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Chomsky's Theory of Mind: Concepts and Contents

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Abstract

Nowadays, it is much debated among philosophers, psychologists, linguists and artificial intelligence scientists what the mind actually is, where it exists and how it works. Chomsky, the great philosopher and the leading exponent of the cognitive revolution tries to sketch the description of the mind, its nature, mental processes, structure, and its relation with its other cognitive modules. It also examines innate knowledge of the mind. In this paper, the author proposes that the capacities of the mind are different from their ability and other faculties. This paper also describes the theories that are connected with the field of mind, mind and language, linguistic mentalism, Modular mind, Cartesian mind, the mind-body problem, Philosophical grammar, and thought processes like reasoning and perceptions. Firstly, the paper addresses the question of whether Chomsky considers the mind different from the brain, consciousness and thought. Secondly, the paper explores whether Chomsky believes the mind as a separate concept or just as the constituent of language only. Thirdly, arises the question of how Chomsky responds to rationalists and empiricists.

Key Words: Mind, Chomsky, Thought, Analysis, Consciousness, Language, Brain

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Introduction

The mind is described as the 'capacity to acquire intellectual skills' (Otero, 1994, p. 410). Asa Kasher writes in 'The Chomskyan Turn' that 'since human knowledge assumes the mind and the human mind did not exist in the early behaviourist philosophy of language but Chomsky put the mind back into the brain, exposed the fallacies of the basic mechanistic and empiricist view of science, and substitutes theory for scientific methods, it was possible to ask the variety of questions which would make it reasonable for linguistics to become a theoretical and explanatory science.[1] The idea of mind was coined by the Greek philosopher Anaxagoras who used the term *Nous* for the mind. The terms mind and soul were used synonymously in ancient times. Plato used the term soul instead of mind and regarded it as an appeal to myth.[2] Plato argued that the mind has three roles. One is an 'irrational or appetitive' part which identifies and deals with minimal problems such as eating and hunger. The second is the 'spiritual' part which concerns problems of longer duration, making a livelihood, nourishing children, etc. Third is the 'reasoning' part which forces the irrational element to concur with the universal role of the mind, that is. escalating a human mind's quantity of understanding of good in the sense that his or her mind becomes immortal.[3] Most of the Greek philosophers have not described the mind as an individual concept, but they have determined its role along with the body. That is why we see the concept of mind always with the most famous philosophical problem known as the mind-body problem. They have the idea that something is decisive between mind and body. Chomsky in his work 'Language and Nature' employed the terms mind and mental as identical and asserted that these terms have empirical significance. He says that "mental" is to be on a par with "chemical", "electrical" and "optical". These phenomena are regarded as certain aspects of the world as a focus of inquiry. Therefore, the mind is the mental aspect of the world.[4]

Chomsky defines the mind as the innate modular system which consists of a cluster of modules while each module functions automatically and independently of individual efforts. This cluster of modules contains language, thought, understanding, reasoning, decision-making, abstraction, classification, imagination and other

modules.[5] Chomsky regards the mind as the cognitive capacity for the acquisition of language. The human mind has a very vast structure and various functions. He explained the characteristics of the mind with its cognitive trait that is language. There are various modules inside the mind, but language is the special one. He does not separate the mind from the language and insists merely on their interdependence. In addition, the human mind is gifted with intellectual organization and maturation which are the parts of the structure of the mind.[6] Mind crosses through multiple stages and at every stage, there is a distinctive structure and form which is distinctively represented. There are various states of the mind, the first one is language, the second is ideas, the third is imagination, the fourth is the reflection, and the final state is consciousness or thought. While as some states are known, and others are not known. Every state of mind abstracts and analyses data from other states. So, we can say that one state of mind pictures the other state of mind and so on. [(7)(8)]

Chomsky argues a close relationship exists between the human mind and grammar while the mind explores its capacity through grammar. Philosophical grammar is the inborn structure, form and mechanism which each speaker has innately developed. Philosophically grammar is the semantics and syntax produced by the human mind with the coherence of the environment. The speakers of the language naturally use the knowledge of grammar to clarify, differentiate, understand and analyze the propositions.[9]

It has been assumed that the knowledge of the language and the grammar prerequisite rational apprehension and then requires human experience, which finally makes it human perception. The human mind is the storehouse of grammar which includes phonetic, syntactic and semantic rules.[10] The mind possesses a significant part involved in making grammar and structure of sentences. So, Chomsky argued that generative grammar could rely on the human mind.[11]

Language is one of the innate faculties of the mind. Language module works on the processing of the mind. Chomsky observed that the knowledge of the language is determined by the general properties of the mind. Moreover, the human mind is regarded as

the information processing configuration which forms abstract representations and carries out computations to use and modify them.[12]

