CONSCIOUSNESS

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What is Consciousness?

CONSCIOUSNESS: *a person’s subjective experience of the world and the mind.*

- Defining feature: experience—which is essential to being human
- Consciousness is private, it is personal experience
- If it’s personal, how can it be studied?
  - Consciousness is studied through: unconscious processes, altered states (sleep, dreams, intoxication from alcohol or drugs, hypnosis and meditation).

*But who/where are YOU really?*
The Mysteries of Consciousness

Psychologists have the unique pleasure of studying subjects — attempting to understand what it means to be human.

- **PHENOMENOLOGY**: *how things seem to the conscious person* (in their understanding of mind and behavior).

- Two mysteries of consciousness:
  - 1) The PROBLEM OF OTHER MINDS
  - 2) The MIND/BODY PROBLEM
THE PROBLEM OF OTHER MINDS: the fundamental difficulty we have in perceiving the consciousness of others.

- How do you know that other people are conscious? What if their experience of the world is different from yours (color perception, for example)?
- People judge other minds based on the capacity for experience and agency

The MIND/BODY PROBLEM: the issue of how the mind is related to the brain and body.

- “The minds is what the brain does”—Minsky
  - Activities in the brain precede the activities of the conscious mind (movement is seen as a result of brain activity rather than a conscious decision to move, crazy right?!).
  - Is your brain and body leading your mind?!

Maybe...
FOUR BASIC PROPERTIES OF CONSCIOUSNESS:

1) **INTENTIONALITY**: consciousness is ABOUT something.
2) **UNITY** (resistance to division): multitasking=bad news in the realm of consciousness
3) **SELECTIVITY**: the ability to filter/tune out
   - **Cocktail party phenomenon**: people tune in one message even while they filter out others nearby.
4) **TRANSIENCE** (the tendency to change): the mind wanders from moment to moment due to how much information the human brain is capable of holding—hence, the **stream of consciousness**
LEVELS OF CONSCIOUSNESS:

- **MINIMAL CONSCIOUSNESS**: consciousness that occurs when the mind inputs sensations and may output behavior.
  - **Example**: someone pokes you while you’re sleeping and you turn over.

- **FULL CONSCIOUSNESS**: the level of awareness in which you know and are able to report your mental state.
  - **Example**: aware of your mental state (happiness on a beautiful day, etc.)

- **SELF-CONSCIOUSNESS**: the level of consciousness in which the person’s attention is drawn to the self as an object.
  - **Example**: embarrassment
    
    * Most animals do not seem to have self consciousness, chimpanzees are an exception.
CONSCIOUS CONTENTS:

● EXPERIENCE SAMPLING TECHNIQUE: reports of people’s conscious experience.
  ○ CURRENT CONCERNS: repeated thoughts.

● MENTAL CONTROL: the attempt to change conscious states of mind.
  ○ Example: don’t think about future to avoid anxiety.

● THOUGHT SUPPRESSION: the conscious avoidance of a thought.
  ○ Example: think about something else.

● REBOUND EFFECT OF THOUGHT SUPPRESSION: the tendency of a thought to return to consciousness with greater frequency following suppression (super ironic!).

● IRONIC PROCESSES OF MENTAL CONTROL: ironic errors occur because the mental process that monitors errors can itself produce them.
  ○ Works OUTSIDE of consciousness.
The Unconscious Mind

*Sigmund Freud:* his psychoanalytic theory viewed conscious thought as surface of a much deeper mind made up of unconscious processes

- **Dynamic unconscious** - an active system encompassing a lifetime of hidden memories (ex. hidden sexual thoughts about parents, urges to do harm upon an infant, etc.)
  - thought that people keep hidden from other and may not even acknowledge themselves
- Your unconscious is a force to be held in check by *repression*
- **Repression:** a mental process that removes unacceptable thoughts and memories from consciousness and keeps them in the unconscious

- *Without repression,* a person would be urged to say any/everything that comes to mind with a sudden impulse
Modern View of the Cognitive Unconscious

- **Freudian Slip** - speech and error lapses of the unconscious mind. Thoughts that you try and deny but come out unintentionally (ex. calling your spouse by an ex’s name)

- **Cognitive Unconsciousness** - includes all the mental processes that are not experienced by a person but that give rise to the person’s thoughts, choices, emotions, and behavior.
  
  - Indication that the Cognitive Unconscious is at work is *subliminal perception*

- **Subliminal Perception** - when thought or behavior is influenced by stimuli that a person cannot consciously report perceiving.
  
  - Subliminal perceptions occur but *do not* play a huge part on behavior
  
  - Ex: In 1957, a marketer claimed to have increased concession sales when the words “Eat Popcorn and “Drink Coke” briefly flashed on screen during a movie. This
Unconscious Mind Cont.

