

## CHAPTER - IV

**Language and Mind**

Noam Chomsky, being a linguist, proposes a mentalistic turn in linguistics which again is called a new turn in the philosophy of language in general. It is claimed that 20th century philosophy has taken a U-turn towards linguistic philosophy. With the appearance of Chomsky the linguistic turn of philosophy has directed towards a new turn what is called **mentalistic turn**. Barring many other thinkers, it is Chomsky who takes the leading role in this regard. Chomsky inclines to say that linguistics is a branch of cognitive psychology and in this regard he insists upon the importance of generative grammar for the investigation of the structure and predisposition of the human mind. Chomskyan mentalistic approach is the outcome of the criticism of behaviourist approach as propounded by Bloomfield. According to Bloomfield a mechanistic account of language in terms of *stimulus and response* was more substantive and more scientific than the traditional mentalistic description of language as a vehicle for the expression of thought. Besides Bloomfield, we can also cite the name of Skinner, an eminent behaviourist, who also holds the acquisition of language within the framework of behaviouristic learning theory.

Chomsky has severely criticized the behaviouristic approach on many accounts. For him one of the most inherent property of language is its creativity, which cannot be apprehended by the behaviouristic psychology. It is true to say, Chomsky holds, that a child of five to six years of age can produce and understand an infinitely large number of utterances, which are not previously encountered. Behaviorists learning theory, however, would like to say that there underlies certain networks of habits and associations in the behaviour patterns of human beings through which they can understand new sentences on the basis of old ones. But Chomsky rules out this standpoint. Chomsky, further inclines

to say that the terminology of behaviorism such as *stimulus*, *response*, *habit*, *conditioning* and *reinforcement* etc, though precise and could be applied to language, is so loose that it could cover nothing specifically and hence devoid of empirical content.

We think Chomskyan criticism of behaviorism is cogent to some extent. Chomsky, however, does not rule out the relevance of behaviorism in case of language acquisition. What he wants to say is that the behaviourist account of the acquisition of language, which is based on *stimulus and response*, fails to cope up with the problem of creativity. Chomsky further goes on to say that the grammar of a language is an idealized description of the linguistic competence of native speakers of that language. Any psychological model of the way this competence is put to use in actual performance will have to take into account a number of additional facts which the linguist deliberately ignores in his definition of the notion of grammaticality. The proposed psychological relevant facts include the limitations of human memory and attention, the time it takes for neural *signals* to pass from the brain to the muscles that are involved in speech, the interference of one psychological process and so on. Even many grammatical sentences may not in fact occur naturally and hence difficult to understand by the native speakers within behaviouristic and psychological parameters. Such sentences even will contain a variety of mistakes and distortions due to the malfunctioning of the psychological mechanisms involved.

It is important to note here that although linguistics and psychology take a different point in examining language, still there underlies, says Chomsky, a close proximity between these two disciplines. When Chomsky, understands linguistics as a branch of psychology, he however, does not hold that linguist takes a turn from the investigation of language to the investigation of the use of language, nor he does hold that it even takes a turn from linguistic competence to linguistic performance. Rather he is interested to the scientific study of language, or more specifically generative grammar which has a contribution, of course, a very special contribution to our understanding of mental process. Linguists may come closer to psychology not for making any substantive change

in subject matters, but for the ultimate significance of its results.

Elsewhere, in his later work, Chomsky pleads for *intuitions* of native speakers i.e. his mental representation of the grammar of this language. For him the intuitions of the speaker rather than the sentences themselves are the true object of description. One may, however, think that Chomsky's appeal to the intuitions of the native speaker implies some relaxation of the standards of rigour and objectivity characteristic of Bloomfieldian linguistics. We think this is not to be the case because Chomsky does not think that the speaker's intuitions are immediately accessible, nor does he say that they are equally reliable. In principle, Chomsky would like to say that the questions relating to the acceptability of sentence and its implications fall within the scope of the native speaker's intuition and hence are subject to empirical verification. But from this it does not lead us to say that Chomsky by appealing native speaker's intuition actually endorses behaviouristic psychology as expounded by Bloomfield and Skinner.

