

““It is on the whole probably that we continually dream, but that consciousness makes such a noise that we do not hear it.”.

Carl Jung, Swiss psychiatrist, psychologist, and founder of Analytic Psychology, 1875-1961

“I love sleep. My life has the tendency to fall apart when I'm awake, you know?”

Ernest Hemmingway, American novelist and short-story writer, won the Nobel Prize for Literature in 1954, 1899-1961

Notes on Consciousness – Chapter 4

Essential Questions:

- How do psychologists define consciousness?
- What happens during the sleep cycle?
- What roles do REM and NREM sleep play in behavior?
- How does lack of sleep affect behavior?
- How do psychoactive drugs affect behavior?
- How do we know whether hypnosis is a real psychological phenomenon?

Unit Objectives:

- Define consciousness.
- Describe the different stages of sleep.
- Analyze the different theories of dreaming.
- Determine the common sleep disorders and their consequences.
- Differentiate between the different theories of hypnosis.
- Analyze why psychologists are suspicious of hypnotically enhanced memories.
- Describe psychoactive drugs and their effects.
- Differentiate among the different types of psychoactive drugs and their effects.
- Analyze the consequences of addiction, tolerance, and withdrawal.

I. Consciousness

A. *Consciousness* is the state of awareness of ourselves and of the world around us

1. State of consciousness – levels of consciousness ranging from alert wakefulness to unconsciousness

State of Consciousness	Explanation	Level of Alertness	Examples or Features
<u>Focused awareness</u>	a state of heightened alertness in which one is fully absorbed in the task at hand	High; fully awake and alert	Learning a new skill; watching an engrossing movie
<u>Drifting consciousness</u>	a state of awareness characterized by drifting thoughts or mental imagery (may lead to daydreaming)	Variable or shifting	Daydreaming, or letting one’s thoughts wander
<u>Divided consciousness</u>	a state of awareness characterized by divided attention to two or more tasks or activities performed at the same time	Medium; attention split between two activities	Thinking of other things while exercising or driving a car
<u>Unconsciousness</u>	A lack of awareness of one’s surroundings or loss of consciousness	Nil	Complete loss of consciousness with little or no awareness of the outside world; maybe caused by a blow to the head, anesthesia, or coma
<u>Altered states of consciousness</u>	States of awareness that differ from one’s usual waking state	Variable	Changes in consciousness associated with hypnosis, meditation, drug use, and sleep [Sleep – less aware but not totally unaware

B. *Altering Consciousness with Sleep*

1. Sleep-Wakefulness Cycle: Circadian Rhythm

- a. *Circadian rhythm* – internally generated patterns of body functions, including hormonal signals, sleep, blood pressure, and temperature regulation, which have approximately a 24-hour cycle and occur even in the absence of normal cues about whether it is day or night
- b. *Jet lag* – a disruption of sleep-wake cycle caused by the shifts in time zones that accompany long-distance air travel