Show Video: http://sakai.claremont.edu/portal/site/CX_mtg_74816/page/7fc64596-9e74-4ccc-a72b-8bc3c54e2a20
Dream Consciousness

- Five Main Characteristics:
  - Emotion
  - Thought
  - Sensation
  - Acceptance
  - Remembering
Dream

- Day Residue- dream about mundane activities that reflect prior experiences
- Does not include episodic memories (complete daytime events replayed)
- Average college student has 24 nightmares per year
Dream Theories

- Search for dream meaning goes back to biblical figures
- First Psychological Theory of Dreams - Freud
  ○ proposed that dreams represent hidden wishes
- Activation-Synthesis Model
  ○ dreams are produced when the mind attempts to make sense of random neural activity during sleep
The Dreaming Brain

- While we sleep, specific areas in the brain show activation during REM sleep
- Brain areas responsible for fear/emotion work overtime while we are dreaming (amygdala)
- During REM sleep, brain inhibits movement except for the eyes
The Dreaming Brain Pt. 2
Sleep Cycle

- Circadian Rhythm: a natural occurring 24-hour cycle of sleeping and waking
  - We are 25.1 hour people living in a 24 hour world

- Regular pattern of changes in electrical activity
  - Waking: high frequency (beta waves)
  - Relaxing: low frequency (alpha waves)
Sleep Cycle cont.

- Regular pattern of changes in electrical activity
  - sleeping have 5 steps
    - first stage of sleeping = theta waves
    - second = sleep spindles of k complexes
    - third and fourth = slow wave which are delta waves
    - fifth = REM which are sawtooth waves
5 Stages of Sleep

Stage 1: 4-5%
- Light sleep.
- Muscle activity slows down.
- Occasional muscle twitching.

Stage 2: 45-55%
- Breathing pattern and heart rate slows.
- Slight decrease in body temperature.

Stage 3: 4-6%
- Deep sleep begins.
- Brain begins to generate slow delta waves.

Stage 4: 12-15%
- Very deep sleep.
- Rhythmic breathing.
- Limited muscle activity.
- Brain produces delta waves.

Stage 5: 20-25%
- Rapid eye movement.
- Brainwaves speed up and dreaming occurs.
- Muscles relax and heart rate increases.
- Breathing is rapid and shallow.
Fun Facts about REM

- **REM**: deep sleep characterized by rapid eye movement and high level of brain activity
  - mind is as active as it is when awake
  - pulse quickens, blood pressure raises, and raised sexual arousal
  - no movement, except rapid eye movement
  - 80% of people can report their dream, when awaked in REM
EEG and REM cycles together

Stages of Sleep

0 1 2 3 4

REM

= partial awakening with body movements

10pm 11pm 12am 1am 2am 3am 4am 5am 6am 7am
How much sleep do we need?

- Newborns will sleep 6 to 8 times in 24 hours
  - 16 hours total
- 6 year old needs 11-12 hours of sleep
- Average is 7 to 7.5 hours
  - we get 1 hour of sleep to 2 hours of being awake
Can we tolerate less?

- World Record for staying up goes to Randy Gardner (17 years old) conducted in 1965
  - 264 hours and 12 minutes (stayed up)
    - 11 days and 24 minutes
  - 14 hours and 40 minutes (recover fully)

- all-nighters
  - you forget everything

- lack of sleep can be fatal or lead to other side effect
Sleep Disorders

- Insomnia: difficulty in falling asleep or staying asleep
  - 15% adults complain
- Sleep apnea: is a disorder in which the person stops breathing for brief periods while sleeping
  - over 10 seconds of not breathing
Fact or Fiction
Sleep Disorder

● Somnambulism: person arises and walks around while sleeping
  ○ sleepwalking
  ○ common in children
    ■ peaking in ages between 11-12
  ○ it is safe to wake up sleepwalkers

● Narcolepsy
  ○ sudden sleep attacks occur in middle of sleep
  ○ genetic basis
Sleep Disorder

- Sleep Paralysis: experience of waking up unable to move
  - associated with narcolepsy
  - experience pressure on chest

- Night Terror: abrupt awakening with panic and intense emotional arousal
  - boy between 3-7
Drugs: Artificial Inspiration

- The Doors of Perception by Aldous Huxley describes his experience while on mescaline. “A world where everything shone with the Inner Light, and was infinite in its significance.”

- Psychoactive Drugs: chemicals that influence consciousness or behavior by altering the brain’s chemical message system.

