

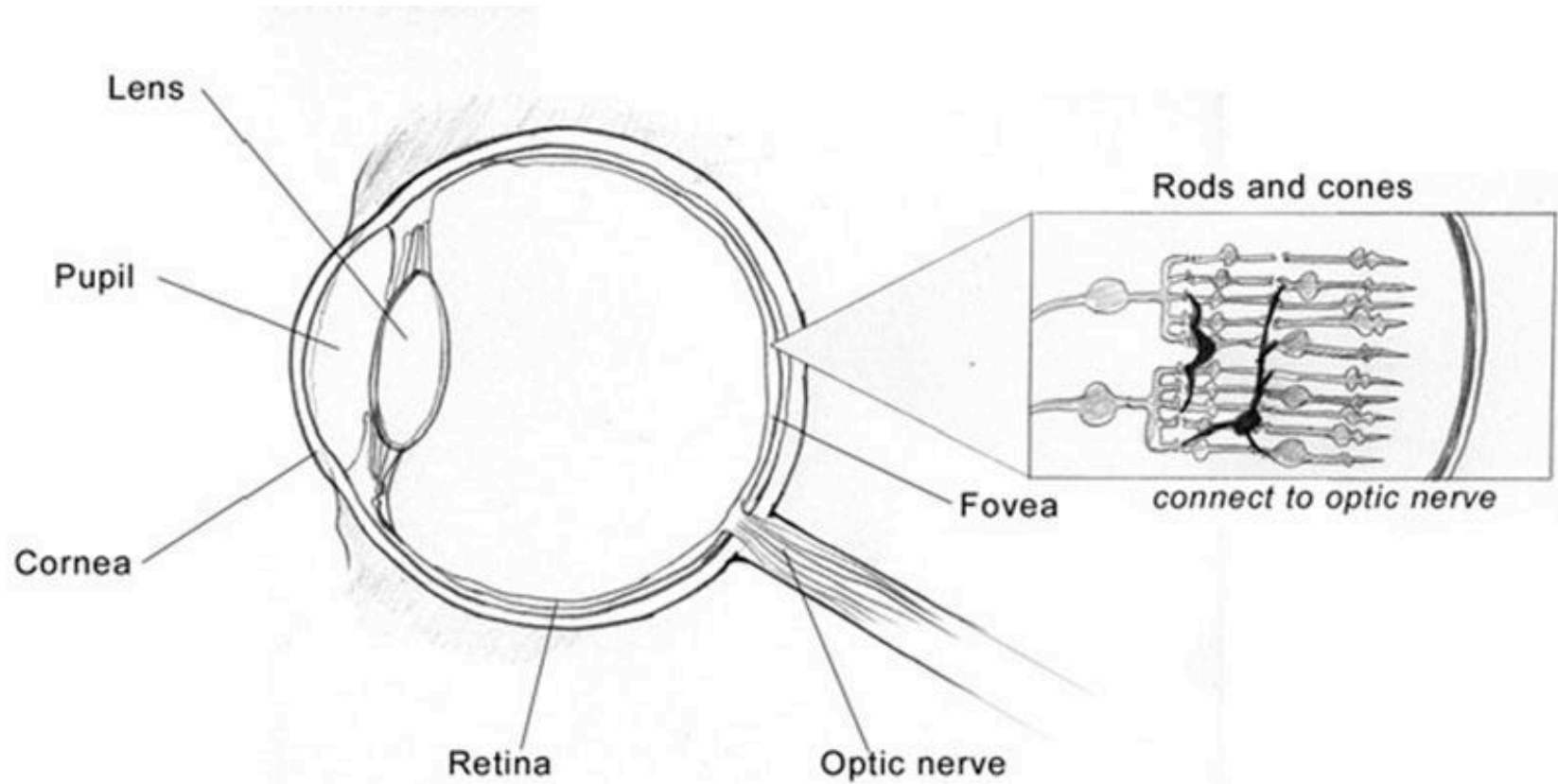
# HUMAN BODY INPUT | OUTPUT

VIST 308

# Sensory System

- Visual
- Auditory
- Somatic/Kinesthetic
- Olfactory (smell)
- Gustatory (taste)
- Vestibular

