What are you happy to lose everyday but happier to find the next?

Consciousness

- again, we find a psychological concept that is nearly impossible to define
- an awareness of our world and our own mental processes

Ok that might work. But even it does, what about other people's consciousness? We might know we know our minds, but do we know other people are conscious?

What about dogs?
Chimps?
Robots?

And yes, zombies? we don't know if zombies, truly exist, but since you don't know another person's consciousness, you don't know if they are not a zombie! I mean a zombie can walk, pursue a goal and do most things we do, but are they alive? Aware?

What about simply defining it as "ourself" who we the little person in our head that takes in info, processes the info and then acts (Nash, 2008).

Ok, if we go with that, who is in that person's head?

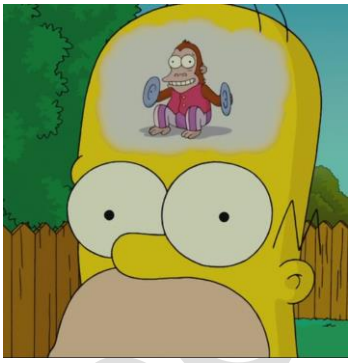
Cotard's syndrome – belief that a person is dead, half-dead, or a part of their body is not working

Theory of mind = empathy for others - insight for self

Autism?

Is it chemical? Some drugs can take away a person's consciousness. Can some drugs give a zombie consciousness?

Is your thought right now just a combination of 180 neural transmitters? If you give someone else the exact same chemical mix will they have your awareness



It is not an "on or off" thing there are different types of consciousness – but if we can't define one, how can we define subsections?

There is one student right now who is not reading this because that student is daydreaming. What type of consciousness is that?

- The brain is working but usually on familiar things- default network
- This can be bad if the person is overly worrying about the same thing constantly
- Can you not day dream? – thought suppression
- Very tough to do – thought suppression rebound try to not think of your breathing pattern. ☺
    - mindfulness

OK, if we can't define consciousness, what about unconsciousness?

- Try not to read the following word. Try to sound it out or to use bottom up processing instead of having your unconscious just hand it to you.

HELLO

History

1. Rene Descartes – Cartesian Theatre
    - Dualism – again the mind body problem
        - Most people like this - religion
    - Monism (materialism) mind is brain

    Modern view: The brain is what the mind does or vice versa

2. Wilhem Wundt through introspection wanted subjects to be able to report their own changing structure states of consciousness
3. William James wrote about functions of normal consciousness
4. Sigmund Freud argued about consciousness vs. unconsciousness
5. B.F. Skinner – Behaviorism - 1950's -there is no consciousness, only Stimulus / Response

More recently with advanced medical techniques: MRI, PET, CAT, EEG, fMRI

- We can begin to study physiological *representations* of consciousness but a *representation* is not consciousness
- The insula and prefrontal cortex are the brain parts involved in consciousness

The unconscious mind is active. Of course we don't know how active

- Freud said the unconscious mind was intelligent, motivated and steered our conscious mind but then -- -Freud said a lot of things- especially about your mother.

-The unconscious is full of nasty, freaky things that we must never know so we repress it
- Freudian Slip – when you say one thing but mean your mother

- Modern psychologist agree the mind is active but aren't sure if it is as clever as Freud's depiction of it.
    1. Maybe it is a "dumb servant" that does the routine work that we have already learned well … walking,
    2. But the problem is when the dumb servant makes decisions that are better left to our rational conscious mind.

Four basic properties - ADD

1. Intentionality being directed toward an object
   awareness – can be directed
2. Unity – resistance to division - cannot multitask
   Except for *easy* tasks attention can be *divided*
   a. practice makes tasks easy
      a. cerebellum B.B.B.
      b. procedural memory
   b. neural connections – neurons that fire together wire together
      plasticity - long term potentiation
      Multitasking – depends on the effort & practic of each task. Driving & cell phones

3. Selectivity to include some objects but not others
   - filtering process – ADD is trouble with ignoring stuff not a lack of attention
   - Dichotic listening – people cannot pay attention to two different messages at the same time
     - Bottleneck Donald Broadbent as soon as the two stimuli become complex or require thought we can't do both Broadbent's filter
   - But say the word "sex" or mention someone's name and they notice it.
   - cocktail party phenomenon
     1. can you select the target of your attention
     2. a person is aware of others conversation
     3. bit of awareness even when our spotlight is on one thing, we can react to others *outside* the spotlight

4. Transience – the mind wanders
   William James "stream consciousness".

Attention = consciousness = awareness?