  These drugs are used to either:

  - Increase activity of neurotransmitter → AGONISTS
  - Decrease activity of neurotransmitter → ANTAGONISTS
- Devastating consequences, but high rates of addiction.
- Study on rats showed that 90% given free access to cocaine overdosed after a 30-day study.
- People usually don’t become addicted to drugs after one use. Many factors are involved, one being DRUG TOLERANCE: tendency for larger drug doses to be required over time to achieve the same effect.

FIGHTING THE URGE

- PHYSICAL DEPENDENCE: pain, convulsion, hallucinations, etc. after stopping. PSYCHOLOGICAL DEPENDENCE: strong desire to return to the drug when physical symptoms are gone.
Types of Drugs

- **Depressants**: alcohol, barbiturates, toxic inhalants.
- **Stimulants**: Amphetamines, MDMA, MDA, Nicotine, Cocaine
- **Narcotics**: opium, heroin, morphine, methadone, codeine, hydrocodone, oxycontin
- **Hallucinogens**: LSD, mescaline, psilocybin, PCP, ketamine, DMT, (MDMA)
- **Marijuana**
Depressants

- Reduce the activity of the central nervous system.
- Alcohol “King of Depressants”. Increases GABA activity. Has many different effects depending on the person and the situation.
- How can this be? Two theories → Expectancy Theory and Alcohol Myopia.
  
  Expectancy: alcohol effects are produced by people’s expectations of how alcohol will influence them in particular situations.

  Alcohol Myopia: alcohol hampers attention, leading people to respond in simple ways to complex situations.

Drugs such as Valium and Xanax are in this category including inhalants such as huffing spray paint fumes and nitrous oxide (Whip-its)
Stimulants

- Substances that excite the central nervous system, heightening arousal and activity levels.
  Include: caffeine, amphetamines, nicotine, cocaine, modafinil, and MDMA.
- Increases levels of dopamine and norepinephrine. Increase alertness/activity producing euphoric senses of confidence and motivation to get things done.

- Feelings of euphoria, empathy, and connection to surrounding people. Body can have a hard time regulating temperature -- sweaty people at raves.
Narcotics

- Drugs derived from opium that are capable of relieving pain.
- Include: heroin, morphine, methadone, codeine
- Induce feelings of well-being, relaxation, but sometimes stupor and lethargy. Highly addictive, produce both tolerance and dependence.
- Highly appealing because they are external mimics of the brain’s own internal system of relaxation and well-being.
- Brain produces endorphins/endogenous opioids → neurotrans that are close to opiates. Endorphins help brain cope with pain/stress so opiates reduce pain by artificially flooding the endorphin receptors. This reduces the receptors effectiveness and endorphin production. Leads to serious withdrawals.
Hallucinogens

- Drugs that alter sensation and perception, often causing hallucinations.
- Profound changes in perception. Sensations are unusually intense, objects move/change, patterns/colors appear, exaggerated emotions (depending on drug), example “I’ve become the legs of a chair!”.
- Dramatic and unpredictable, creates a psychological roller-coaster ride.
- Hallucinogens are the class of drugs that animals won’t self-administer (besides humans)
- Doesn’t induce tolerance or dependence and overdose is rare.
Marijuana

- derived from the leaves and buds of the hemp plant.
- mildly hallucinogenic effects
- euphoric with heightened senses of sight, sound, and the perception of a rush of ideas.
- Active ingredient is THC, also contains pain relieving component of CBD.
- Receptors that normally respond to neurotrans Anadamide (involved in regulation of mood, memory, appetite, and pain perception) also respond to THC.
- Addiction potential is low.
Hypnosis

- Hypnosis:
  - altered state of consciousness characterized by suggestibility and the feeling that one’s actions are occurring involuntarily.
Hypnosis cont.

- Induction:
  - Behavior suggestions can induce in some people a state of mind that makes them susceptible to suggestions.
    - “Your arms are getting heavy.”
    - “Your eyelids are slowly closing.”
Hypnosis cont.

- Susceptibility:
  - Not everyone is susceptible to hypnosis.
  - A person's own judgment is an indicator of a person's susceptibility.
  - Strongly influenced, Moderately Influenced, Entirely Unaffected
Hypnosis cont.

- Hypnotic Effects:
  - Making people do things
  - Loss of Memory
  - Hypnotic analgesia:
    - the reduction of pain through hypnosis in people who are hypnotically susceptible
Both can be understood as altered states of consciousness.

Meditation: the practice of intentional contemplation.
- associated with religious traditions and practiced outside religious contexts.
- involves contemplation that may focus on a specific thought, sound or action, or it may be an attempt to avoid any focus.
- influences EEG recording of brain waves (alpha waves) that are associated with relaxation.

Ecstatic religious experiences
- may have a basis in the same brain region (the right anterior temporal lobe) associated with some forms of epilepsy.