

General Psychology

Consciousness

These are general notes designed to assist students who are regularly attending class and reading assigned material: they are supplemental rather than exhaustive and reflect general concepts.

I. The Scope of Consciousness

Consciousness expands the mental abilities it embraces, helping to connect one operation with others.

A. States of Consciousness

1. **States of consciousness** are variations in *what* mental processes occur, independent of how much awareness you have of them. It is qualitative distinction of how your mind is currently working. Examples may include sleep, wakefulness, drug-induced states, meditation and hypnosis.
2. In active states, you intentionally direct and manipulate mental activity. In passive states, your mind wanders and allows various mental processes to "come to mind."
3. People are most often in a waking state, where attention and arousal dictate the mental processes reaching awareness at any moment.

B. Levels of Consciousness

Levels of consciousness are variations in the quantity (i.e., how much?) of awareness one has for whatever mental events are occurring.

1. The mental events that you are currently aware of exist at the **conscious level**.
2. At the **nonconscious level** are mental events that cannot be experienced consciously.
Example: We cannot directly "know" about brain modulation of blood pressure.
 - a. In *biofeedback*, you learn which conscious sensory cues accompany a nonconscious process. This permits you to indirectly infer when nonconscious events occur.
3. The **cognitive unconscious** contains mental activities that are not conscious but can either become conscious or influence conscious experience.
 - a. **Preconscious level** processing is not itself consciously experienced, but can easily and quickly be brought into conscious experience.
Example: If asked what color your socks are, you can easily bring the answer into consciousness, even though you were not thinking about this information prior to the question.
 - b. Sigmund Freud hypothesized an *unconscious level*, containing impulses (mostly sexual and aggressive), unacceptable thoughts, feelings, and memories of which one is seldom directly aware. Non-Freudians call this the **subconscious level**, in which important, but normally inaccessible, mental processes take place.
Example: As a violent crime victim, you may not recall the mugger's car license plate, but with the help of special techniques, you may be able to later recall it.

C. Mental Processing Without Awareness

The impact and limitations of consciousness can be seen by studying mental processing that occurs without consciousness.

1. Under anesthesia, people may still sense the world and form lasting memories, but without awareness of having done so.
2. One can learn certain cognitive problem-solving strategies without even being aware that the

strategies exist.

3. In cases where blindness has been caused by damage to the primary visual cortex, other pathways allow visual processing, but without awareness - a condition known as *blindsight*. People with this condition say they see nothing, but can track moving images and name the color of lights when asked to guess.
4. *Priming* occurs when you respond to a stimulus faster or more accurately after having encountered it before. It occurs even if you cannot consciously recall the previous stimulus encounter.
5. The *mere exposure effect* is the tendency to like previously encountered stimuli more than new ones, even if you are not aware of which stimuli are new to you and which are old.

D. Thinking Critically: Can Subliminal Messages Change Your Behavior?

1. What am I being asked to believe or accept?
Stimuli presented without conscious awareness can be sensed and perceived and can influence your actions without your consent.
2. Is there evidence available to support the claim?
In some experiments, stimuli are presented too rapidly to be consciously recognized while subjects consciously view other material. Such subliminal stimuli can affect subjects' judgments, physiological responses, and emotional reactions to the material that has been consciously experienced. Self - help tapes, in which subliminal messages try to help people improve memory to quit smoking, however, have only the reports of satisfied customers to support their effectiveness.
3. Can that evidence be interpreted in another way?
Many commercial claims of subliminal effects have been publicity stunts using fraudulent data. Other claims are sometimes *Type 1 errors*, in which data is collected over and over again until a desired result finally occurs by chance. Double-blind, placebo-controlled studies of self - help tapes (in which experimenters and subjects do not know who listens to tapes with subliminal messages versus the same tapes with no such messages) show that commercial self - help tapes are no more effective than "placebo" versions. Indeed, many self - help tapes may rely entirely on placebo effects - subjects show effects if they just think the tapes will be helpful, regardless of the tapes' actual subliminal content.
4. What evidence would help to evaluate the alternatives?
Additional controlled studies are needed for all forms of alleged subliminal perception.
5. What conclusions are most reasonable?
Subliminal perception does not occur, but effects only general measure (e.g. arousal), and only temporarily. It has virtually no potential for mind control - it does not cause any specific actions and does not create needs that do not already exist.

