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EXPLORING PSYCHOLINGUISTICS: BASICS FOR BEGINNERS

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Abstract

This study aims at exploring the concept of psycholinguistics. It focuses on the core concepts used in the scope of the field, which is important to a beginner to fully appreciate. It gives an overview of psychology and linguistics in a nutshell, investigating the concept of multidisciplinary nature of psycholinguistics, mind, brain, language and learning from three perspectives: behaviorism, mentalism and interactionism. This study adopted qualitative methodology as paradigm and close reading as strategy. Moreover, the sources were purposively selected. It finds out answers to the questions: "What is mind?" and "What is language?" Moreover, it also comes up with a set of recommendations.

I. Introduction

Man is the only animal that thinks. Thinking is a distinctive quality that differentiates human being from the rest of organisms. Power of thinking is the contributing factor leading to the power of speech. Thought is inner speech, whereas speech is loud thinking. Both speech (language) and thought are intimately connected with each other. Views on the relationship between language and thought differ. Language determines/influences or expresses thought. It follows that language is a psychological reality being the evidence of human mind. The study of language can tell us much about how the mind works. Psycholinguistics is essentially the study of language and mind. In other words, it combines psychology and linguistics. Psychology deals with the scientific study of human soul, mind (its processes), behaviour, brain and stream of consciousness. Linguistics is the scientific study of language. This study explores core concepts used in the scope of psycholinguistics. For example, mind is a faculty (of faculties) of perception and cognition. Mind is also described as an information-processing system, a blank slate (*tabula rasa*) or function of the brain. Similarly, language, in the context of psycholinguistics, is defined as a mental faculty, set of habits or a social interaction. Moreover, this study also explores varied psychological factors influencing language learning or acquisition.

II. Review of Related Literature

According to Collins Dictionary (2006), psycholinguistics is the psychology of language, including language acquisition by children, the mental processes underlying adult comprehension, production of speech and language disorders. It follows from the definition that psycholinguistics is basically the psychology of language and speech processes. Moreover, language acquisition and learning are the principal subject matter of psycholinguistics. According to Oxford Advanced Learner's Dictionary (2015), psycholinguistics is the study of the relationships between linguistic behaviour and psychological processes, including the process of language acquisition. First, it follows that language behaviour as opposed to language system is the object of study in psycholinguistics. Language behaviour is an observable action referring to concrete and actual utterances or speech used in a particular context of interaction. Second, language acquisition and learning are also paid due attention in psycholinguistics. According to Steinberg (2006), psycholinguistics is to specify how people use competence in the production and comprehension of speech and how competence is acquired. It suggests that psycholinguistics focuses on competence as the goal of psycholinguistics. Competence-performance theory is a notion about language system and behaviour given by Noam Chomsky. According to Aitchison (2008), psycholinguistics combines linguistics and psychology. It intersects linguistics with psychology. It borrows many concepts from linguistics and psychology. Psychology is the study of mental processes, including cognitive and affective processes. Moreover, it studies structure and functions of human mind. Linguistics is the scientific study of language, including structure, function, use, meaning and learning/acquisition of language. According to Furnham (2009), there are certain ideas that are crucially important in understanding psychology. First of all, abnormal psychology, also known as clinical psychology, is concerned with abnormal behaviour. It deals with the original sources, realizations, and therapy of abnormal habits, thoughts and instincts that are caused by cognitive, genetic or environmental factors. The term 'stress' has been come from the Latin 'stringere' which means 'to draw tight'. There are many who believe stress may be subjectively defined; others