In order to substantiate mentalistic standpoint, Chomsky renounces or rebuffs behaviouristic psychology and thereby pleads for philosophical implication of generative grammar. Although the concept of grammar or more specifically universal grammar was appeared in the 13th and again in the 18th centuries, the connection between logic and grammar was made explicit and given some kind of philosophical justification. In fact the so-called logic as propounded by Aristotle was subordinated by grammar. With the appearance of Chomsky, the concept of universal grammar has been revived. In fact Chomskyan version of universal grammar makes the same assumption as earlier versions do about the universality of logic and about the interdependence of language and thought. Chomsky seems to have conceived that the empirical study of language is far more relevant than logic to the philosophy of mind and also holds that the so-called philosophy of language also contributes to linguistics. Both Smith and Wilson have neatly summarised the originality of Chomsky in a recent introduction to the theory of language and of linguistics. They say, " ... he (Chomsky) was probably the first to provide detailed

arguments from the nature of language to the nature of mind, rather than vice-versa ”. (1)

According to Chomsky, language gives rise to evidence for mentalism. Language equally provides a belief in the existence of mind. But this point often raises debate because the so-called mentalism is often equated with either idealism or dualism as propounded by Bloomfield. But Chomsky is neither an idealist nor necessarily a dualist. By introducing the concept of mentalism, Chomsky goes on to say that the acquisition and use of language cannot be explained without an appeal to principles which are currently beyond the scope of any purely physiological account of human beings. Chomsky does not hold that mind is some non-physical entity distinct from the brain or any other part of the body. Rather he withholds the supposed logical prejudices of psychologists and behaviorists who insist that everything that is traditionally described as mental is the outcome of simple physical processes. This indicates that like the behaviorists and psychologists, Chomsky is not rigorous in addressing his theory of mentalism. Thus, it is claimed that Chomskyan mentalism has both positive as well as negative aspect. His negative aspect of mentalism is far more interesting and controversial than his positive aspect of mentalism, as it is anti-physicalism or anti-materialism and very often anti-behaviourism. We think that behaviourism is an inner form of materialism which aims to restrict the subject matter of psychology to human behaviour and thereby sets out to explain all forms of behaviour on the basis of deterministic physiological and biochemical processes. Such form of materialism is pleaded for Bloomfieldian form of behaviourism and thereby equally discourages many linguists from engaging in any serious work in semantics. But such form of behaviorism as propounded by Bloomfield has been severely criticised by Chomsky as unpromising. For Chomsky behaviorism gradually loses its foothold what it has been acquired a generation ago.

We think that the most pertinent burden of Chomskyan mentalism is to explore the language acquisition device. Acquisition of knowledge regarding language is the process of mind or reason in one hand and the process of

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1. Smith, N.V & Wilson, D.: *Modern Linguistics: The Results of the Chomskyan Revolution*, Harmonds Worth : Perguin 1979, P. 9.

experience of the senses on the other. Those who adhere to the role of reason are traditionally called rationalists and those who stress the importance of experience or sense data are called empiricists. Rationalist, for example, Plato or Descartes, claims that the mind is the sole source of human knowledge, on the other hand, the empiricist, for example, either Locke or Hume, inclines to say that all knowledge flows or springs from experience. Chomsky, however, rightly favours rationalism and thereby inclines to say that the knowledge acquired by mind is innate. Like many rationalists, he holds that mind is not simply a blank slate ( tabula rasa) upon which experience leaves its imprint , but it should be thought of, analogically as Leibnitz did as a block of marble which can be shown into several different shapes, but whose structure imposes constraints upon the sculptor's creativity. The empiricist doctrine has been very influential in the development of modern psychology combined with physicalism and determinism. It holds that human behaviour are wholly determined by the environment. According to physicalism all statements made about a person's thoughts, emotions and sensations can be reformulated as statements about his bodily condition and observable behaviour. Determinism, on the other hand, holds that all physical events and phenomena are subject to the laws of cause and effect. Chomsky's view of man is very different. For him we are endowed with a number of specific faculties i.e. mind, which plays the all-important role in our acquisition of knowledge.