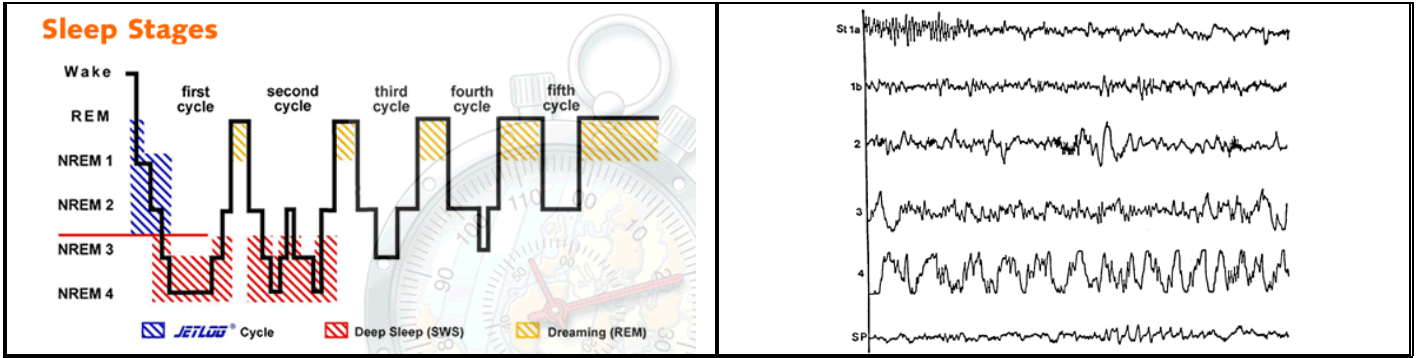
2. Why Do We Sleep? –

- a. Restorative
 - 1. Allow the body to repair and recover from the day
 - 2. Allows the brain to recover from exhaustion and overload
 - 3. Some people require more or less sleep to function
- b. Conserves energy
 - 1. It takes a lot of energy to keep us warm-blooded critters warm-blooded. Since energy consumption drops during sleep, maybe we doze so we don't have to eat all day long
- c. Helps you remember
 - 1. It gives the brain a chance to process the day's experiences and file them away in the memory. Thus we remember things learned just before sleep better than things learned earlier.
- d. Helps you forget
 - 1. Unlearning during sleep prevents the brain from becoming overloaded with knowledge
- e. Keeps you out of trouble
 - 1. According to this theoretical position, prehistoric mankind adapted the pattern of sleeping in caves at night, because it protected humans from species physiologically suited to function well in the dark, such as saber-toothed tigers.
 - 2. modern research shows that people who get between 7 & 8 hours of sleep are less likely to be obese

3. Stages of Sleep

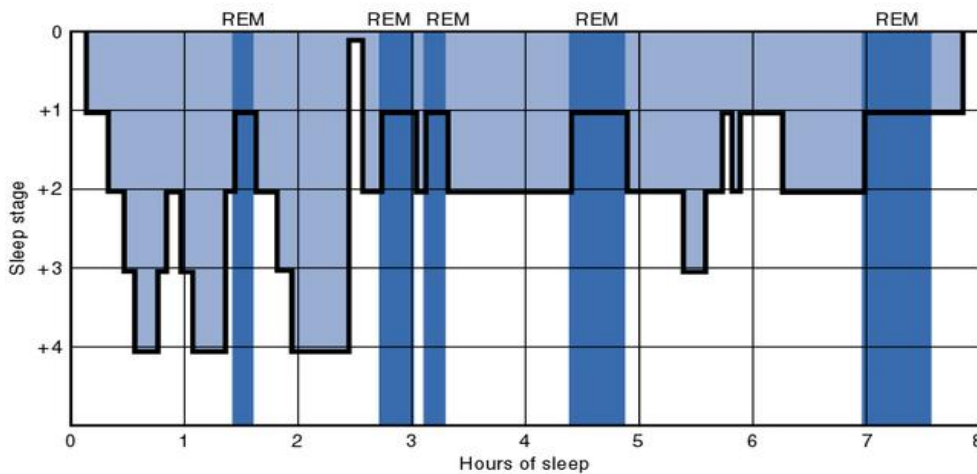
- a. *Sleep onset* – the period when we are falling asleep when we may experience mild hallucinations (brain starts the production of alpha waves)

<u>State of Wakefulness/ Stage of Sleep</u>	<u>Characteristic Brain Wave Pattern</u>	<u>Key Features</u>
<i>Alert Wakefulness</i>	Fast, low-amplitude beta waves	<ul style="list-style-type: none"> ▪ State of focused attention or active thought
<i>Relaxed Wakefulness</i>	Slower, rhythmic alpha waves	<ul style="list-style-type: none"> ▪ State of resting quietly with eyes open
<i>Stage 1 Sleep</i>	Small, irregular brain waves with varying frequencies	<ul style="list-style-type: none"> ▪ Light sleep from which the person can be easily awakened ▪ 5% of sleep spent in this stage
<i>Stage 2 Sleep</i>	Sleep spindles	<ul style="list-style-type: none"> ▪ Deeper sleep, but the sleeper is still readily awakened ▪ 50% of sleep spent in this stage
<i>Stage 3 Sleep</i>	Large, slow delta waves (difficult to wake a person when producing delta waves)	<ul style="list-style-type: none"> ▪ Deep sleep (called delta sleep or slow-wave sleep) from which it is difficult to arouse the sleeper ▪ 20% of sleep spent in deep sleep (stages 3&4)
<i>Stage 4 Sleep</i>	Dominance of delta waves	<ul style="list-style-type: none"> ▪ Deepest level of sleep
<i>REM Sleep</i> [Paradoxical sleep: brain is as active in REM sleep as in consciousness]	Rapid, active pattern, similar to that in alert wakefulness	<ul style="list-style-type: none"> ▪ Sleep in which the brain becomes more active but muscle activity is blocked (also called active sleep or paradoxical sleep); stage associated with dreaming ▪ 25% of sleep spent in this stage