# Visual System



# Visual System Examples

- Ambient Lighting System
- Philips Ambilight

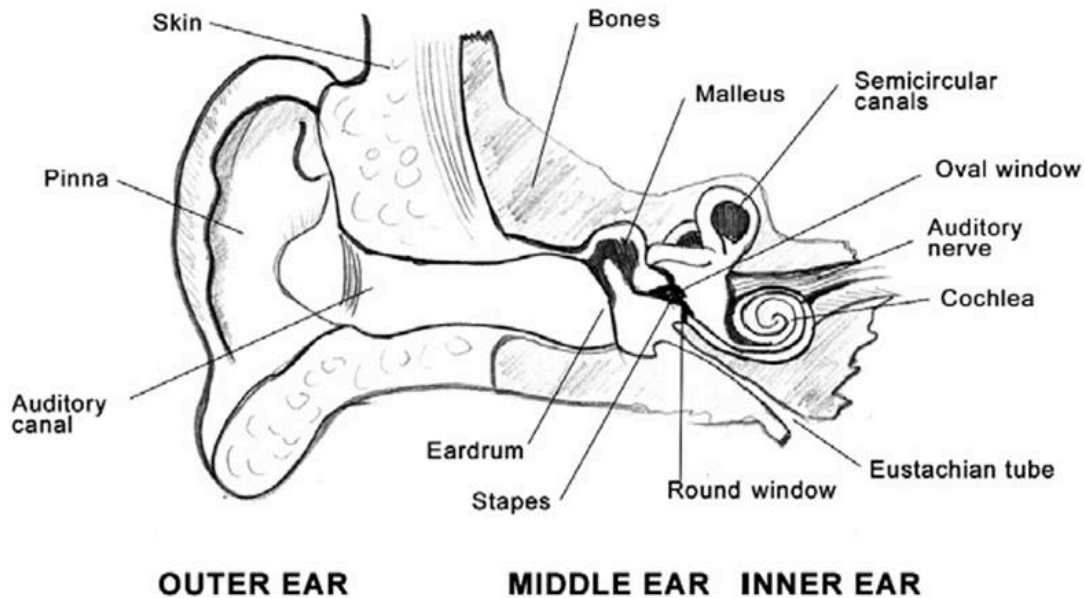


# Visual System-Examples

- Phantom Limb Syndrome Treatment
- By Vilayanur S. Ramachandran MD, PhD

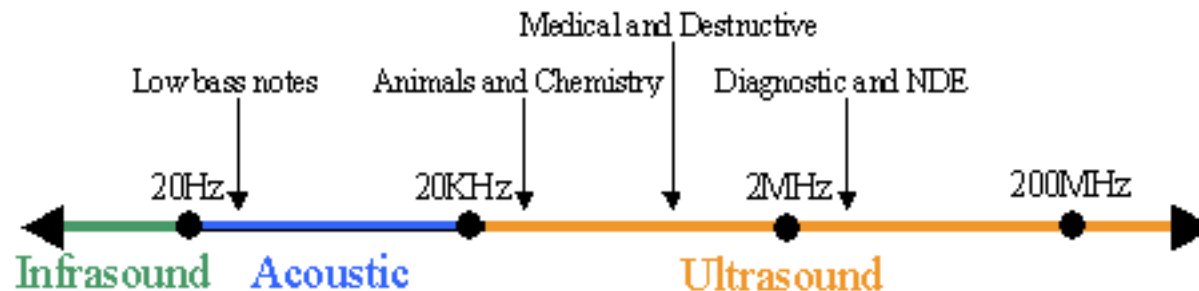


# Auditory System



# Auditory System- Perception

- Ear can select specific frequencies, detect loudness, pitch and timbre
  - ▣ Hearing range 20-20,000 Hz
- Not audible to ear



- ▣ Infrasonic range
- ▣ Ultrasonic range
- Sound waves can affect feeling/emotion

# Somatic & Kinesthetic System

- Somatic Sense

- Sensory system associated with the body
- Skin
- Internal organs
- Proprioception