maintain a person has to define stress objectively. Stress normally refers to adversity or hardship, but technically it refers to the sum of all nonspecific changes caused by function or damage. There are three components of stress: personality, ability and biography. Placebo literally means something to please. A placebo is basically a thing having no medicinal value or effects. It just leaves psychological impact on patient, but it does not have specific, assumed therapeutic effect. Psychophysics (the physics of the mind) is the organized study of the relationship between the physical features of stimuli and the sensations they create. Description of the features is functional, or process oriented, for processes rather than structure are significant. A simple question of psychophysics is: "What is the chain of events that begins with a stimulus and leads up to reports such as 'a bright red, or a loud noise'. It covers three fundamental steps: a stimulus to a sense receptor; a neural chain of events caused by this stimulus—it is changed into an electric signal and then into a nerve impulse; a psychological response to the message (sensation). Hallucination exhibits two features: to dream and to be distraught. It is reportedly derived from Latin 'alucinari' meaning 'to wander in mind.' A hallucination is, quite simply, the perception of something— a noise, smell, sight—that is not there. It is characterized by sensing something while awake and aware, but the thing does not basically exist. It is a feeling without any stimulus. A hallucination can include hearing voices of long-dead or mythical people. Hallucinations are highly peculiar and bewildering. Delusion is a fixed, invariable, consistent and false belief having no ground reality. It is a notion maintained by a person or group that is obviously false and away from reality. One having delusions sometimes manifests total uncertainty and conviction about their beliefs. They come up with arguments and evidence that are totally wrong. Positive psychology is the study of forces and operations leading to positive emotions, good behaviors and effective performance. It is one of the concerns of psychology that how an individual can remain happy by adopting and using certain forces and processes giving birth to happiness. Happiness is not much more explored in psychology. Emotional intelligence is a systematic framework for arranging abilities pertaining to comprehension, managing and utilizing feelings and emotions. Components of emotional intelligence vary. The following are some of the components involved in emotional intelligence: emotional literacy, emotional fitness, emotional depth and emotional alchemy. Intelligence quotient is the division of mental age by chronological age and multiplication by 100. Sir Francis Galton for the first time advocated intelligence tests, believing that intelligence was the general ability of a person. It can be measured in terms of speed of problem solving and other mental operations. Intelligence cannot be defined absolutely. One definition is that it refers to the ability to learn from experience and the ability to adapt to new environment. The notion of multiple intelligence was explored by Howard Gardner (1983). According to Gardner (ibid), intelligence is the ability to solve problems or to create products that are valued within one or more cultural settings. He has given the idea that linguistic/verbal and logical/mathematical intelligence are widely used in educational contexts. Linguistic intelligence encompasses sensitivity to the spoken and written language and language-learning ability. Logical/mathematical intelligence encompasses the ability of a person to solve problems and look into a problem systematically. Artificial intelligence is basically the study and design of intelligent agents or systems that view the surroundings and act maximizing chances of success. It also refers to the quality of machine or program to demonstrate intelligence. Researchers focus on the fact that how machines will do certain mental tasks, that is, thinking, reasoning, communication, perception and the ability to manipulate objects.

According to Lyons (1981), linguistics is the scientific study of language. It essentially deals with structure, function, use, meaning and aspects of language. According to Yule (2010), there are several views about the origin of language, that is, the divine source, the natural sound source, the social interaction source, the physical adaptation source, the tool-making source and the genetic source. Human language differs from animal communication system on account of the following distinctive properties: displacement, arbitrariness, productivity, cultural transmission and duality. Phonetics is the study of speech sounds or phonemes. To Rahman (2010), it is the study of production, perception, description and transcription of sounds. Phonemes are of two types: consonants and vowels. Consonants are studied in terms of place of articulation, manner of articulation and voicing. Vowel is studied in terms of length, position of tongue, height of tongue and position of jaws. Phonology deals with sound patterns of a particular language. It also deals with suprasegmental features, such as stress and intonation and co-articulation effects, that is, elision and assimilation. Morphology deals with word-structure and word formation processes, including coinage, backformation, borrowing, conversion, etc. Syntax is the study of sentence structure and the rules that govern the arrangement and distribution of words. Semantics is the study of meaning, semantic roles and lexical relations. Pragmatics is the study of language in relation to context. Discourse analysis is the analysis of discourse and its properties: unity and coherence. Sociolinguistics is the study of language in relation to social context. Historical linguistics is concerned with the study of language history, language change, language connections and families.