E. Focus on Research: Subliminal Messages in Rock Music

1. What was the researcher's question?
People claimed that evil and satanic messages were being delivered subliminally in rock music through backward masking. Two psychologists, John Vokey and Don Read, examined whether listeners were influenced by a subliminal message and whether the message was easily heard or was more a product of active construction.
2. How did the researcher answer the question?
Vokey and Read played backward recordings of the 23rd Psalm and "The Jabberwocky" and asked participants to determine if the content would be meaningful if played forward.
3. What did the researcher find?
Participants could not discriminate sense from nonsense, could not categorize the type of statements, and not show any priming effects.
4. What do the results mean?
Participants did not consciously or unconsciously understand the messages nor were they influenced by the backward messages.
5. What do we still need to know?

Researchers would like to understand the persistence of the incorrect belief that backward messages in music or speech influence behavior.

F. Altered States of Consciousness

1. In an *altered state of consciousness*, changes in mental processes are sufficient for you or the others to note significant differences from the waking state.
 - a. Different cultures place different values on waking versus altered states.

II. Biological Rhythms

Periodic fluctuations of physiological and psychological functioning.

1. Awareness of ourselves and the environment

A. Circadian rhythms - occur approximately every 24 hours

1. Example: sleep-wake cycle
2. Exists in plants, animals, insects, and humans
3. Can be studied by isolating objects from environmental time cues
4. Several "clocks" in the brain synchronized by overall coordinator, or "super clock," in the suprachiasmatic nucleus in the hypothalamus
 - a. Synchrony influenced by neurotransmitters and hormones
 - b. Melatonin is secreted by the pineal gland in the dark, help keep the biological clock in phase with the light-dark cycle.
5. Change in routine may cause internal desynchronization - Jet Lag

B. Infradian rhythms - occur less frequently than every 24 hours

1. Seasonal Affective Disorder (SAD)
 - a. Some people become depressed every winter
 - b. Primary treatment for SAD has been light therapy (phototherapy)
2. The menstrual cycle and moods - approximately 28 days

C. Ultradian Rhythms - occur more frequently than every 24 hours

1. Examples:
 - a. Appetite - stomach contractions every 90 minutes
 - b. Sleep cycle - a 90 minute cycle/4-6 times a night
2. Theories about why we sleep
 - a. Sleep may be for physical recuperation
 - b. Sleep may be necessary for the brain to function normally.
 - (1) Sleep may play a role in learning and memory
 - (2) Sleep may provide time for "mental housekeeping" - brain remains quite active during sleep
3. The realms of sleep - sleep is not an unbroken state of rest
 - a. Rapid Eye Movement (REM) sleep alternates with non - REM sleep throughout the night
 - b. Ultradian cycle occurs, on average, every 90 minutes
 - (1) REM periods are characterized by
 - (a) Duration of a few minutes to an hour, average 20 minutes
 - (b) Active brain waves resembling wakefulness
 - (c) Limp muscles (paralysis)
 - (d) Penis and clitoris may become engorged, vaginal lubrication may occur
 - (e) Dreams most likely to occur during REM sleep
 - (2) 4 Non-REM stages, each deeper sleep than the previous, each associated with a particular brain wave pattern

- (a) Alpha waves - not a sleep stage - when you are relaxed with your eyes closed, before you go to sleep
- (b) 1 - small, irregular brain waves; light sleep
- (c) 2 - high - peaking waves called sleep spindles (jerky movements)
- (d) 3 - delta waves begin
- (e) 4 - mostly delta waves and deep sleep (sleep walking, sleep talking, night terrors)
- (3) After stage 4 the cycle reverses and REM sleep recurs following stage 1
- (4) REM and non - REM sleep alternate throughout the night
- (5) The purpose of REM sleep is unclear, but if people are deprived of REM sleep they will compensate on subsequent nights (people will spend twice as long in REM sleep the next night).