According to Bloomfield acquisition of language is based on inductive generalizations. The only useful generalizations, says Bloomfield, about language are inductive generalizations. Chomsky vehemently opposes the concept of inductive generalization. Contrarily, he holds that it is the prime objective of linguistics to construct a deductive theory of the structure of human language, which is at once sufficiently general to apply to all languages. For him linguistics should determine the universal and essential properties of human language. Here Chomsky calls upon the Russian linguist, Roman Jakobson, who has been one of the most outspoken critics of the Bloomfieldian tradition. Like Jakobson, Chomsky also appears to conceive that there underlies certain phonological , syntactic and semantic units that are thought to be universal,

not in the sense that they are necessarily present in all languages, but in somewhat different sense of the term *universal*. They can be defined independently of their occurrence in any particular language and can be identified when they do occur in particular languages. According to Chomsky there we have a fixed set up of twenty distinctive features of phonology, but not all of these will be found in the phonemes of all languages, Similar situation may occur in the case of syntax as well as semantics. These phonological, syntactic and semantic elements are what Chomsky calls the *substantive universal* of linguistic theory. Chomsky elsewhere calls upon the concept of *formal universal* which determine the form of the rules and the manner of their operation in the grammar of particular languages. For him transformations which relate various sentences and constructions “ are invariably structure dependent in the sense that they apply to a string of words by virtue of the organisation of these words into phrases. ” (2)

As a follower of rationalist tradition, Chomsky seems to have conceived that language works for the expression of thought. He further holds that human beings are innately or genetically endowed with the ability to form some concepts rather than others and that concept formation is a precondition of one's acquisition of the meaning of words. However, Chomsky's concept with language deviates from that of his rationalist predecessors at least on two accounts. This is what makes his contribution to the philosophical discussion of this issue both original and important. Unlike the rationalist tradition, Chomsky makes it clear that learning or more specifically acquiring the grammatical structure of one's native language stands as much in need of explanation as does the process of matching the meaning of a word with its form. Accordingly, it can be said that his formalization of different kinds of generative grammar has set up a new standards of precision for those who wish to evaluate the structural complexity of human languages in relation to the systems of communication. Secondly, he further holds that the nature of language and the process of language acquisition are such that they are inexplicable apart from the assumption that there is an innate language acquisition faculty.

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2. Chomsky , Noam : *Language and Mind*, New York, Hart Brace Jovanovich, 1968 ,

We have already pointed out that Chomskyan understanding of innateness and species -specificity of the language faculty actually hinges on or relies upon the universality of certain arbitrary formal properties of language structure. These formal properties are commonly subsumed under the general heading of structure dependency, which is most obviously the characteristic of syntax apart from phonology and morphology. To say that a rule or principle is structure dependent is to say that the set of objects to which it applies has an internal structure and the rule makes essential reference to this structure as a condition of applicability of its manner of application. The syntactic structure of a sentence can be generated by means of a phrase structure grammar, the rules of which are structure dependent in the required sense. Moreover, relations between corresponding sentences of different types, e.g. *John wrote the book* and *Did John write the book ?* ; *John wrote the book* and *Was the book written by John* ? can be made clear with the help of phrase markers that formalise their phrase structure by means of transformation rules. Compared to phrase structure rules, the so-called transformation rules are more powerful and hence involve in a more complex notion of structure dependency.

We think that Chomskyan concept of *structure dependency* is the key of understanding his theory of mentalism. Importantly, his positive contribution to the philosophy of the mind as well as to the psychology of language acquisition rests upon his recognition of the importance of structure dependency as an apparently universal property of human language and of the necessity of showing how children can come to acquire the mastery of this property in the acquisition and use of language. The so-called mind, says Chomsky, can best be described in terms of a set of abstract structures whose physical basis is yet to be relatively unknown. Language faculty is only one of many mental structures lies within the brain. We think that as far as language acquisition is concerned the mentalism as proposed by Chomsky is not the only kind of mentalism to have been developed in recent years. There are at least four stages in the development of the child's mental processes. Language acquisition, says Piaget, is the transition from the sensor-motor stage, which lasts until the child is about two years old. After that the child turns into another stage what is