III. Methodology

This study adopted qualitative methodology of research in the collection as well as analysis of data. According to Creswell (2014), qualitative methodology of research is a blanket term referring to a set of study designs based on certain theoretical dimensions. It is a valid model existing in a normal natural environment and renders the researcher able to form an orientation helping in the identification of experiences. Study designs used in qualitative methodology include case study, focus group and oral history. Theoretical dimensions used in qualitative methodology include interpretation of variables rather than measurement or calculation of variables. Moreover, the topic is evaluated and analyzed using close reading, hermeneutics is practised in the study under question. According to Greenham (2019), close reading is about enjoying the way the words on the page create beauty in complexity. Context is significant in close reading. There are six layers of contexts: the syntactic, semantic, thematic, iterative, generic, and adversarial. The sources were selected purposively.

IV. Data Analysis and Interpretation

Psycholinguistics can be defined as an area of linguistics dealing with the scientific study of language in relation to human mind and/or the brain. It deals with the psychological aspect of language, showing the relationship of language and mind or brain. In a word, psycholinguistics is concerned with language and mind. It is crucial to appreciate some core concepts used in the philosophy of psycholinguistics mentioned above. First of all, the term psycholinguistics is a combination of two expressions: psyche and linguistics. Psyche refers to spirit, soul or energy, but in this context, the word psyche is related to psychology that is described as an area of knowledge or learning dealing with the study of the following: the soul, the mind (mental processes), the brain, behaviour and stream of consciousness. Soul is an abstract entity constituting human body. It was considered the principal subject matter

of psychology in classical antiquity. Actions leave influence on human soul that consequently influences human body. To Russel (1945), this is a philosophical preoccupation of ancient philosophers. Soul subsequently gave place to mind. Later on, philosophers started giving overriding emphasis on human mind rather than human soul, arguing that man is the sum total of two entities: mind and body. This point will be explored later. What is mind? The answer to this question is not very simple. Mind is described from different perspectives in the following ways. First of all, to Sternberg (2009), mind is a faculty encompassing several other faculties, that is to say, intellect (power of thinking, reasoning and understanding), perception or observation, memory, attention, language, problem solving ability, problem coping ability, decision-making ability, creativity, intuition and the like. Apart from these cognitive faculties, mind is also the seat of emotions and willpower, this point is open to debate, for some psychologists argue that heart is the seat of emotions and feelings. Second, mind does not exist in its own right. It is essentially an accumulation, constellation or set of experiences gained from the outside phenomenal world. To Locke (1998), mind in its original shape is an empty, clean and blank slate technically known as "tabula rasa". Third, mind is an information-processing system. It is a system like computer, turning data into information. It receives data from external world through five senses also called modalities. These different modalities are used in the perception of information. The data received are processed and turned into information by the mind. That's why mind is termed as the information-processing system. Fourth, mind is the function of the brain. Brain is the structure, whereas mind is the function of the structure. These different functions of the brain are technically known as the mind. Finally, mind is the product of culture; it is the container of the whole culture. Culture is an umbrella term encompassing multiple things, that is to say, social and physical structure, social institutions, social interaction, gender hierarchy, worldview and ways of life and thinking. Mind is basically made up of these elements of culture. According to Yule (2010), culture is to draw social and cognitive categories. Social categories are social relations and kinship terms while cognitive categories are ways of thinking. In a word, mind is culture in miniature. Psychoanalysis is a theory given by Sigmund Freud (1856-1939), acting as a theory of human mind, of personality and of treatment. As a theory of human mind, psychoanalysis (psycho means mind, analysis means division) divides human mind into three parts: conscious, subconscious and unconscious part of mind. Mind is compared to iceberg.

Conscious part of the mind acts like the tip of the iceberg. This means that it is the smallest part of the mind. It is characterized by awareness and orientation of the external environment. Moreover, it carries memories that an individual remembers. Conscious part of the mind is a gateway to unconscious part of the mind. Experiences enter into unconscious part through conscious part. Subconscious part is smaller than unconscious part; there are memories in this part, which an individual can hardly remember. Unconscious part of human mind is the largest part. It is characterized by past experiences, pent-up emotions, unexpressed desires and fear. There is no awareness and orientation of the outside world in this part of the mind. Unconscious part is normally active in one's dreams. Dreams are the royal road to unconscious part of human mind.