III. Exploring the Dream World

A. Characteristics of dreams

1. Dreams take place in "real time"
2. REM dreams are more vivid than non - REM dreams
3. Lucid dreams - dreams in which people know they are dreaming
 - a. Dissociation occurs - dreaming and observing part of consciousness
 - b. Some have learned to intentionally produce lucid dreams and control them
 - c. There is some evidence that eye movements in lucid dreams correspond to the action in the dreams

4. Sleep Disorders

- a. **Insomnia** - the most common sleeping problem, occurs when a person is tired during the day because of trouble falling asleep or staying asleep
- b. In **narcolepsy**, a person switches abruptly from an active, sometimes emotional waking state to a few minute of REM sleep.
- c. In **sleep apnea**, breathing stops, briefly awakening the sleeper to restart breathing. In the morning these awakenings are not remembered, but since they disrupted the normal sleep cycle, victims do not feel well rested.
- d. **Sudden Infant Death Syndrome (SIDS)** occurs when a sleeping infant stops breathing and suffocates. SIDS may be caused by brain systems regulating breathing or by cigarette smoke exposure. About half of the SIDS cases may be caused by accidental suffocations caused when infants sleep face down on a soft surface.
- e. **Sleepwalking** starts primarily in non - REM sleep, most commonly during childhood. Despite myths, there is n special danger to a sleepwalker.
- f. **Nightmares** are frightening dreams that occur in REM sleep.
- g. **Night terrors** - occurring in stage 4 sleep, are horrific dreams that abruptly awaken a person in a state of intense fear
- h. **REM behavior disorder** is a loss of the paralysis that usually occurs in REM sleep. As a result, a sleeper may appear to act out dreams, sometimes even attacking a sleep partner in the process.

B. Dreams as unconscious wishes

1. Freud - "royal road to unconsciousness"; all dreams meaningful
 - a. Manifest content - what we experienced and remember
 - b. Latent content - hidden, symbolic; the unconscious wishes
2. Many people disagree with Freud's interpretations

C. Dreams as problem solving

1. Reflect ongoing preoccupations of waking life

2. Symbols and metaphors of dreams that convey the meaning of the dream, rather than disguising it
- D. Fundamental Processing Theory - Dreams as a by-product of "mental housekeeping"
 1. Dreams are brief snippets from the ongoing process of sorting, scanning, and sifting through thoughts and memories
 2. Dreams could be "reverse learning," a way of weakening unneeded associations
 3. REM sleep may be associated with memory consolidation
- E. Activation-Synthesis Theory - Dreams as interpreted brain activity
 1. Dreams are the result of neurons firing spontaneously in the lower brain
 2. Dreams are not meaningful, but the cortex tries to make sense of them
- F. Dreams are a reflection of the collective unconscious
 1. Carl Jung
 2. Collective unconscious
 - a. Universal memory system that connects all of humanity (past, present, future)
 - b. Communicates through dreams
 - c. Great source of wisdom
- G. Conclusion - no single theory explains all facets of dreaming
- IV. Conscious-Altering Drugs
 - A. Cultures across the world have developed rituals aimed at altering states of consciousness
 1. Some people see this as a basic human need
 2. Use of psychoactive drugs is one way to alter states of consciousness
 - B. Classifying drugs
 1. Psychoactive drugs - substances that alter perception, mood, thinking, memory, or behavior by changing the body's biochemistry
 2. Classified according to effects on central nervous system and impact on behavior and mood.
 - a. Stimulants - speed up activity in central nervous system; includes cocaine, amphetamines, nicotine, caffeine (causes an individual to feel alert, confident, hyper, energetic)
 - b. Depressants (sedatives) - slow down activity in central nervous system; include alcohol, tranquilizers, barbiturates (causes an individual to feel drowsy, lethargic, and decreases inhibitions)
 - c. Opiates - mimic endorphins; relieve pain - include opium, morphine, heroine, methadone (produce euphoria)
 - d. Psychedelics - alter consciousness by disrupting normal perceptions of time and space - include LSD, mescaline, psilocybin
 - 5 types of "Trips"
 1. Psychotic - paranoia, frightening hallucinations, & delusions
 2. Psychodynamic - flashback or relive an earlier trauma
 3. Aesthetic - pleasant mind sensational experiences
 4. "Head" Trip - cognitive thoughtful philosophical
 5. Mystical or Peak Experience - includes aesthetic, cognitive, and a feeling of profound peace and unity with all of life
 - e. Anabolic steroids and marijuana - don't fit other classifications
 - (1) Anabolic steroids - synthetic derivatives of testosterone - psychological effects of these drugs are not clear.
 - (2) Marijuana - probably the most widely used illicit drug in North America and Europe - users' reactions vary