- Consciousness as a spotlight –
- Imagine attention as a battery, the more things you ask it to do, the less power each one gets!

ADD – difficulty selecting targets – like 10 people all talking to you at once

- It is not a deficit in attention!

Stroop Task

Red	Red
Blue	Blue
Black	Black
Green	Green
Yellow	Yellow
Purple	Purple
Brown	Brown

LEVELS OF CONSCIOUSNESS

1. consciousness – right now -
2. preconscious - in memory waiting to be accessed
3. subconscious – dumb servant idea
4. unconscious – Freud's idea -deep down can't be accessed but still affecting us
5. non-conscious – life functions – coma
    a. coma is a reduced state of awareness
        i. there are different types of coma
    b. little cerebral cortex activity
    c. can be caused by lots of things
    d. one man awoke after 19 years!

What is the relationship between conscious mind and physical brain?

Mental processing without consciousness

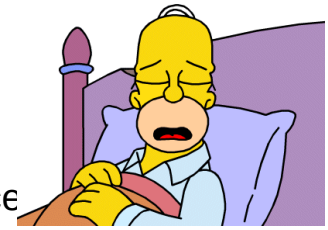
1. Embodied Cognition – unconscious perceptions trigger bodily reactions which trigger conscious thoughts and feelings
2. (chemical) state dependent learning – process things emotionally
3. context dependent – think different in different "settings"
3. Recovery room – under anesthesia -
4. Priming getting someone ready to think in a certain way
5. Mere exposure effect - people like that which they have seen / heard before – even subconsciously

- more often a person sees a stimulus, the more they will like it
- "oh, snap" "yadda yadda" "fetch" "I feel you" "dawg" "don't go there" "you're fine" "sicing it" "ratchet" Swerve fifty cant fade geekin' gleesh frindle

6. Anterograde Amnesia – pin study

7. Prosopagnosia – people who have dain bramage and can not recognize familiar faces – still have some physiological reaction to familiar people face blindness

8. Blind sight – if damage done to visual processing area, the optic nerve can still be connected to other parts of the brain. People who cannot see things still react to visual stimuli



SLEEP

EEG patterns go from fast rhythms of low amplitude to slow rhythms of high amplitude

Sleep is active – electro encephalagraph

EEG measures electrical activity on the surface brain – and measures consciousness (sort of)

All people need sleep just as they need food

Primitive animals don't need as much – sharks, reptiles

Sleep deprived people

- drive like they are drunk
- have hormone irregularity (insulin, thyroid, leptin)
- increased pain perception
- decreased immune response.

Beta waves – person is awake 12+Hz
Low amplitude - high frequency

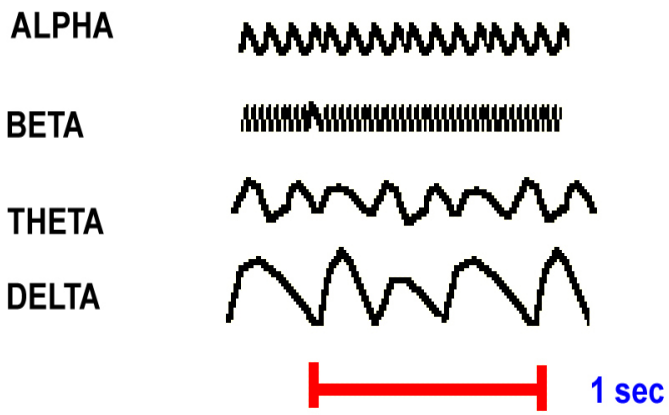
Alpha waves – very relaxed 8-12Hz
High amplitude – low frequency

Theta Sleep 4-7Hz

Delta Waves - largest - slowest 2-3Hz

Mu Waves? - in motor strip when we're Relaxed 8-12 Hz

- Related to intentionality & mirror neurons



All people have all waves all the time

Biofeedback – an E.E.G. based machine that teaches people to change their brain waves for right level of consciousness

