Meaning Of Terms Cognition And Consciousness

In present day, psychology emphasizes the importance of various mental states and processes to study cognition and consciousness. Psychologists conclude that consciousness is our awareness of ourselves and our environment. They realize that some information is processed automatically, while some is processed with effort. After 1960, when psychologists took advantage of progress in neuroscience to learn the relationship of the perception experienced and neural activity in the brain, consciousness was more easily studied. Commonly analyzed states include sleep, hypnosis, and states induced by drugs. New research of consciousness also highlights the importance of mental activities associated with thinking, knowing, remembering, and communicating, referred to as cognition. Since, cognition has come to evaluate ways humans solve problems, obstacles that cause us to be incorrect in problem solving, and the influence of language in relation to thinking.

Psychologists have long endured challenges defining what consciousness truly is. Sigmund Freud held a popular theory that attempted to explain it, the psychoanalytic theory. As, courses.lumenlearning.com suggests, Sigmound Freud believed that humans' three levels of awareness were conscious, preconscious, and unconscious. The first level, consciousness, refers to anything that we are aware of regarding ourselves and the environment. Next, the level of preconsciousness is slightly more complicated. Freud said that this level consisted of memories that are stored automatically, but are available for later retrieval because they are not repressed. If we wanted to, we could shift our attention on these stimuli, but we do not, so they become stored without our awareness. Last is the unconscious, which is made of everything we are not aware of, but influences our actions nevertheless. Freud in particular thought that these ideas were primarily negative impulses and memories. Early beliefs sometimes differed from what psychologists agree on now: consciousness needs to be studied biologically and psychologically. Technologies such as fMRI and EEG scans are used to measure brain activity and determine neural correlates of consciousness, what subjects experience correlating with what goes on in their brain. Now, there is acceptance that prefrontal cortex processes the extensive functions relating to consciousness. Stages of consciousness that are frequently explored are are sleep, hypnosis, and states induced by drugs.

Humans physiologically need sleep. It aids learning and memory, reduces obesity, strengthens immune systems, and improves concentration. Furthermore, when people do not meet their body's biological need for rest, they are less productive, not as happy, and have increased hunger-arousing hormones. During this very important stage of consciousness, humans pass through fives stages every 90 minutes. Before drifting off to sleep, a relaxed state with slow brain waves, called alpha waves, is demonstrated. Contrastingly, after falling asleep and entering stage one, the brain has irregular waves and can experience hallucinations, seeing false sensory stimulus when no visual stimulus is actually present. Next, brain wave activity that is rapid and rhythmic, called sleep spindles, occurs in stage two. Finally, after passing through the transitional stage three, deep sleep begins in stage four. In addition to these stages, sleep is characterized by NREM versus REM sleep. NREM sleep refers to non-rapid eye movement sleep and occurs within the first hour after falling asleep. Rapid eye movement sleep encompasses the rest of the night. It is characterized by sudden darting movements of the eyes, fast heart rate, and irregular breathing. This occurs to avoid the eye's suffocation of

oxygen by generating liquid behind the cornea that results in the delivery of fresh oxygen. This sensation indicates when a new and dream begins. REM dreams can be referred to as “hallucinations of the sleeping mind” and they are often emotional and vivid rather than simple and familiar. According to Sigmund Freud, our dreams are often made up of manifest content. The remembered storyline is most often about the previous day’s encounters. The content of a dream is also influenced by outside stimuli. Despite this, we can not benefit from this as a way to learn or store information, because the majority of the time, stimuli encountered right before or during sleep goes unremembered. REM dreams do benefit humans in other ways though. According to greatergood.berkeley.edu, REM sleep dreaming is the only time when noradrenaline, an anxiety inducing molecule, is not present in the brain. This allows emotional or even traumatic memories to be processed calmly without triggering stress. Furthermore, REM sleep allows people to emotionally recover more quickly. As Dr. Matthew Walker said, “It’s said that time heals all wounds, but my research suggests that time spent in dream sleep is what heals.”