C. The physiology of drug effects

1. Can increase or decrease release of neurotransmitters, block reuptake, block effects of neurotransmitters by blocking receptors
2. Biochemical changes in the brain can produce cognitive or emotional effects, impair judgment
3. Repeated use of certain drugs can cause permanent brain damage
4. Repeated use of some psychoactive drugs may lead to tolerance (needing more over time) and withdrawal symptoms (upon ceasing of the drug)

D. The psychology of drug effects

1. Depend on a person's physical condition, experience with the drug, environmental setting, and mental set
2. Alcohol can provide an excuse for violent or other behavior
3. Expectations about the effects of drugs are important and are learned
4. Drug use and abuse are not the same

V. The Riddle of Hypnosis

A. Hypnosis = procedure in which the practitioner suggests changes in the sensations, perceptions, thoughts, feelings, or behavior of the subject

B. Characteristics

1. Not a sleeping state; person is fully aware and remembers the experience
2. Hypnotic responsiveness depends more on the efforts and the qualities of the person being hypnotized than on the skill of the hypnotist
3. Cannot force people to do something they don't want to do
4. Increases suggestibility, but only slightly; people will accept suggestions without hypnosis
5. Does not increase the accuracy of memory
6. Does not produce a literal reexperiencing of long - ago events, such as a person's own birth experience
7. Hypnotic suggestions are not just placebos; they have been used effectively for many medical and psychological purposes (help manage pain, reduce nausea in chemotherapy, & reduce the use of drugs and alcohol)

C. Theories of hypnosis

1. Hypnosis may be an altered state of consciousness
 - a. Hilgard suggests that hypnosis involves *dissociation*, a split in consciousness in which one part of the mind operates independently from others
 - b. There are no identifiable markers to characterize such a state and no objective evidence of such a state
2. Hypnosis may be a socio - cognitive process
 - a. According to this theory, the behavior of hypnotized people falls along a continuum of normal social and cognitive processes
 - b. Effects of hypnosis result from interaction between personal abilities and beliefs of the subject and the social influence of the hypnotist
 - c. Hypnotized person is playing a role, but is not "faking" or playacting; actions required by the role occur without conscious intent
3. Proponents of altered state and socio - cognitive theories agree that hypnosis does not create a *unique* altered state in which people can do things they could not otherwise do

VI. Meditation - techniques designed to create an altered state of consciousness characterized by inner peace and tranquility

A. Focus techniques

1. Narrow attention

2. Pure awareness
3. Mantra - soothing phase
4. Quiet environment and comfortable position

B. Effects

1. Lowered heart rate
2. Relaxed muscles
3. Lowered blood pressure
4. Reduces stress and anxiety
5. Improves physical health
6. Increases self-esteem