NON R.E.M. SLEEP

NREM 1 (stage 1)

- hypnogogic transition from wakefulness to sleep
- waves are irregular high frequency - low amplitude
- ALPHA & THETA = irregular brain waves
- hallucinations –
- spasm as you fall asleep
  - hypnagogic
  - hypnic jerk
  - myoclonic jerk
- slowed breathing

NREM 2 (stage 2)

- Sleep spindles = bunches of EEG waves
- K complexes = big dip/spike in waves
- THETA waves

Some researchers merge these into NREM 3

Stage 3 – "pass through stage" – light sleep to deep sleep Some DELTA some THETA

Stage 4 D.D.D. of sleep is the Deepest of Non R.E.M. sleep

- DELTA waves
- Drool
- Cataplexy – muscle weakness paralysis
- Narcolepsy
- Motor neurons are inhibited – G.A.B.A.

- Long time in beginning of night shorter towards morning
- Good for repairing hard exercise
- When lots of parasomnias happen – sleepwalking
- In sleepwalking people rarely trip- so that means people can process information unconsciously

R.E.M. SLEEP – SACCADES - Paradoxical

Characteristics

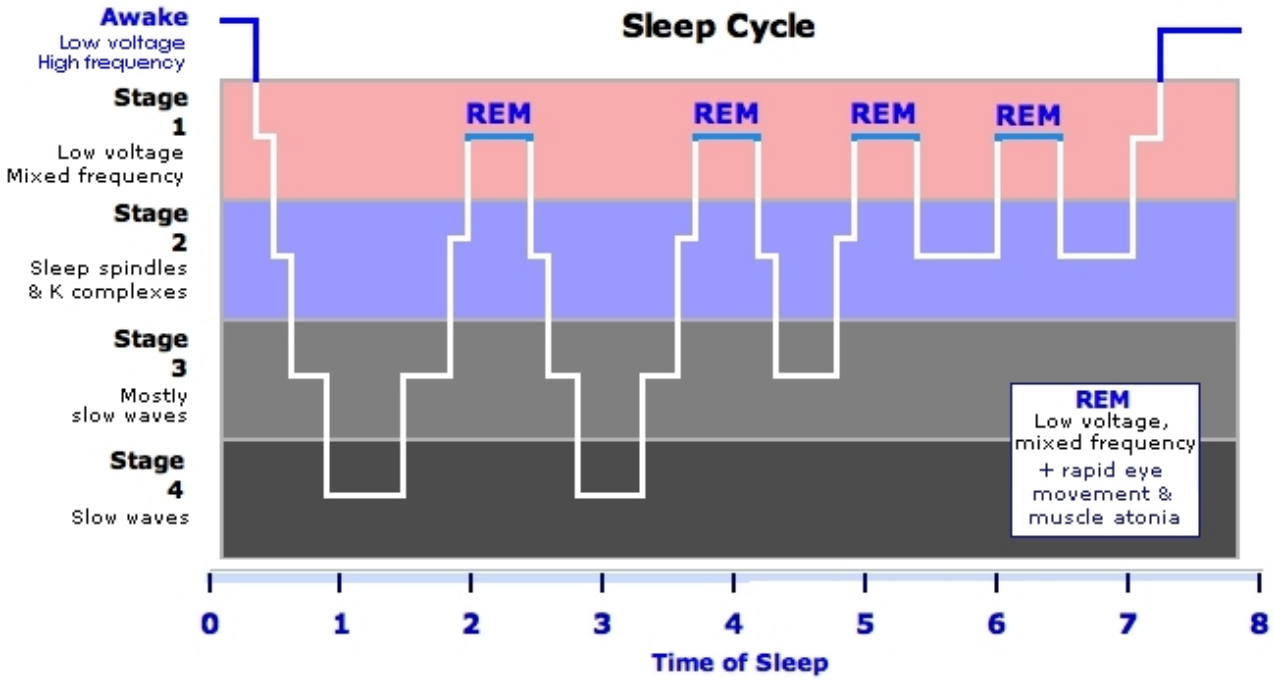
- Increasing sleep period towards morning
- EEG waves are Alpha but harder to wake than in stage 4
- Skeletal muscles are paralyzed but twitching in face and hands
- genital arousal
- increased heart rate, rapid breathing
- muscles relax to the point of paralysis
- hard to wake
- Frontal Lobe (logic) inhibited
- activity in the motor cortex,
- efferent signal is blocked by the brainstem,
- activity of occipital and temporal brain areas –"story"