Some psychologists believe that hypnosis is another stage of consciousness. It displays how humans can process information with a two-track mind, resulting in spontaneously occurring behaviours and thoughts. Psychologist Theodore Barber summed up hypnosis well by saying “The hypnotist’s ideas become the subject’s thoughts, and the subject’s thoughts produce the hypnotic experiences and behaviours.” Anyone is susceptible, but some people will display more hypnotic responsiveness than others because their hypnotic ability is greater, and they are stronger at focusing on a task. Hypnotists build on this and enhance people’s ability to focus with their selective attention. Because its tendency to distract subjects, hypnosis can alleviate pain. In some rare cases, it has been used in replace of anaesthesia, which blocks brain activity relating to pain during surgeries. In addition, posthypnotic suggestions, which continue to affect the subject after the hypnotic session ends, produce long term results. Hypnotherapists take advantage of this strategy, and usually yield more improvement than a regular therapist. Researchers are not under a consensus about the reason why hypnosis is possible. One explanation, the social-influence theory, explains that people feel compelled to listen to the trusted authority of the hypnotist and behave in the role they believe that they should. Along this line of thinking, subjects will not perform the desired behaviour if they see the role they are asked to display in a negative light. Contrastingly, the divided-consciousness theory is based off of dissociation, a split in awareness. This theory can help explain how hypnosis relieves pain because the sensation of pain and the emotional response associated with pain are dissociated from each other.

Psychologists agree that drugs also induce an altered state of consciousness. When psychoactive drugs are used, chemicals affect neural synapses, which changes moods and perceptions. Depressants, stimulants, and hallucinogens are the three categories of psychoactive drugs, which alter the brains chemical messages. First off, depressants slow the body’s functions by delaying neural functioning. Although alcohol sometimes appears to excite people and make them more active, it is actually a depressant because it reduces neural activity. Effects of alcohol include exaggeration of positive or negative tendencies, decreased reaction time, forgetting recent experiences, and lack of self awareness. In addition, barbiturate drugs and opiates are also characterized as depressants because they hinder neural activities. Next, contradictory from depressants, stimulants arouse body functions by exciting neural activities. These substances, usually used to boost performance, stay awake, lose weight, or improve mood, have consequences and may be addictive. Some examples of stimulants are methamphetamine, caffeine, nicotine, cocaine, and Ecstasy. Nicotine for example, has grown

more prominent recently because of the increasing amount of teenagers beginning to vape and becoming addicted. Acquiring an addiction while still young has many drawbacks. As addicitoncenter.com explains, “Because addiction changes the biochemical makeup of the brain, it becomes harder to quit the earlier a person starts using...This is because addictive substances like tobacco activate the brain reward system, which is still developing in teens.” The third type of psychoactive drug is hallucinogens, which create the illusion of sensory stimuli when there is none. Hallucinations experienced usually begin as meaningless shapes, but then can progress into substantial images and emotional scenes that are realistic. Overall, psychoactive drugs affect the brain greatly, depending on our culture and our biology.

Cognitive psychologists discover how humans think, know, remember, and communicate. They have learned, that to solve problems, humans often use one of three strategies: algorithms, heuristics, or insight. To guarantee that no errors will be made, people use methodical procedures, called algorithms. The more common and quicker way to come about an answer, is a heuristic. This strategy allows people to find a solution quicker by using a simple thinking strategy. Mistakes and misjudgments are more prevalent in heuristics than in algorithms. For example, when people use a representative heuristic, they misjudge the likelihood of something based off of the similarity to the prototype. Availability heuristic causes people to believe that vivid events resonating in their minds are common. The third, and most effortless strategy in problem solving is insight. This novel realization, often referred to as the “aha! moment” is accompanied with a burst of brain activity. When attempting to find a solution to a problem, humans face obstacles that prevent accuracy. First, confirmation bias comes from an individual's eagerness to support their own preconceptions rather than contradictory information. People often actively search for evidence to prove themselves correct and ignore anything that discredits them. Similarly, belief perseverance relates to wanting to be proven correct, but it differs because it involves clinging to an initial belief that has already been proven incorrect. Next, overconfidence involves overestimating accuracy of our judgements and knowledge. People also sometimes fail to solve a problem because they do not approach it the correct way. When this happens, fixation can occur, which is failing to recognize different perspectives to solve a problem. Finally, our decision on an issue greatly depends on the way it is presented. This setback in judgement, called framing, frequently occurs in everyday life. According to journals.sagepub.com, there is two types of framing: equivalence framing and emphasis framing. Equivalence framing presents information that is logically equally, but is interpreted differently, while emphasis framing presents different aspects of one situation. Both types of framing can lead to skewed conclusions.

