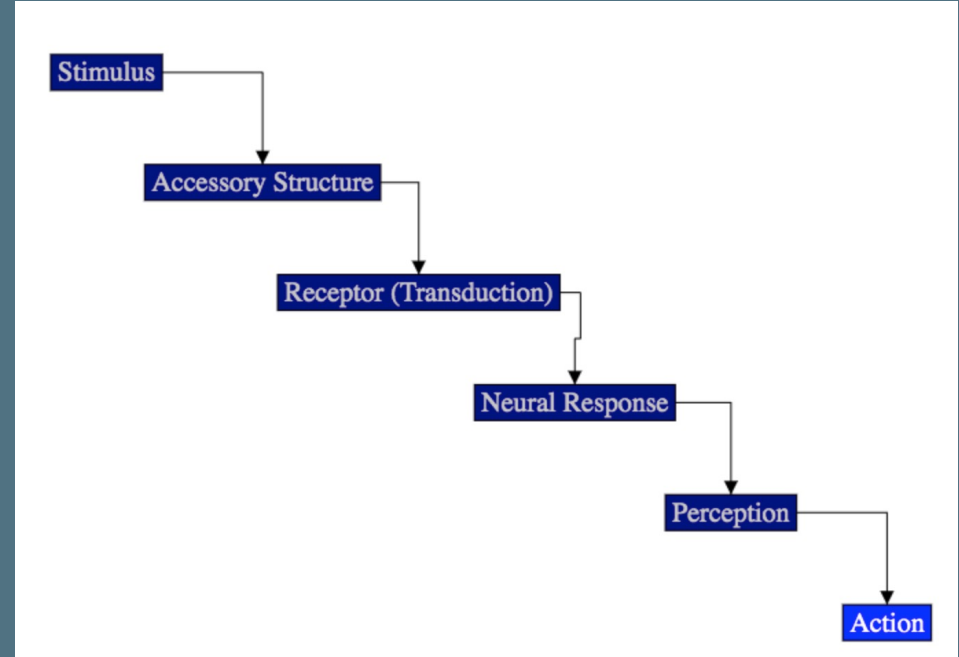
Week 2



The Sensory Process

Week 2

- The first step occurs when the *stimulus* is modified by an *accessory structure* (like the lens of the eye).
- *Transduction*, the transformation of incoming energy into neural activity, takes place at the *sensory receptors*.
- Receptors stimulate sensory neuron activity, which carries messages* to the thalamus and then to the cerebral cortex.



* Except smell

Explore this process in an online demo

The Sensory Process

Week 2

- Changes in stimuli produce the greatest receptor response.
- Stimuli that remain at a constant level cause receptors to *adapt*.

Have you ever stepped into a hot bath and found it cool after a few minutes? Attended a loud concert and then gotten used to the noise? Put on perfume but stop noticing it after a few minutes? That's sensory adaptation!



- Coding happens after transduction.
- *Coding* transforms an object's physical characteristics into a pattern of neural activity that identifies those characteristics.
- Each sensory system only produces codes for that one sense – this is called the *doctrine of specific nerve energies*.



Try it: Close both eyes and press (gently!) on one eyelid. Did you see light? That's because **any** stimulation of the receptors in the eye will produce the sensation of light.