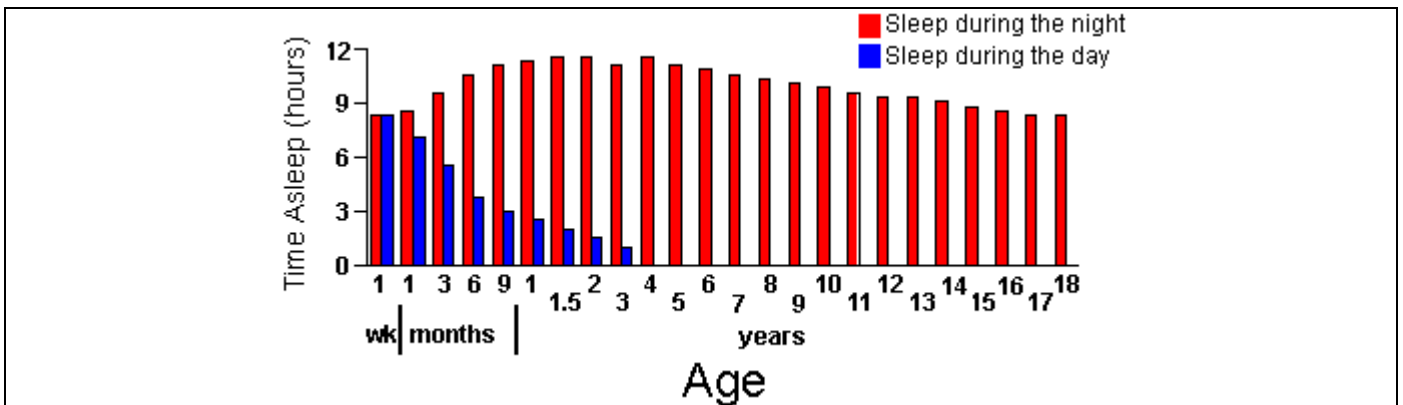
www.holistic-online.com/.../Sleep/sleep_stages-1-4NREM.htm

www.btinternet.com/~sleep.assessment/sleep.htm



4. Changes in Sleep Patterns

1. Sleep patterns change as people age.
2. Infants spend more time sleeping and spend a greater percentage of sleep in REM sleep compared with the times of older children and adults.
3. For example, newborn babies sleep about 16 hours per day and spend about 50% of that time in REM sleep.
4. Older people (50-85 years old) sleep only 5.75-6 hours per day and spend 13.8-15% of that time in REM sleep.



5. Sleep Deprivation

- a. unhindered human sleep will last around 9 hours who people sleep less that that they “accumulate a debt of REM sleep” which is not easy to make up
- b. become anxious, irritable, report difficulty concentrating, have lower immunities to illnesses, and do worse on tasks that require attention or originality
- c. can lead to disruptions in personality or brain function
- d. most common cause of motor vehicle accidents
- e. *REM Rebound* - When you are sleep deprived you lose out on two types of sleep, REM and NREM (non-REM). Typically when you have a chance to fall asleep after sleep deprivation you have a tendency to get more REM sleep than you would normally get. This is your body's way of trying to catch up on its REM sleep.

6. Sleep Disorders

- a. insomnia – difficulty falling asleep, remaining asleep, or retuning to sleep after nighttime awakenings (lasting for 1 to 3 months)
- b. hypersomnia – likely to sleep for long periods of time (12-20 hours a day) without feeling refreshed or rested (lasting for 1 to 3 months)
- c. narcolepsy – a disorder characterized by sudden unexplained “sleep attacks” during the day
- d. sleepwalking (somnambulism) – a sleep disorder characterized by repeated episodes of sleepwalking
- e. sleep apnea – temporary cessation of breathing during sleep
- f. night terrors – a sleep disorder (usually in children) involving repeated episodes of intense fear during sleep, causing the person to awake abruptly in a terrified state [usually happen in the first 2 to 3 hours of sleep and while in stage 4 sleep]
- g. nightmare disorder – involving a pattern of frequent, disturbing nightmares [these occur more toward the morning hours in later REM cycles]

