

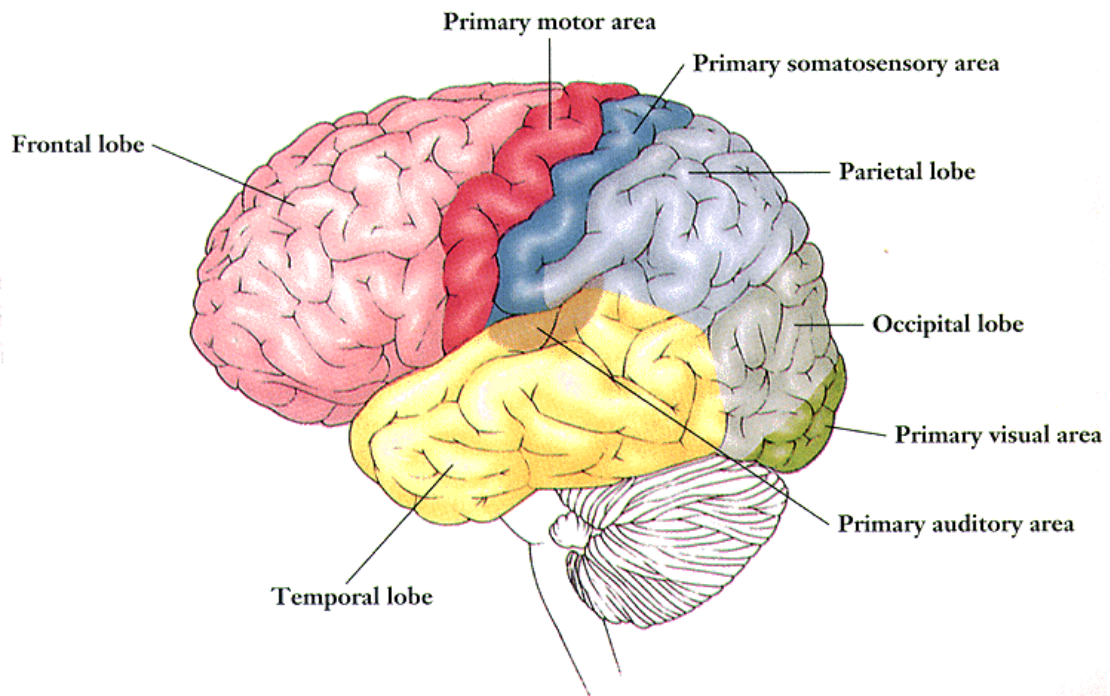
## Introduction: The Senses, Neural Coding, Modularity and Psychophysics

### **Sensation- Transduction**

- Transformation from one form of energy into another
- Sense organs- photo (vision), mechanical (tactile, audition, self-motion) and chemical (taste, olfaction)

**Action potential:** Electrical impulses travel down the axon

**Synaptic transmission:** Neurotransmitters travel across synapse causing electro-chemical in the post-synaptic neuron



### **Wilder Penfield 1950s**

- Penfield stimulated exposed brain of alert patients during surgery
- Used a small probe to deliver slight electrical stimulation
- Different locations evoked different memories, sensations or muscle twitches

### **Psychophysics**

- The world is not always as it appears
- Maps the relationship between the physical and psychological (perceptual) world

Higher thresholds = poorer sensitivity

Higher threshold = less sensitive

Lower threshold = more sensitive

### **Web-Fechner Law**

- The **Weber–Fechner law** is a proposed relationship between the magnitude of a physical stimulus and the intensity or strength that people feel.
- Just noticeable difference increases in proportion to the intensity of the stimulus