

## Section 8: Consciousness

Is Consciousness the key problem remaining in all of science?

Complication: we cannot define it completely yet.

Is your computer conscious? Your dog? The person sitting next to you?

Several aspects:

1. Consciousness = Self-awareness (self-consciousness)? Cf. camera pointed back to ourselves, mirror dot experiment (Gallup)

2. Cartesian theater: subjective experience.

The unity of consciousness: Only one object of attention at a time

(note the problem of defining an object)

Intentionality: consciousness is usually "headed somewhere" toward a goal

Selectivity is another key feature (unattended items: not consciously processed)

3. Perhaps low-level brain activity is unconscious; high level exceed threshold into consciousness. Reflexes/subroutines perform fine at subconscious level; but deliberate problems solving, or cases where subroutines fail demand conscious control. Sometimes there is dual control, as with breathing.

See Scientific American debate between Koch and Greenfield

Neural basis of consciousness is still unknown. Is it:

1. Which neurons are firing (which part of brain; which specific cluster)?
2. How intensely are they firing (only intense regions reach consciousness)?
3. When are they firing (only neurons firing in certain rhythms are conscious)?

Multiple states of consciousness (most have unique EEG signatures):

1. Coma
2. Vegetative state
3. Minimally conscious
4. Sleep: Stage 1 (theta), 2 (spindles/K complex), 3 (Delta), REM  
Purpose: restoration vs. evolutionary protection?
5. Hypnotic state
6. Drowsy
7. Alert
8. Hyper-alert / drug-induced states

The famous Terry Schiavo case (see FABBS video)

Freudian theory (more later in course – personality theory and psychoanalysis)

Sleep state: purpose of sleep, adverse effects of sleep/dream deprivation

Dream content: Freudian theory, practice, random activation, defragging hypothesis.

Drug-induced states of consciousness.

Subliminal perception: Buy Coke, 2008 presidential campaign

Unconscious priming results