C. Altering Consciousness with Dreams

- 1. dream – a state of consciousness that occurs during sleep and is usually accompanied by vivid visual, tactile, or auditory images
- 2. dream content –
 - a. *Manifest content* – refers to events that occur in the dream. A person might dream, for example, of driving fast and getting a speeding ticket by a police officer.
 - b. *Latent content* (psychoanalytic/Freudian theory) – is the true, underlying meaning of the dream, disguised in the form of dream symbols. The disguise conceals the dream’s real meaning, thereby helping preserve emotionally threatening material from waking a person up. Driving fast might symbolize un unacceptable sexual wish. The police might symbolize male authority or a person’s father punishing them for having a sexual wish.
- 3. Dream Theories

<u>Theory</u>	<u>Explanation</u>
<i>Psychodynamic theory</i>	In the Psychodynamic theory such as Freud’s view, dreams are viewed as expressions of desires, wishes, and unfulfilled needs that exists in the unconscious mind “window into the unconscious” <i>Example:</i> dreaming of kissing Mr. Moore, being a ballerina
<i>Jungian theory</i>	Jungian theories see dreams not only as expressions of needs and desires, but also reflections of people’s collection unconscious (a store house of primitive images and ideas inherited from ancestors) <i>Example:</i> dream of snakes (ancestors were afraid or died from snakes)

<i>Activation-synthesis theory</i>	<p>The proposition that dreams represent the brain’s attempt to make sense of the random discharges of electrical activity that occur during REM sleep</p> <p><i>Example:</i> studying for a test and strengthening neural connections, getting rid of memories/experiences you didn’t need</p>
<i>Cognitive theory</i>	<p>Dreams represent current wishes, desires, and issues that the person is dealing with</p> <p><i>Example:</i> picturing yourself at college, breaking up with a significant other</p>

D. *Altering Consciousness Hypnosis and Meditation*

1. Hypnosis – an altered state of consciousness characterized by focused attention, deep relaxation, and heightened susceptibility to or state of suggestion
 - a. *Posthypnotic suggestion* – a suggestion that a hypnotized person behave in a certain way after he or she is brought out of hypnosis (ex. – when people say to the person “you did great” they respond exuberantly, “you bet I did!”)
 - b. *Posthypnotic amnesia* – when people report to forget events that occurred while they were hypnotized [because they were told to forget something traumatic that they would not be able to deal with now]
 - c. *Role theory* – states that hypnosis is not an alternate state of consciousness but a social phenomenon where people who share certain characteristics such as having a richer fantasy life or follow directions better tend to have a higher hypnotic suggestibility and act out roles that are expected of them. People are not really hypnotized, they just “play” the role that they are given – act like a chicken...
 - d. *State theory* – states that hypnosis meets some of the criteria for an altered state of consciousness because hypnotists suggest that we become more or less aware of our environment
 - e. *Dissociation theory* –
 1. Ernest Hilgard explained that hypnosis causes us to divide up our consciousness voluntarily with one part or level responds to the suggestions while the other part retains awareness of suggestion
 2. Hilgard asked hypnotized people to put their arm in an ice water bath and the individuals said they did not feel any pain from the extreme cold. He also asked these individuals to lift their index finger if they felt pain (most did).
 3. Hilgard’s experiment demonstrates the presence of “hidden observer” a part of our consciousness that monitors what happens while another level obeys the hypnotist’s suggestions
2. Uses of Hypnosis –
 - a. Age regression/past lives [very controversial – does it exist]
 - b. Heightened memory
 1. psychical or sexual abuse
 2. crimes (not admissible in court)
 3. very controversial – if a person is in a heightened state of suggestibility, can words (wording effect) lead people to create memories?
 - c. Pain reduction or pain management
 1. (ex. phantom limb, labor)
 - d. Psychotherapy (Freudian theory of therapy)
 1. help relax/relaxation techniques
 2. enhance memory of events for treatment of what is bothering the patient (Anna O)
 3. reduce stress and anxiety
 4. loose weight or stop smoking
3. Meditation – is a focused attention that induces a relaxed, contemplative state.