In the words of Lyons (1981), philosophy of mind is a notion explaining the nature of mind. There are two views regarding mind's philosophy: monism and dualism. Monism holds that mind or body is a single entity. Monism is divided into

idealism and materialism. Idealism holds that mind is a single entity; body has no significance as compared to mind. Monism is one of the philosophical underpinnings of mentalism. Materialism maintains that body is a single entity. It denies the existence of mind, arguing that nothing is above body. Behaviourism largely draws on materialism. Dualism is a philosophical notion maintaining that mind and body are two separate entities. It is divided into two different forms: parallelism and interactionism. Parallelism holds that mind and body are two independent entities without any dependency. Interactionism holds that mind and body are two separate entities interacting with each other. In other words, there is cause and effect relationship between mind and body.

Behaviour is an observable action having goal and motivation. Goal is an end that an organism wants to achieve. Motivation is the driving force lying behind the observable action. Moreover, behaviour is a combination of stimulus-response-reinforcement. Stimulus is a variable (internal or external) triggering off an organism's action. Response is the reaction of an organism to the stimulus. Reinforcement is the feedback gained from the response by an organism. For example, a dog (an organism) is hungry (hunger is an internal stimulus). It opens a box surrounding it (response of dog to hunger). The dog gets food in return (positive reinforcement); the dog gets electric current in opening the box (negative reinforcement). There is probability of repetition of the action in which an organism gets positive reinforcement and the vice versa is true. Behaviour follows a particular pattern that can be modified and changed in the process of learning. Behavior is learned through imitation and association. This means that an organism learns different behaviour through imitation from other organisms. Moreover, association plays a significant part in adopting a behaviour. For example, if a dog gets food along with ringing a bell, leading to secretion of saliva by a dog, the dog will adopt the behaviour of secreting saliva whenever the bell is rung; for, the secretion of saliva is associated with bell ringing. In a word, there is conditioning (classical or operant) in the adoption or learning of a behaviour.

Stream of consciousness is a phrase coined by William James in his book *Principles of Psychology* (1890). It refers to the chaotic and continuous overflow of thoughts and feelings. Mind creates thoughts and feelings continuously without any interruption. This overflow of thoughts and feelings are produced randomly without any particular pattern or causal relationship. Rather, there is association in this chaotic overflow of thoughts and feelings. This means that the mind works according to association between different events, activities, objects and ideas and feelings. An object gives rise to an idea or feeling. Hence, the idea or feeling sparks other ideas and feelings. In a word, there is an emotional or conceptual attachment or association in the continuous and chaotic overflow of thoughts and feelings.

Brain is a part of central nervous system (CNS), the other part is spinal cord. Brain is an organ of perception and cognition. Perception refers to observation. Brain perceives information from the external world through five sensory organs, that is, eye, ear, nose, tongue and skin. Cognition refers to knowledge and thinking. Thinking is done by a man using brain. As has been described above, brain is a structure (anatomy) or organ, whereas mind is the function (physiology) or faculty of the brain. There are two hemispheres of the brain: right and left hemisphere. Right hemisphere controls left side of the body while left hemisphere controls right side of the body. There are four areas in the left hemisphere of the brain responsible for different language functions, such as, Broca's area, Wernicke's area, motor cortex and arcuate fasciculus. Broca's area is responsible for production of speech. Wernicke's area is for

the perception and comprehension of speech. Motor cortex is responsible for the movement of muscle of speech organs or articulators. Aruate fasciculus is a language area in the brain responsible for the transmission of signals and connection between Broca's area and Wernicke's area.

According to Lyons (1981), linguistics is the scientific study of language. Linguistics is scientific for two reasons: scientific method and scientific principles. Scientific method refers to a systematic way or series of steps taken in the observation and experimentation of a phenomenon. It includes asking questions, identification of problem, hypothesis, experiment, deduction, theory and law. Scientific principles are the standards when using scientific method in the observation and analysis of external phenomenon. They are as follows: empiricism, objectivity and causality. Empiricism as opposed to rationalism is a view of philosophy holding that experience rather than reasoning is the reliable and credible source of knowledge. Positivism is the strong form of empiricism. Objectivity is personal neutrality or freedom from personal or cultural influence in doing scientific endeavour. Personal influence includes one's personal likes and dislikes. Cultural influence includes cultural values and traditions. Causality means there is cause and effect relationship in each and every phenomenon of nature. Nothing comes out of nothing.