Thus, we do not have a language in our heads. Instead, what we have in our heads is a system of rules that decides the properties of expressions over an indefinite range.[13] The author believes an individual is an active interpreter, rather than a passive recipient, of dealing with sensations and reflection. Sensations can exist only because of the cognitive activity of the human.[14] The capacities of the human mind are capacities of the human brain. The mental phenomena are entirely natural and are caused by the neuro-physiological activities of the brain.[15] He believes that human knowledge of language can be studied based on the computer metaphor of the mind.[16]

Chomsky used the term mind/brain, having the same significance and reference which implies that the mind is the reflection of the brain.[17] Mind is the software part, and brain is the hardware part. The mind can't think in empty state and can't work without rules and principles. We cannot perceive mind but can know it by inference, analogy, experience and understanding. The mind has three dimensions which could organize mental state representation. The three dimensions of the mind are rationality, social impact and valence. The categories of time and space are preconscious organizing features of the human mind, a scaffold upon which we are capable of understanding the physical world of objects. Space is just like a window to look into the world. While time parses the overlapping events into discrete episodes and arranges those events into a temporal framework. The component of the brain allows us to construct a representation of the world in a spatiotemporal context that affords the ability to simulate past experiences in order to make predictions about the future, and ultimately use this information to direct action in the present. Reasoning acts as a bridge between the mind and language. The mind works on the principles of causation.[18] We can know much about the human mind if we can know about memories, thought processes, sensations, perceptions, and behavioural processes. All these concepts have their affinity with the mind. The mind is concerned with all mental phenomena. While a "mental phenomenon" is to be understood as the

phenomenon that is exclusively capable of consciousness. It would be more useful to say that all mental phenomena fall into some manageable number of categories. Traditional research has shown that the mind has three essential capacities or faculties, namely, cognition (knowing), affection (feeling) and volition (willing). Cognition refers to encoding, storing, introspection, reasoning, intuition, inference, processing, and retrieving information. Affection refers to the emotional interpretation of perceptions, information and understanding. Volition refers to the connection between knowledge and affect on behaviour. It is connected to the use of will, freedom and choice. So, each mental phenomenon was supposed to be the case of the operation of the faculties. Mind is different from the brain, and they also differ in reference. The brain is the physical and physiological part of humans which can be touched or visualized directly. Mind is the operations occurring within the brain. The brain, which directs the activities of the nervous system, contains billions of nerve cells. We also know this through the discipline of neuroscence, which is a science that studies the human brain. According to scientists, the mind exists somewhere within the brain. The mind has its own world, information system, and programs. Physically, the brain is a somewhat nondescript, walnut-shaped mass of tissue. The neurons are intricately connected and function collectively to control all aspects of behaviour. The mind is the input operator which operates on the data. Data is collected by sense organs and the mind uses it to interpret the information. The internal concepts in the mind cannot be deleted or erased from it, but the external concepts which get stored through experience or sensations can be erased. The brain is a digital computer, and in earlier times, the computer was often called 'electronic-brain'. Therefore, the human mind has characteristic functions like thinking, doubting, decision making and rational apprehension. While the modifications of the mind are feelings, volitions, desires and judgments, and the modifications of the brain are position, figure and motion.

There are many different views on the concept of mind:

i. Descartes defined it as "mind is a thinking thing" (Alanen, 1989)

ii. Gilbert Ryle defined it as "the mind is one's ability and proneness to do certain sort of thing" (Ryle, 2009)

iii. Armstrong said "the mind is the Brain" (Armstrong, 2002)

iv. William James said "the mind is stream of consciousness" (James, 1892)

v. Chomsky defined it as "The mind is the capacity and container of mental processes" (Chomsky, 2006)

vi. Hobbes defined it as mind is the interaction of material components (Heil, 1998).

vii. Searle said mind/consciousness is a physical property of brain.[19]

viii. Nagel said mind is either actually or potentially conscious.[20]

ix. Darwin defined it as mind/thought is the secretion of brain (Carter, 1898)

Continental rationalists and British empiricists reported deductive and inductive processes for determining the valid knowledge of the human mind. However, deductive and inductive reasoning plays an important role in the operations and structure of the mind, whereas deductive logic makes causation and sequence of events possible and inductive logic formulate and creates new thoughts from the arguments of observation and calculation and makes acquired ideas possible. Immanuel Kant also synthesized Inductive and deductive processes to put forward his theories like synthesis and categories of understanding. Everything in this universe, according to Kant, is the combination of sensation and understanding. So, Chomsky, on the one hand, reformed rationalism and empiricism and regarded the mind as both an innate and acquired rule-governed system while on the other hand, he refuted some claims of rationalists and empiricists in his theory of neo-rationalism and neo-empiricism.