E. *Altering Consciousness with Drugs*

1. Psychoactive drugs – chemical substance that affects a person’s mental or emotional state
 - a. *Blood-brain barrier* – the brain is protected from harmful chemicals but the molecules that make up psychoactive drugs are small enough to pass through the blood-brain barrier.
2. Addictive drug – a drug that causes a compulsive physiological need in the user and whose absence produces withdrawal symptoms
3. Psychological dependence – a pattern of compulsive or habitual use of a drug to satisfy a psychological need
4. Withdrawal symptoms – a cluster of symptoms associated with abrupt withdrawal from a drug
5. Tolerance – progressive insensitivity to repeated use of a drug in the same dosage

	<u>Drug</u>	<u>Potential for Psych/Phys Dependence</u>	<u>Major Psychological Effect</u>	<u>Major Risks</u>
<u>Depressants</u>	<i>Alcohol</i>	Yes/Yes	Induces relaxation, mild euphoria, and intoxication; relieves anxiety; reduces mental alertness; impairs judgment, concentration, coordination, and balance	With heavy use, can produce liver disorders and other physical problems; in overdose, can cause coma or death
	<i>Barbiturates and Tranquilizers</i>	Yes/Yes	Reduces mental alertness; induces relaxation and calm; may produce pleasurable rush	High addictive potential; dangerous in overdose and when mixed with alcohol and other drugs
	<i>Opiates (opium, heroin)</i>	Yes/Yes	Induces relaxation and a euphoric rush; may temporarily blot out awareness of personal problems	High addictive potential; in overdose, can cause sudden death
<u>Stimulants</u>	<i>Amphetamines</i>	Yes/Yes	Boosts mental alertness; reduces need for sleep; induces pleasurable rush; causes loss of appetite	In high doses, can induce psychotic symptoms and cardiovascular irregularities that may lead to coma or death
	<i>Cocaine</i>	Yes/Yes	Effects similar to amphetamines but shorter-lived	High addictive potential; risk of sudden death from overdose; in high doses can have psychotic effects; risk of nasal defects from snorting
	<i>MDMA (ecstasy)</i>	Yes/Yes	Mild euphoria and hallucinogenic effects	High doses can be lethal; may lead to depression (by destroying serotonin receptors) or other psychological effects; may impair learning, attention, and memory
	<i>Nicotine</i>	Yes/Yes	Increases mental alertness; produces mild rush but paradoxically may have relaxing and calming effects	Strong addictive potential; implicated in various cancers, cardiovascular disease, and other physical disorders
	<i>Caffeine</i>	Yes/Yes	Increases mental alertness and wakefulness	In high doses, can cause jitteriness and sleeplessness; may increase risk of miscarriage during pregnancy
<u>Hallucinogens</u>	<i>LSD</i>	Yes/No	Produces hallucinations and other secondary distortions	Intense anxiety, panic, or psychotic reactions associated with “bad trips”; flashbacks
	<i>Marijuana</i>	Yes/No	Induces relaxation and mild euphoria; can produce hallucinations	In high doses, can cause nausea, vomiting, disorientation, panic, and paranoia; possible health risks from regular use

6. Understanding Drug Abuse –
 - a. Social and behavioral reasons (peer pressure, parent behavior)
 - b. Alienation from the mainstream of society
 - c. Desire to “fit in” or “be cool”
 - d. Cultural
 - e. Genetic factors and biological influences
 - f. Role of neurotransmitters
 - g. Psychological factors
 - h. Cognitive factors
 - i. Continued use due to
 1. pleasurable effects
 2. body becomes dependant on it
7. Drug Treatment
 - a. Detoxification – A medically supervised treatment program for alcohol or drug addiction designed to purge the body of intoxicating or addictive substances. Such a program is used as a first step in overcoming physiological or psychological addiction.
 - b. *Alcoholics Anonymous or Narcotics Anonymous* –
 1. abstain from substances
 2. attend programs for supportive environment
 - c. *Family therapy/therapy*
 1. A form of psychotherapy in which the individual or family members are examined in private or group sessions in order to identify and alleviate problems
 2. Therapy can improve family relationships and processes, helping members to understand and modify home influences that contribute to mental disorder in one or more family members, and improve communication.
 - d. *In/Out Patient Treatment Programs*
 1. In patient program – 24/7 hospital program usually for 2-4 weeks usually consisting of detoxification, therapy sessions, and life skills classes
 2. Out patient – supervised program where patients attends classes or therapy sessions

Notes based on information from the following sources:

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