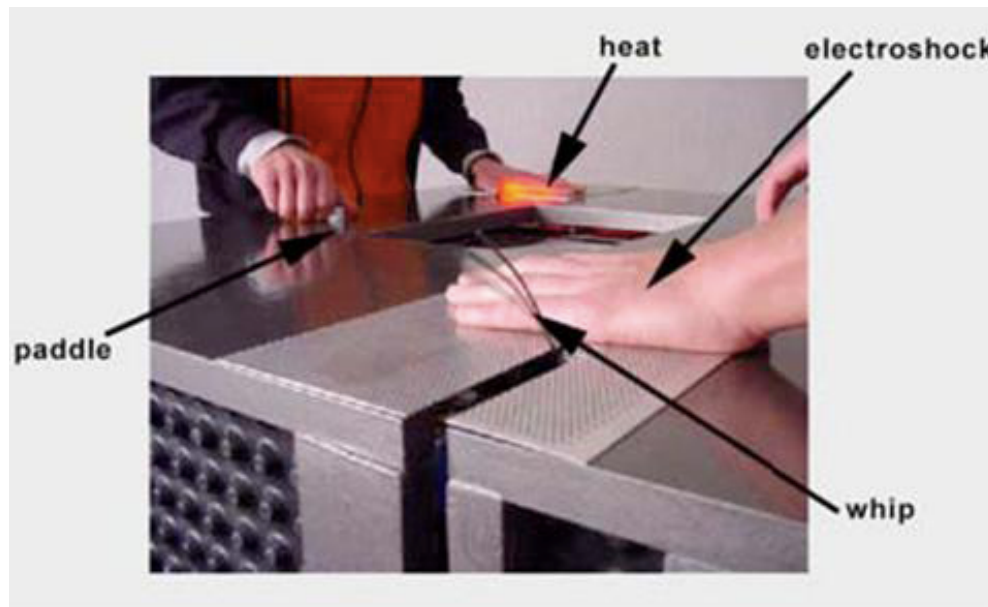


# Somatic & Kinesthetic -Perception

- Light touch and pressure, vibration, surface discrimination
  - ▣ Form, texture, firmness
  - ▣ Tickling sensation
  - ▣ Wind
- Pain
- Temperature
  
- Proprioceptive perception
  - ▣ Limb position
  - ▣ Movement, force

# Somatic -Example

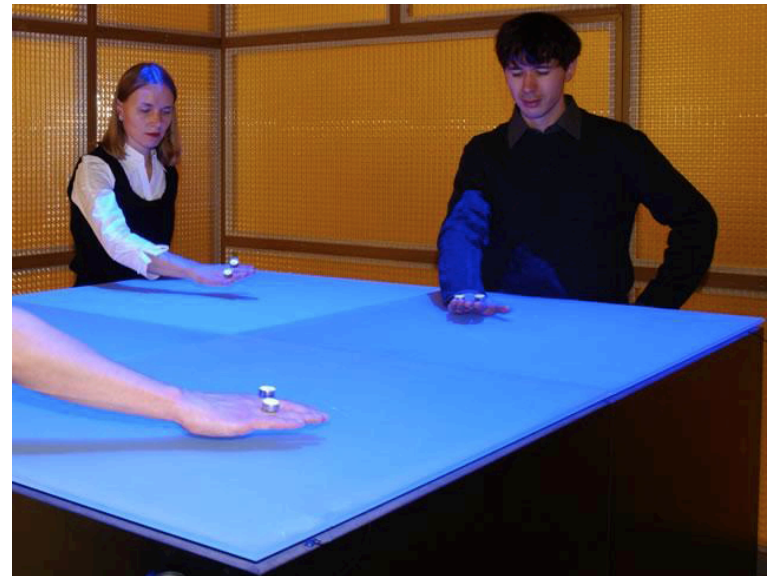
- Pain Station
  - ▣ Two person console
  - ▣ Electro shock, heat, whipping:
  - ▣ Bad performance → Pain



# Somatic, Kinesthetic -Examples

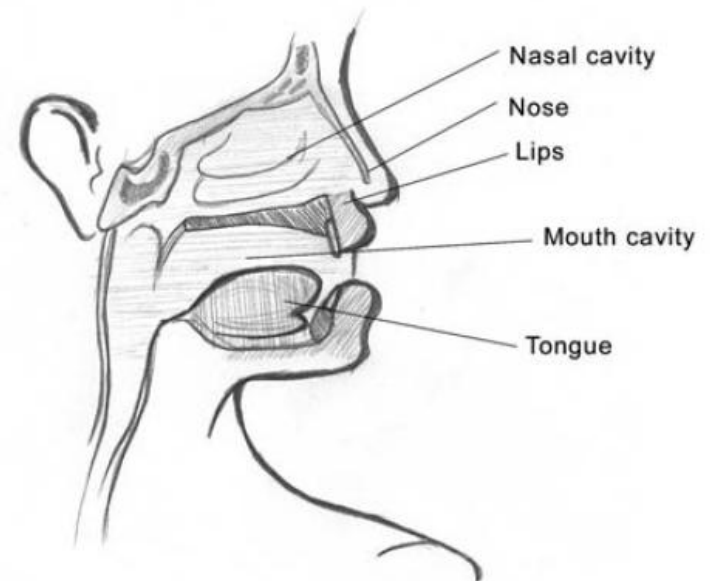
## □ Nano-Scape

- ▣ Christa Sommerer & Laurent Mignonneau, 2002
- ▣ Magnetic field, magnet on sensor
- ▣ Invisible nanospace can be explored through haptic information