However, thought is the mental system. The mind cannot think without information. It has the power to analyze, simplify, repeat, synthesize, produce, affirm, repel, and abstract. So, the mind requires data on which it operates with the help of reasoning. Humans have their own information in mind to operate, but it will not become mature and, cannot work until the information comes

from the senses. It has definite rules exposed by philosophers and psychologists which exemplify the processes of the mind. Chomsky states about the nature of the mind as:

The abductive principle (pecking of a chicken) employed by Charles Sanders Peirce "puts a limit upon admissible hypothesis" so that the mind is capable of 'imagining correct theories of some kind' and discarding infinitely many others consistent with the evidence. (Chomsky 2007, p.17)

Nature and Structure of Mind

Mind is defined as the series of thoughts, or simply we can describe it as the stream of consciousness. Most philosophers regard mind as made up of human experiences, ideas, and stream of perceptions. The fundamental properties of the mind are thinking, doubting, willing, abstraction, understanding, perception etc. The fundamental properties of the body are extension, motion, solidity, shape and size. The mind is an abstract structure of many mental programs, and the human body, including the brain is the matter. That is why some philosophers believe that the world of mind is selected as the 'realm of forms' and the world of the body is the 'realm of matter'. (Sedley, 2016) The problem of the mind is interesting and critical problem that starts in Greek philosophy, then simplified and analyzed in modern philosophy and finally separated in psychology. Because psychoexaminesmined concept of the mind through perceptions, reflections and behaviour processes and philosophy explores this problem through rational apprehension, linguistic analysis and logical investigations.

The mind is a biological information system with definite powers and limits. The reality that 'admissible hypothesis 'are accessible to this specific biological system accounts for its capability to construct rich and complex explanatory theories, but the similar properties of mind that present admissible hypothesis may eliminate other successful theories as unintelligible to humans. Several theories might not be among the acceptable hypotheses investigated by the explicit properties of mind that adjust us 'to visualizing accurate theories of some sort', although these theories might be available to a differently ordered intelligence. (Chomsky 1975: 15-56)

Mind is a set of programs central to consciousness, feelings, imagination, and decision making. The mind works on the principles of causation. According to Ramsey, causation can be interpreted into two ways; *inductive* in which the mind works on observations and data collected from the senses, but, in *deductive* reasoning, the mind works on innate data. Mental causation is a cause-effect relationship which is concerned with the events of the mind. (Ramsey, 2016). Does the mind have causal power? This question is a key issue in modern philosophy although most dualist philosophers try to resolve this question of 'how the mind influences the body and how the body influences the mind'. The human mind has unique properties that can't be alienated from human reality, personal and social. So, the mind is a system of organs of computation designed by natural selection to solve the problems faced by our evolutionary ancestors in forging the way of life.[21]

Nelson Goodman argued that rules are not in the mind, but these principles can be inferred from what the mind does. Principles are not in the mind, just like the theory of gravitation is not in the bodies. Goodman is surprised at the concept that one should study the human mind exactly as one would approach any organism, or a lifeless device of nameless properties that modify its state through time.[22] The mind is designed to use abstract variables and data structures, and in some circles, there is still a shocking and revolutionary claim that the structures have no straight matching part in the child's experience. [23]

Knowledge is the product of the mind, and knowing is the process of the mind. It is known as a cognitive process because it is connected to the human mind. We cannot be acquainted with the sensations only, so we need the the mind to process those sensations. Knowledge is byproductduct of sensations and the mental processes. Various philosophers who are connected with linguistic mentalism have accepted Ryle's claim that knowledge is a matter of either knowing how to do something or knowing that something is the case.[24] Chomsky has refused to accept the dichotomy between knowing how and knowing the details of knowledge that a person might have. He suggests that we might have tacit knowledge – propositional knowledge that we are unaware of having which

guides our behaviour. It is this tacit knowledge of grammar that linguistic mentalism attributes to language users.