Language is extremely valuable for human’s communication, learning, and thinking. “...it doesn’t matter whether you are rich or poor, black or white, or what your eye colour is. You are destined to acquire at least one language…” (psychologytoday.com) Since the majority of the population on earth masters at least one language, it is beneficial for cognitive psychologists and linguists to study how it affects us mentally. Benjamin Lee Whorf formed a hypothesis regarding this. He came up with linguistic determinism, stating that the way we think is determined by language. It has now been said that “Language affects our thinking, which affects our thought.” To fully understand language psychologically, it is also useful to make sense of its structure. Linguists have identified three structural components of language: phonemes, morphemes, and grammar. Phonemes refer to the basic set of sounds in language. Although a single language never uses all of them, “Linguists surveying nearly 500 languages have identified 869 different phonemes in human speech.” Since natives of one language learn a specific set of phonemes as children, they usually have trouble accurately pronouncing

phonemes from other languages later in life. Next, morphemes are a unit of language that holds meaning. Most morphemes are whole words, but prefixes and suffixes indicate a morpheme as well. The final structural component of language is grammar, which provides an agreed upon system of rules for semantics and syntax. Semantics gives rules of how to derive meaning from morphemes, and syntax gives rules of the structure of sentences. Specified milestones have been determined that map out children's language development as they learn this structure. The first stage of language development is the babbling stage, starting at around four months. Babies make a variety of sounds that do not resemble their parents speech, because it is not consistent with the household language. Children leave this stage at around ten months of age, when the phonemes they produce are the same as the native language in their house. Next, the child will advance to the one-word stage and two-word stage until at two years old, when they can speak in complete sentences.

Though they both understood that humans went through these stages to fully acquire knowledge of a language, B.F Skinner and Noam Chomsky had differing opinions on how humans are able to intellectually learn principles of language. In line with his behaviourist views and work with operant conditioning, Skinner thought that children’s language was developed by associating the words heard with the way they look, imitating words others speak, and being reinforced when language is uttered correctly. He said “Verbal behaviour evidently came into existence when...the vocal musculature became susceptible to operant conditioning.” Thus, in the nature-nurture debate regarding language, Skinner stood on the nurture side. Chomsky disagreed and determined that children acquire language skills much too fast for it to be from learned behaviour. Instead, he believed that nurture does have influence, but we are born predisposed with an ability to comprehend language. Now, psychologists prefer to incorporate both their views, believing that nature and nurture work together to allow us to quickly pick up complex language.

These complex studies of cognition and consciousness are interrelated. The thinking, knowing, remembering, and communicating of cognition can occur in multiple states of consciousness. It is not always necessary to be in an aware state for cognition to occur. For example, while sleeping we are not consciously aware of our environment, but we are still able to make judgements such as where the edge of the bed is in order to not fall off. Another stage of consciousness, hypnosis, can demonstrate remembering involved in cognition. Hypnotherapists seek for subjects to remember their posthypnotic suggestions for long term effects after the hypnosis session is over. Stages of consciousness induced by drugs will usually impair cognition. For example, depressants such as alcohol, slow neural activity, which slows evaluating, processing, and reacting. Priming is another example of how consciousness and cognition relate to each other. Though we are not consciously aware of certain stimuli, it can register in our brain and sometimes affect our cognitive processes. Besides all the ways they affect each other, cognition and consciousness differ from each other because cognition is all inside the brain, while consciousness relates to awareness of the environment.