# Olfactory Sense

- ❑ Strongly connected to emotion/memory
- ❑ Significant variance in individuals ability to differentiate ordors
- ❑ Complex smells are easier to remember



# Olfactory Sense -Examples

- Hanahana: an interactive image system using odor sensors by Yasuaki Kakehi



# Olfactory Sense -Examples

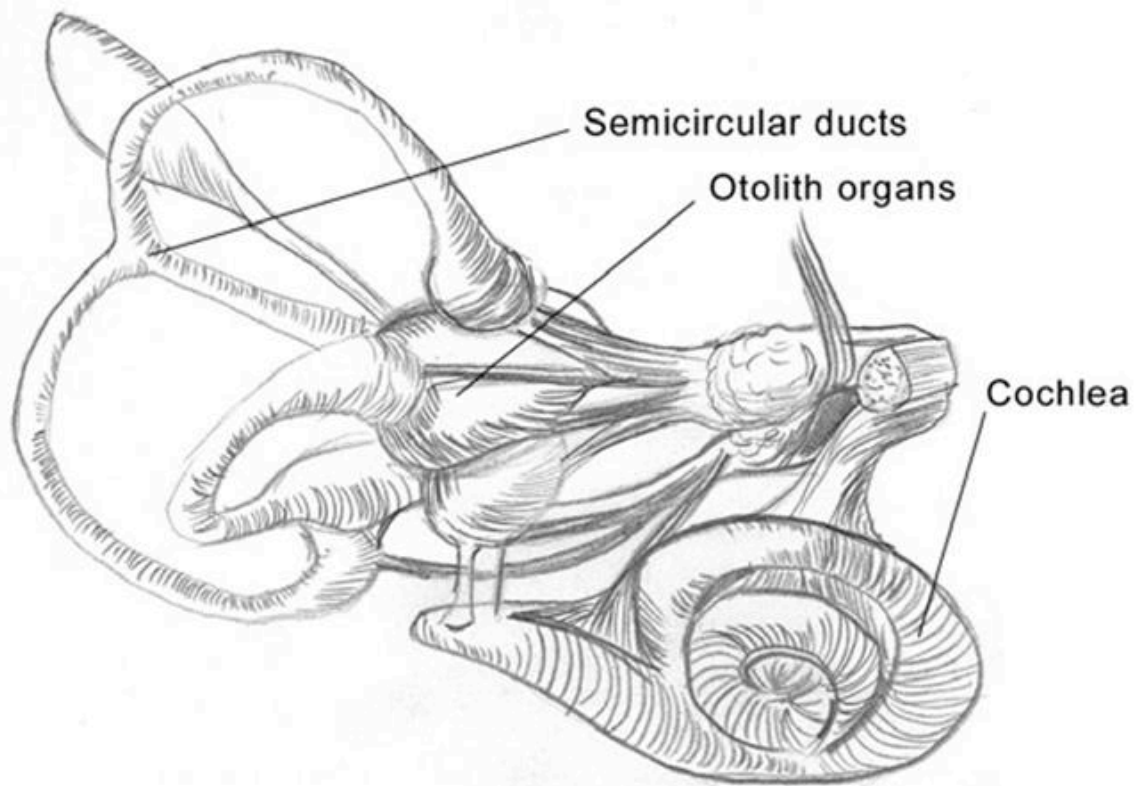
- Smart Second Skin Dress
  - ▣ Body Sensors sense mood and change smell



# Gustatory System

- Possible classification of tastes (Henning, 1916)
  - Sweet
  - Sour
  - Salty
  - Bitter
  - Umami

# Vestibular System





# Vestibular System -Examples

- The Legible City by Jeffrey Shaw
  - ▣ Biking through virtual environments
  - ▣ Getting visual input via head-mounted display or projector
  - ▣ Matching visual and vestibular cues (real motion cues)



# Vestibular System -Examples

## □ Virtusphere



# Quiz

---

- What is the sensory system associated with the body includes skin senses, kinetic senses and the internal organs ?