According to most of the linguists, language users have intuitions about properties of language and relations between the sentences of their language, on the basis of which they are able to make intuitive judgments about those sentences.[25] It is significant to remember that there are unusual types of mental states, processes and behaviours. Just as there is not such a thing or substance termed as 'mind', so, there is no general description of mind or mentality; While Anthony Kenny agrees with the Chomskyian thought that the mind and its faculties are modular. The structure of the mind also has different compartments, and each compartment process individually. He called Chomskyian deep structure and mental representations empirical. Kenny accepts the Chomskyan thesis that mental structure is innate and the inferred knowledge of the language, its operating rules and norms cannot be brought into observation and practice. It implies that the form of the language is rational and not empirical. Human language is one of the naturally gifted modules of the mind. To know about this module, we can know about the human mind. [26]

Chomsky was a central figure in developing the concept of the mind and its relation to logic and language. According to Chomsky, Language is not innate, but language learning process is innate. A child can learn any language like English, Chinese, Spanish, Urdu, Arabic, and Japanese; we cannot point out that the knowledge of English to the child is an innate module. It looks sensible to hypothesize that the principles of general linguistics concerning the nature of rules, their organization, the principles by which they function, and the kinds of representations to which they apply. These could form all constituent parts of the innate condition that "puts a limit on admissible hypothesis.[27]

Evidently, a child is born with a variety of abilities while the ability of learning and maturity are the most significant. Humans acquire definite types of grammar is the ability to learn and choose. However, the ability to mature does not come from learning, but it occurs in humans naturally. So, the ability to mature depends on certain conditions like environment, time, mechanism and freedom. Ability

is different from the capacity of the mind while the capacity of the mind results in ability. However, the former is potential in its form, and the latter is the actual. Every person has the potentiality to read, write, abstract, think, and doubt. But everyone cannot actualize these potentialities. It implies that only some persons are using their thinking power and abstraction to distinguish between right and wrong, truth and falsehood and valid and invalid. The flying of birds is their capacity, and some birds cannot use their flying capacity to compete with falcons, vultures, and Asian geese. The abilities of humans could enfold only if a person gets a suitable and sophisticated environment. Human mental capacities are universal while the abilities of humans depend upon their manifestations. The human mind is the capacity to build up skills. The major and most essential intellectual skill is mastery of the language and thought. While other skills like knowledge of arithmetic, aesthetics, and art are acquired by human beings through experience or advancement in these languages. One who can understand the language of these skills can easily understand these skills.

Kenny writes that a capacity is itself an ability, but a second-order ability, the ability to acquire abilities. However, the author is not quite satisfied with this idea because, without capacity, the ability has no meaning. Capacity is the bedrock of abilities. Humans possess Capacity as a program for language and thought and other modules, and ability is the use of this capacity in endlessly creative ways. Intelligence is a mental ability, but the program of intelligence in the mind is the capacity. There is an individual capacity in everyone to acquire knowledge, but abstract thinking or reasoning, problem-solving and decision-making are different abilities. The human mind has one capacity for one module but different abilities for different things. The ability of software programs to fit into a chip (memory card) of a mobile phone or the program of a computer into the hard desk is not a physical object nor is it spirit. Nevertheless, this is simply the design to clarify the capacity and ability of the concept.

Thought and language are mental processes. Studying the nature, acquisition and development of the language is really the studying of the human mind. The human brain is the source of the human mind. Human minds are the capacities which lie in an abstract form. The human mind is just like other systems of our body like the

respiratory system, immune system, and digestive system. This type of system is abstract and could easily be known by its modules of language, thought, reasoning and perception. Thus, the human mind is not spiritual, but it is made up of human consciousness and experiences. The mind is not a physical object which has length and breadth. However, the mind has a definite form, space and field; these are innate to the human mind. However, the problem is that we cannot see the form, space and field of mind though we can infer. The field of mind is different from the electric and magnetic fields. In electric field charge, attraction and repulsion show their influence and magnetic field shows magnetic influence which determines that the field of mind shows its influence on processes like consciousness, thought, reasoning, abstraction, decision making and inference. Mind's capacity is just like the capacity of an ocean for filling up with water or the capacity of an egg for its egg yolk and albumen. It implies that the capacity of the mind contains mental processes and other influenced processes which could be retrieved from society. So, the mind has an infinite capacity to memorize, arrange, correspond, and cohere and abstract novel approaches.[28]

Abilities are the representations of capacities in the same way, just like language is the representation of our thoughts. Ability is qualitative, and capacity is quantitative. Capacity is the power, space and room of the mind, and ability is its embodiment. Different abilities have different kinds of relationships with each other. There is a capacity for each module of the mind that is, the capacity to store data and the capacity to classify data into different chambers of the mind. Even so, the relationship, correspondence and coherence form the structure of the mind. The ability to multiply, the ability to divide, the ability to analyze, and the ability to take square and cube roots are also parts of the structure of the mind because these things denote the relationship between different abilities. Any kind of problem in the capacity of the mind can lead to the problem in his ability. Ability is just a skill of an individual, but capacity is the seed of the skill. Now it is the creativity which helps to turn the capacity of the mind into ability. Capacity is the mind's inherent structure and development. (Kaufman, 2016)