Psycholinguistics is a multidisciplinary area, signifying that it overlaps with other areas of learning. Psycholinguistics has relationships with the following areas of knowledge:

1. **Linguistics:** Psycholinguistics largely draws on linguistics for its basic concepts and terminologies. It is essentially the study of language in relation to mind.

2. **Psychology (Cognitive Psychology):** Mind is one of the principal subject matters of psychology. Mind, its processes and faculties are basically studied in cognitive psychology that deals with thinking, thinking about thinking, memory, attention, language, perception, problem solving and coping ability, decision making ability, intuition and creativity.

3. **Philosophy:** Philosophy (literally; love of wisdom) is essentially the study of reality as opposed to appearance. It also deals with microcosm (man) and macrocosm (the universe). Besides, philosophy touches upon semantics, rhetoric, logic, aesthetics, metaphysics and epistemology. There are two major schools of philosophy: rationalism and empiricism. Plato is the founder of rationalism, whereas Aristotle is the founder of empiricism. Rationalism and empiricism are the bedrock of psycholinguistics.

4. **Computer Science:** Computer science also has left imprints on psycholinguistics. First of all, mind is often described and explained on analogy with computer. Mind works like computer. Noam Chomsky modeled many of his concepts after computer operations and programs. Second, the notion of artificial intelligence cannot be fully appreciated without recourse to computer science. Artificial intelligence (AI), also called machine intelligence, focuses on the idea of transferring human abilities to machine.

5. **Anthropology:** Anthropology is the study of the physical structure of man, evolution, culture, worldview and language. Sapir-Whorf Hypothesis largely draws

upon culture and language. Franz Boas, Edward Sapir and Benjamin Lee Whorf looked at language from the perspective of anthropology.

Language is defined differently by different people in different contexts. According to Hall (1969), "Language is the institution whereby human communicate and interact with each other by means of habitually used oral-auditory symbols.

According to Sapir (1921), "Language is a purely human and non-instinctive method of communicating ideas, emotions and desires by means of voluntarily produced symbols. According to Block and Trager (1942), "A language is a system of arbitrary vocal symbols by means of which a social group co-operates. According to Chomsky (1957), language is a set (finite or infinite) of sentences, each finite in length and constructed out of a finite set of elements. It follows that language is viewed from different angles. In psycholinguistics, language is considered from three perspectives: behaviourism, mentalism and interactionism.

First of all, behaviourism is a theory acting as theory of mind, language and learning. As theory of mind, behaviorism denies the existence of mind. It borrows concepts from empiricism, a doctrine popularized by John Locke in the Western Philosophy, maintaining that mind is a clean, empty or blank slate (*tabula rasa*). Phenomenal experiences write over this blank slate as a child keeps interacting with the world. It gives overriding emphasis on action rather than mind. Action is an empirical evidence that can tell us much about mind. As theory of language, behaviourism holds that language is a set of habits or social behaviour. It is stimulus-bound. There is stimulus-response-reinforcement. Language is speech, meaning that language is viewed as speech rather than faculty. As an integral part of culture, language shows structural diversity. Bloomfield (1933) introduced behaviourism in linguistics. As theory of learning, behaviourism holds that learning is a mechanical process of establishing connection between stimulus and response using repetition and association. Strong SR connection leads to effectiveness in learning whereas weak SR connection leads to deterioration in learning. Moreover, reinforcement plays a significant part in learning a new behaviour. Positive reinforcement (reward) strengthens a behaviour; negative reinforcement (punishment) weakens a behaviour. This is called Thorndike's law or law of effect. Furthermore, environment (nurture) rather than heredity (nature) plays an indispensable role in the determination of a behaviour. Chief exponents of behaviourism are John Brutus Watson, Edward Thorndike, and B.F Skinner.