Electrooculograph an instrument to measure eye movements

REM is when synapses are formed

Entrainment -

- new neural connections = synapses
- rapid brain waves,



Theories of sleep **1.** Adaptive theory cave people needed to be awake for 16 hours for our species to survive – sleep is the mechanism that keeps the species from injuring itself when it is not involved in critical functions

2. Conserving energy – for most species, except Americans, calories are difficult to get. Sleep conserves the precious resource

3. Restorative function – sleep is necessary

1. restore body- stage 4
2. restore mind - R.E.M
3. new neural connections – what was learned in day
4. remove waste – delete wasteful info

PONS – heartbeat, breathing, vital life functions
Reticular activating system – controls activity level of brain while awake
Ventrolateral preoptic nucleus – activity level of brain while asleep
Suprachiasmatic nucleus Along with hypothalamus and

Melatonin – hormone that helps you sleep
Hypocretin – hormone that helps you stay awake
Narcolepsy

Sleep is one of the best defenses against stress.

Circadian Rhythms – 24 hour cycle internal clock

- Teen hormones seem to mess with normal rhythm of sleep cycle
- There is a correlation between bad grades and lack of sleep – confounding variables?
- Jet lag – east to west is worse
- Seasonal affective disorder – depression that happens in the winter due to longer nights (UV light).

REM rebound repay yourself half of what you lost

DREAMS

Activation-synthesis theory = (Crick and Mitchison) random firing of nerves that create dreams, dreams have no deep meaning- just an accidental occurrence we try to understand.

Spiritual – is this a way to connect with something bigger
Cognitive - help you solve a problem
Bio – brain self-cleaning

Sigmund Freud: 1st major psychologist to consider dreams meaningful.

Manifest/Surface Content: what your dream had in it
Latent Content: what it symbolized

a. Parents as emperors, empresses, kings, & queens
b. Children (siblings) as small animals
c. Birth as water
d. Death as a journey
e. Tunnels – female genitals
f. Snakes – male genitals

Dream therapy (Cartwright) people need the right amount of emotion in their dreams to help them be healthy in their emotional life

Characteristics of Dreams

1. Intensely feel emotion
2. Dream Thought is illogical no continuity of time, place, or cause
3. Sensation is fully formed
4. Uncritical acceptance of thoughts and images (don't think)
5. Difficulty remembering
6. related to outside world – except at the end of the night
7. usually more negative than positive
8. rarely about sex - men dream about sex more often

Theories of Dreams

A. spiritual world
   1. **Common Freudian dream symbols include**:

2. **Freud's analysis of dreams**: an art, not a science – no scientific method was used to prove theory

PARASOMNIAS – category of freaky sleep things - Non REM

- Night terrors (incubus attacks) – in stage 4
  Usually not remembered
- Nightmares = REM
- Sleepwalking = sonambulism stage 4 – no real clear theory as to why
  Wife with a whistle - behavioralism
- Restless Leg syndrome
- Teeth Grinding - Bruxism
- Sleep Eating
- Sleep Apnea – stopping breathing due to airway being blocked
  - cataplexy
  - Snoring!!
    1. babies
    2. obesity, age - increased blood pressure
- Insomnia – correlation but no cause to mental illness
  Some healthy insomniacs can do well on as little as 3 hours

- Lucid Dreaming – being able to control your dreams- be a super hero, rap star, athlete, model, each night. Your own fantasy land. – It is possible with training

- Narcolepsy – falling asleep into stage 4 suddenly
  Can be reduced with medication →
  Genetic? What advantage is it to the species?
  Viral?

- Sudden Infant Death Syndrome (SIDS) – baby dying,
  - usually related to being smothered by blankets
  - sometimes neurological

R.E.M. behavior disorder – people act badly during sleep
Dude attacking his wife