Chomsky describes that the mind means the mental feature of the world. It looks from the Chomskyian thought that Chomsky didn't

divide mind from consciousness. He regards consciousness as the capacity of the brain. In many of his works, he quotes that consciousness is a higher level or emergent property of the brain of natural biological order, just like mitosis, photosynthesis, respiration, digestion, etc.[29]

It has been believed that only physical things have structure. But recently, studies have envisaged that mind has a structure just like atoms, neurons and Genes have. Chomsky has described and emancipated this structure in the form of a language module. It has been argued that not only human beings have abilities structured in this way; we can determine the structure dormant in the operations of a pocket calculator by discovering the algorithms that it employs. To find out the algorithm that a calculator uses, say, for the withdrawal of square roots, calls for mathematical rather than electronic enquiry. When assuming the human mind, the physiologist is in a position similar to the electronic engineer. To prove that it is probable to discern a language without having the capacity to use it, Chomsky offers the following argument:

Imagine a person who knows English and suffers cerebral damage that does not affect the language centres at all but prevents their use in speech, and comprehension, or let us suppose, even in thought, suppose that the effects of the injury recede and with no further experience or exposure the person recovers the original capacity to use the language. In the intervening period, he had no capacity to speak or understand English, even in thought, though the mental (ultimately physical) structures that underlie that capacity were undamaged (Chomsky, 1975).

As far as Chomsky is concerned, the capacities of the mind remain undamaged because the structure of the mind is modular. A default in one module is not the default in the whole structure. However, the modules of the mind are linked to each other at some abstract level. It appears that there is a separate modular system for speech mechanism and visual mechanism.[30] Chomsky believes that the mind is not immaterial, but the mind and its structure is simply a physical structure investigated at a certain level of abstraction. But expressions like Mentalism and immaterialism are insensitive, anything one may imagine of immaterialism because they cover the fact that the criterion to recognize a mental state is not identical to

those for a physical state. Two humans can be in the same mental state while being in a different physical state and can be in the same physical state while being in different mental states. To utter this does not cause any question about materialism since it is uniformly true of computers that there is no one-one correlation between software structures and hardware structures.[31] Now, if we compare Chomsky's concept of the mind as an immaterial entity with the Descartes *Pineal gland* which is considered the sole seat or the place where mental processes are formed, then we must understand the core subject that why Chomsky is recognizing the mind as substantial and material. It seems from this analysis that Chomsky corresponds the mind to the brain because the form is the representation of the matter, and anything which we can prove, infer and determine through different valid criteria and methods are true, substantial and corporeal. So, Chomsky does not fix mental processes as the functions of the pineal gland but from the whole brain.

Chomsky accepted the Cartesian doctrine that the mind is governed by innate structure, and in many places, he imposed critique to empiricist doctrines. [32] Chomsky raised the question of innate structure: how did the mind develop this innate structure? He mentions two views in his answer, in one phase, he took Lorenz's notion that 'this is just a matter of natural selection'. And in a new phase, he took Pierce's notion that 'nature fecundates the mind of man with thoughts which, when these ideas grow up, will resemble their father, Nature'.[33] So, the mind is the product of this universe. Descartes, a good explorer of deductive logic, argued that the truths which are innate in the mind are deductive[34] in nature. Rationalists presented their philosophical views, which are based on deductive reasoning, and they grounded most of their thoughts either on mathematical or on natural science like physics. The successors of Descartes have shown little interest in his work 'Cartesian Linguistics', and we might assume that Chomsky was not satisfied with some views of Descartes about the human mind. Nevertheless, they had comparable insights about creativity and its connection with innateness, and they intended their study of language and the mind towards the understanding of the problems they posed. These ends about creativity and innateness and their clarification are

connected to Chomsky's difference between two kinds of advancements to the study of the mind; rationalist and empiricist.[35] Moreover, Chomsky discarded Descartes's Cartesian dualism and squabbled that his own dualism was refuted by the last part of its own century, not because it said objectionable things about the mind but because it presumed a 'contract mechanics' regarding the matter.[36]

Rationalists and Empiricists are antagonists to each other. While continental rationalists believed that the human mind is prepared with innate structure. Moreover, these philosophical methods imply that some ideas in mind are innate, like the idea of symmetry, form, structure, rules, relation, and sequence. [37] On the other hand, empiricists had thought that the mind has no innate structure and that innate structure is comparatively irrelevant in unfolding our mature cognitive capacities and ability. For illustration, we look to British empiricists Locke and Hume, who maintained that, a child is born with 'tabula rasa'. The term '*tabula rasa'* means blank slate or white paper. As per empiricists, human perception is the source of all our mature concepts and beliefs as well as our mature cognitions.