Second, mentalism is a theory acting as theory of mind, language and learning. It is an outright revolt against behaviourism. First, as theory of mind, mentalism holds that mind has a central role in the existence of man. Mind is above everything: nothing is above or outside of mind. As Rene Descartes (famous mentalist and rationalist philosopher) says: "Cogito ergo, sum.", meaning "I think, therefore I am." It follows from the philosophical line that the existence of man is due to his thinking. Man is the only animal that thinks. This thinking has enabled him to survive. In a word, everything lies in mind in inheritance. Second, as theory of language, mentalism claims that language is a mental faculty, which is species-specific and species-uniform possession of man. It has two forms: competence and performance. Competence is the abstract entity marked by internalized knowledge of grammar (language universals), creative ability (the ability to generate novel sentences or utterances that a child never heard before) and Language Acquisition Device (LAD), a mental capacity of children to acquire language. It is perfect or free from errors and is potential. Competence is the object of study. Performance is the actual or concrete speech or set of utterances used in a particular concrete situation. It is poor and is subject to errors called performance errors. A child constructs rules for sentence

formation out of speech or performance. Mental faculty is innate and is found only in human species. Moreover, language is stimulus-free. Third, as theory of learning, mentalism claims that learning or acquisition is an organic process of gradually picking up new things through osmosis using mental faculty. Heredity rather than environment plays a pivotal role in learning or acquisition of knowledge. Interaction with environment only activates mental faculty. Outside world helps one in the perception and recognition of what a person carries inside his or her mind in inheritance. Chief exponents of mentalism are Noam Chomsky and Steven Pinker.

Interactionism is a theory acting as theory of mind, language and learning. First, as theory of mind, interactionism claims that mind and body two separate entities rather than single entity. Both exert influence on each other. Mind has its own place. Similarly, body has its own distinct place. Second, as theory of language, interactionism maintains that language is a social interaction. Social interaction is a sociological term signifying communication or social contact or network of an individual in different spheres of life, that is, family, economic activity, religious sphere, educational institutions and political sphere. Man interacts in these spheres of life technically called social institutions. Social interaction includes cooperation, competition, conflict, assimilation and accommodation. Third, as theory of learning, it claims that learning is made through social interaction. People exchange or share ideas, thoughts, information, feelings and emotions through social interaction. Language learning is effectively made through social interaction. Moreover, zone of proximal development (ZPD) is the distance in terms of knowledge between a novice and expert in the process of learning. In this zone, a novice cannot do certain tasks without the help of an expert who has more knowledge than the novice. A novice needs assistance, aid or help from an expert. This sort of help, aid or assistance given to a novice in the zone of proximal development is technically known as scaffolding.

Psycholinguistics differs from the psychology of language in terms of emphasis or focus of attention. Psycholinguistics is the study of language in relation to mind (emphasis on language), whereas psychology of language is the study of mind/behaviour in relation to language (emphasis on mind/behaviour). Similarly, sociolinguistics is the study of language in relation to society or social context while sociology of language is concerned with the study of society in relation to language. As has been described, psycholinguistics deals with the psychological aspect of language, covering the following areas in its scope:

1. Language and mind
2. Language and brain
3. Paradigms: behaviorism, mentalism and interactionism
4. Language learning and acquisition (Individual learner's factors: motivation, personality, learning style, memory, individual variations or differences, attitude, etc.)
5. Speech perception
6. Speech comprehension
7. Speech production
8. Language disorders
9. Language and thought
10. Artificial intelligence

V. Conclusion

This study explored different elements found in the definition of psycholinguistics, trying to come up with cogent and convincing explanation in the relative definition of psycholinguistics, that is, psycholinguistics can be defined as an area of linguistics dealing with the scientific study of language in relation to human mind and/or the brain. This study demonstrates the following. First, it draws a distinction between psycholinguistics and the psychology of language. Second, it shows the multidisciplinary nature of psycholinguistics. Third, it reveals psychological aspect and its role in language learning and acquisition. Fourth, it shows three perspectives on language in the context of psycholinguistics. Fifth, it finds out different notions of human mind, highlighting language areas in the brain. It follows that the results coming out of the study indicate, in a nutshell, the whole scope and boundaries of the area under discussion. Moreover, this study gives the following recommendations for future research in this area:

1. Scope of psycholinguistics can be explored using this work as an avenue.
2. Language learning and acquisition being the core concepts of psycholinguistics can be intensively and extensively investigated, in local context, in the light of the three paradigms: behaviorism, mentalism and interactionism.
3. Mind and brain are intricate entities, being open to further investigation.
4. Speech processes, including perception, comprehension and production of speech can be explored with reference to individual cases through experiments.
5. Mental faculties including power of thinking, understanding, reasoning, memory, attention, creativity, decision-making ability, problem-coping and solving ability, and the role of motivation can be further looked into, keeping in view second language learning/acquisition and artificial intelligence.

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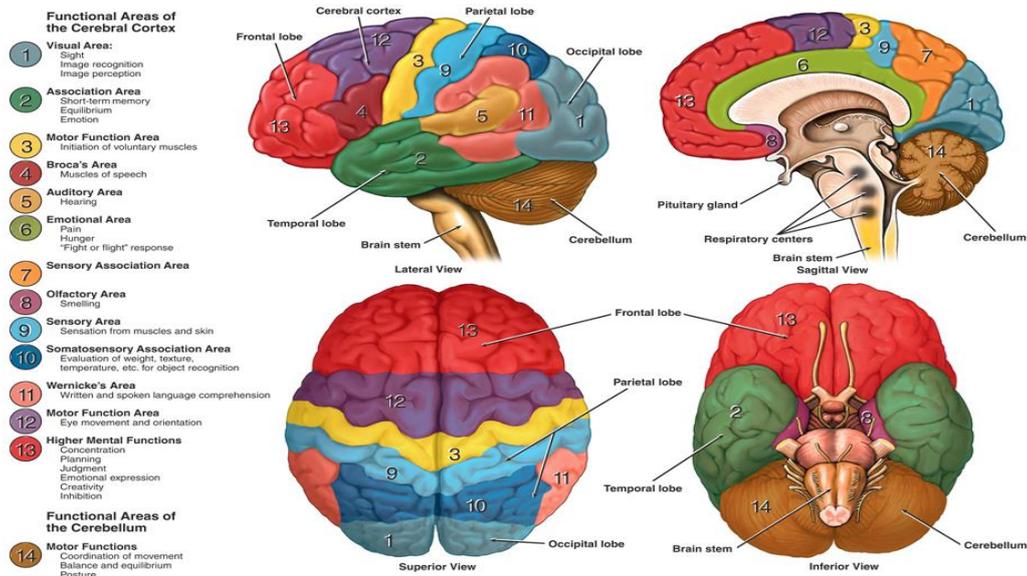
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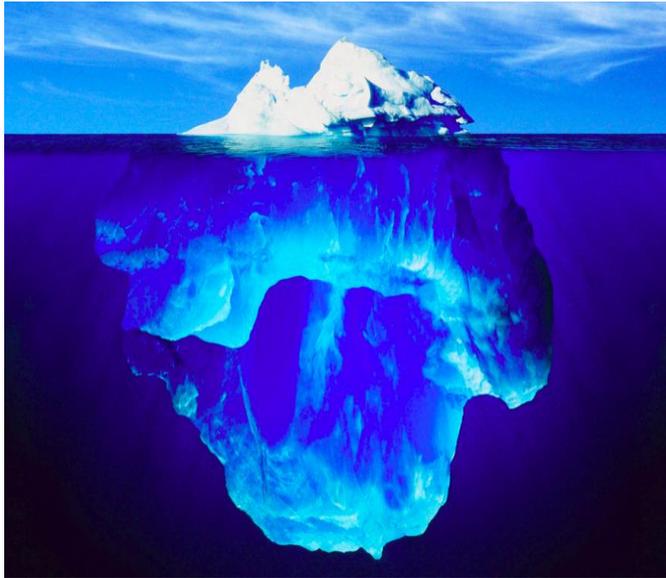
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Appendix

Anatomy and Functional Areas of the Brain



Adapted from Pharma Tips



Tip of the iceberg. Adapted from SAP