However, it is essential to accept that even extreme empiricists don't claim that the mind possesses no innate structure. Rather, empiricists endeavoured to express the maturity of our mature cognitive selection by adverting to a least of innate structure. Consequently, empiricists usually stress that the mind has just a few learning mechanisms, and these mechanisms are known as 'domain-general', that is, they function over a wide range of cognitive domains. It is a matter of truth that during the first half of the twentieth-century ideas of empiricists dominated psychology, sociology and other sciences of human behaviour.[38]

The behaviourist psychologists like Watson and Skinner highlighted the function of learning, conditioning, and reinforcement in the justification of human behaviour. As a result, it implies that British empiricists have deficient their dominance because modern psychologists, social scientists, and even postmodern and analytical philosophers began to stress the innate foundation for a variety of cognitive capacities. Nevertheless, Empiricists are critiques of rationalists they grounded their philosophy purely on inductive

logic.[39] According to them, there is nothing deductive in mind. No ideas are innate to the mind. Ideas are acquired in the processing of the mind claimed by John Locke. John Locke believed that knowledge comes from the sensation or ideas furnished to the mind by experience. Empiricists believed that language is a matter of social institution, created by humans to communicate, and to the young through training.[40] Immanuel Kant was a great rationalist but later, he withdraws himself from some of the theories of the rationalists and Empiricists. Corresponding to mind, he argued that in the mind there are some universal characteristics (cause-effect principle) of experience which are found in all mental experience, Kant called them categories, the important among the twelve are quantity, quality, relation, existence, probability and causality. In the absence of these categories of knowledge, no thinking is possible. Now because these categories do not come from outside but are found to be present before experience, it can be said that while the material of knowledge came from outside, the mind gives shape to it. In Kant's logical analysis, the reason is the faculty inference, and as there are three kinds of inference, so corresponding to them, there are three ideas. From the categorical syllogism, the idea of an absolute subject could be derived that can be recognized with the concept of the immortal soul. The hypothetical syllogism derives the idea of the final synthesis of all phenomena called the world. The idea of an absolute unity of all the experiences, that is, God, can be derived from the disjunctive syllogism. Kant has distinguished between two fundamental aspects of experience perceptual and conceptual. The former is based on experience and the latter on intellect. Kant also argued that space and time are mental concepts, not objects themselves, and causality was one of the categories (a synthetic a priori concept) that we bring to experience and which make experience possible without such categories.

Thus, rationalists are regarded as natural scientists as they insisted on the innate mechanism of mind. The parts which consist of the mind are known as mental organs. However, the traditional term for mind is 'faculties' and now we call them modules. These modules or parts of the mind are regarded as innate, and these are inbuilt into the mind from birth. [41] Chomsky writes that Descartes has demonstrated two fundamental properties of the mind, one is

understanding, and the other is will, which further includes rules and capacities.[42]

Chomsky has asserted that much of the conclusions and arguments support the rationalist formation of knowledge as opposed to empiricism. He argues that new research in linguistics and cognitive psychology have shown the valid occurrence of the a-priori principle, which indefinitely resemble the classical innate ideas espoused by Greek idealist and Continental rationalists. Katz supports Chomsky concerning the innate structure of the mind and holds that the speakers of a language have unconscious knowledge of the rules of the language. It is impossible for a child to learn a language without having certain kinds of innate knowledge. They believed that a child is gifted with code-breaking system in his mind, and the child can easily break the code so fast without any kind of training by themselves. They infer that a child must equate his innate information regarding coding and decoding innate ideas and could use this performance in the use of language. It has been argued that researchers know much about the theory of language, and now we can easily find out the extensive foundation for differentiating between the rationalist hypothesis and the empiricist hypothesis. Most new research the support rationalist conception of human knowledge. Cooper visualized that Chomsky's neo-rationalism differs from the rationalist concept of Descartes and Leibnitz. Cooper evaluated that Chomsky used the term disposition instead of innateness. Descartes and Leibnitz imply from innateness that human being knows certain ideas and truths prior to experience. Chomsky understood that innate knowledge is generally possessed by human beings, and for rationalists, innate knowledge is the knowledge of universals but not of particulars. Therefore, continental rationalism and British empiricism form the base for the neo-rationalism and neo-empiricism of Chomsky.

So, the debate between Empiricists and rationalists merely emphasise the existence of innate structure and acquired structure.[43] According to Chomsky, humans can be considered as free and creative only because of human intelligence and innate mechanism. Thus, Chomsky rejected the thesis that the mind could be reduced to a physical or material and argued as:

The idea of 'physical world' is open and evolving. No one believes that bodies are Cartesian automata…or that physical systems are subject to the constraints of Cartesian mechanism, or that physics has come to an end. It may be that contemporary natural science already provides principles adequate for the understanding of mind. Or perhaps principles now unknown enter into the functioning of the human or animal minds, in which case the notion of 'physical body' must be extended, as has often happened in the past, to incorporate entities and principles of hitherto unrecognized character. Then much of so called 'mind-body problem' will be solved in something like the way in which the problem of the motion of heavenly bodies was solved, by invoking principles that seemed incomprehensible or even abhorrent to the scientific imagination of an earlier generation (1980: 5-6).

Chomsky did not say that the mind-body problem is fully rejected, which was the hallmark of the philosophy of mind in early modern philosophy. He states that there are many equal contemporary theories which favour the mind-body problem. So, regarding the mind-body problem, it was quoted in his work (Language and Nature, 1994) like this,

There is, I think, a good deal to learn from the history of the sciences since they abandoned common sense foundations, always with some uneasiness about just what they were doing. We should by now be able to accept that we can do no more than seek "best theories", with no independent standard for evaluation apart from contribution to understanding, and hope for unification but with no advance doctrine about how, or whether, it can be achieved. As Michael Friedman puts the point, "the philosophers of the modern tradition", from Descartes, "are not best understood as attempting to stand outside the new science as to show, from some mysterious point outside of science itself, that our scientific knowledge somehow 'mirrors' an independently existing reality. Rather, (they) start from the fact of modern scientific knowledge as a fixed point, as it were. Their problem is not so much to justify this knowledge from some 'higher' standpoint as to articulate the new philosophical conceptions that forced upon us by the new science". In Kant's words mathematics and science of nature stand in no need of philosophical inquiry for themselves, "but for the sake of another

science which is metaphysics. Actually, Chomsky argues that Kant has justified metaphysical knowledge but this knowledge may exist in between cognitive science and linguistics. Somewhere there is a boundary and within that boundary, science is self-justifying." (1995,. 7)

Consequently, from the ideas of Chomsky regarding rationalism and empiricism, it implies to state that the contemporary contribution to strengthening the concept of mind in the field of psychology, linguistics and other branches of knowledge is nothing but the reformation and extension of modern rationalism and empiricism. Though there are many things in these methods and philosophies which they have not clearly explained and understood their ideas are still considered the hallmark of new research and advancements. It seems to me that in future we could know more about rationalism and empiricism only if we advance in analytical philosophy and multidisciplinary science.

Conclusion

Chomsky is a great exponent of analytical philosophy and the philosophy of mind. In his works, we mostly see the mind along with language and other components, but the sole basis of his every concept is the mind. I believe that he has not talked much about the human mind and he has not perfectly detached the human mind from the brain and language. The human mind is the storehouse of all mental processes, and this storehouse is always conscious not unconscious. Analytical philosophy unfolds the knowledge of the human mind with clarity and precision. It has differentiated mind from its processes like thought, consciousness, abstraction, reasoning, decision-making, and imagination. The role of analytical philosophy is to uncover what is covered and to simplify what is vague. It seems to me that Chomsky has much influenced by rationalist philosophers like Plato, Descartes, Leibnitz, Kant, their innate mental structure as well as from empiricist philosophers like Aristotle, Locke, and Hume, their theory regarding the role of acquired experience and societal structure.

Chomsky has given a definite and determinate form to the human mind which it had lost some two hundred years ago. Chomsky's works in the field of philosophy of mind reflect three central theories;

rationalism, empiricism and analytical concept of mind. He argued that there are some innate truths which he called the inner structure that cooperate with the outer and make the mind. Chomsky argues that the mind is actively performing its functions. There are some innate ideas in the mind which could help the human mind in performing its activities. Not only this, the human mind is incomplete without the human perceptions that one acquires from society or the environment. Chomsky showed the intense role of the mind and its modules and processes in the selection of grammars. He believed that every language possesses innate grammar mechanisms and potentiality. Chomsky writes in his work 'Language and Mind' that 'we live in the age of behavioural science not in the science of mind'. This is a very critical issue; on the one hand, he is talking about the science of mind, and on the other aspect, he is ignoring the science of mind. I believe that we are living in the age of science of mind not in behavioural science because most of the mental events and mental structure cannot be understood by human behaviour.[44]

It implies that the mind is a capacity and possessor of mental processes. The human mind has the capacity to process language, thought, emotions, memories and perceptions. However, it seems that Chomsky does not determine in his works whether this capacity is conscious or unconscious in processing the ideas. The human mind is a naturally developed system with distinct modules. The various modules of the mind are thought, language, perception, and reasoning. The human mind can work without sensations, but sensations cannot work without the mind. It is the significant contribution of analytical philosophers who unveiled many mysteries about the mind. We can know more about the mind if we research deeply with interdisciplinary studies which investigate the mind in relation to cognitive science, computational linguistics and Artificial intelligence system.

The future of mind study is very interesting with a broad spectrum. The mind shall be explored more, and humans can reach its other modules, which are still unreached. It is the wonder of knowledge from Chomsky who has brought the mind to a concrete and decisive level. We need to know more about the mind so that we can use its exploration in other fields of study. The author believes Chomsky

has unfolded the mind through language and we can unfold it through other modules too. However, if we could become successful in knowing the whole construction of the mind, then in future we can study the mind of other organisms like birds and animals more efficiently.

Thus, Chomsky has given the concept of form and meaning which connects the mind with the outside world. He acquired all this when he related the mind with the cognitive module of language. It has been argued that the concept of language is considered as one of the modules of the human mind as is the concept of thought. So, in the future, we can make many discoveries in the field of mind only when we relate it with other multidisciplinary branches like artificial intelligence, mathematics, neurology, sociology and psychology. Chomsky has paved the way for future explorers to know more and more about the human mind. Therefore, Chomsky is the only philosopher who has identified a systematic way for all the thinkers who want to examine the modular mind along with its allied system.

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[1] Fromkin (1991, p. 82-83).
[2] McGilvray (2014, p.53).
[3] Ibid, p. 52.
[4] Chomsky (1995, p. 1).
[5]See https://www.btritannica.com/biography/Noam-Chomsky/Philosophy-of-mind-and-human-nature
[6] Chomsky (1975, pp. 137-138).
[7] Ibid, p.148.
[8] Toribio and Clark quoted that different states of mind are thought, perception, learning, planning and action.
[9] Matthews (1994, p. 550).
[10] Chomsky (1984, pp. 306-311).
[11] Chomsky (1984, pp. 300-306).
[12] Toribio and Clark (1998, p.2).
[13] See Chomsky (1984, p. 26).
[14] Ibid, p. 65.
[15] Chomsky (2002, p. 64).
[16] See Chomsky (2010, p. 2).
[17] Chomsky (1988, pp. 35-55).
[18]The concept of mind is has been explained systematically in its own field known as philosophy of mind. So, Philosophy of mind is the branch of philosophy that studies the nature of the mind, mental events, mental

functions, mental properties, consciousness, and the role of induction and deduction in the innate and acquired processes of mind.

[19] This statement is used by Chomsky in his work, New Horizons in the study of language and mind, p. 86

[20] Ibid,

[21] Pinker (2003, pp. 1-10).

[22] Chomsky (1984, pp. 311-414).

[23] Pinker (2003, p. 5).

[24] Ryle said that 'Knowing how' is prior to 'knowing that'

[25] D'Agostino (1986, pp.68-75).

[26] Chomsky (2004, p. 162).

[27] Chomsky (2006, pp. 152-53).

[28] Kenny (1994, pp.409-10).

[29] Chomsky (1995, p.10) and Searle (1992).

[30] Ibid, pp. 411-12.

[31] Ibid, p. 413.

[32] Cinque (1994, p. 340).

[33] Chomsky (2006, p. 85).

[34] Deductive reasoning is a type of reasoning in which premises claims for conclusion. Premises are more general than conclusion and the conclusion is true, provided the premises are true. Arguments based on rules, laws or axioms are best expressed deductively.

[35] Chomsky (2002, p.10).

[36] See Lycan (2003. pp. 11-20) and Chomsky (1995, p.), Chomsky rejected Cartesian philosophy and used Newtonian thesis of terrestrial and planetary motion which lies beyond the limits of mechanical philosophy.

[37] Rationalists have mentioned the idea of God as innate but their God is substance, so I have mentioned the fundamental properties of substance and not the idea of God.

[38] Chomsky (1975, pp. 13-15).

[39] Inductive logic is a type of logic in which conclusion is different from what the premises claims. Conclusion is more general than premises and arguments based on observation and calculation are best expressed inductively.

[40] McGilvray stated that empiricists are very close to accept the commonsense view of language.

[41] McGilvray (2014, p.53).

[42] Chomsky (2006, p. 57).

[43] D'Agostino (1986, pp. 61-65).

[44] Chomsky (2006, p. 57).

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