called pre-operational stage which lingers till the age of reason (i.e. about seven years old). During this period, the child can manipulate words and phrases on the basis of his prior understanding of language. Accordingly, it can be said, following Piaget that language acquisition is a process of mental development. Chomsky, however, does not agree with Piaget because syntactic structure cannot be accounted for in functionalist terms and that language acquisition appears to be unaffected by differences in children's intellectual ability. Even there are many linguists and psychologists who would evaluate Piaget's view as untenable. Piaget's theory of mental development actually stands between the traditional extremes of rationalism and empiricism. He stresses the importance of experience, particularly sensory motor experience on the one hand and also takes several stages of cognitive development on the other. Likewise, though Chomsky favours rationalism, he, however, does not rule out the essential role of experience in the case of acquisition of knowledge.

### **Language and the brain**

The biological side of language is the subject of increasing research and advances are made possible because of the growing sophistication of available experimental technique and equipment. Recently, it has been revealed from the study of individuals with injured brains that whenever disease or injury affects the left side of the brain, some aspect of the ability to produce language may be disturbed. Individuals with such brain disease are said to be aphasic and their brain disturbances can give us insight into how the human brain carries out its language-related tasks. Aphasia is a broad term encompassing numerous syndromes of communicative impairment. Some aphasic produces a single word whereas others effortlessly produce long but meaningless utterances. It is revealed from recent researches that there underlies a close relation between speech and language on the one hand and the human nervous system on the other. Neurolinguists are very much interested in the correlation between brain

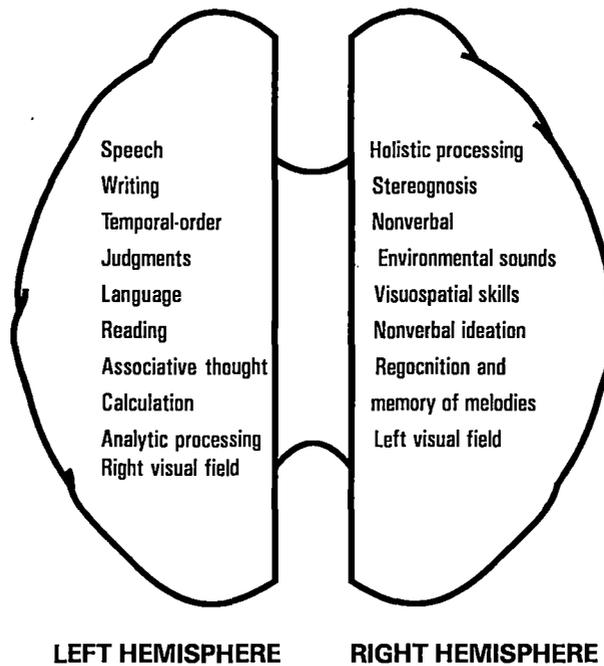
damage and speech and language deficits. It has, therefore, been claimed by many specialists concerning language and brain that the study of language form and use will reveal principles of brain function and equally the study of brain function may support or refute specific linguistic theories. Thus we can say that the locus of language actually lies submerged in the brain. This is justified by Chomsky when he claims that language is the mirror of human mind or brain. Now the most pertinent question is that: where in the brain are speech and language localised ? How does the nervous system function to encode and decode speech and language? Are the components of languages viz., phonology, syntax, and semantics neuroanatomically distinct?

As far as the localization of language within the brain is concerned, it has been held by many that there is a specific region in the brain, which is responsible for language. Anti localizationists, however, hold that speech and language are the consequences of the brain functioning as a whole. Today's scientists however agree that specific neuroanatomic structures, generally of the left hemisphere, are vital for speech and language. For them language is controlled by the left hemisphere. One hemisphere of the brain is specialized for the performance of certain functions is known as lateralization. The process of lateralization is maturational in the sense that it is genetically predetermined, but it takes time to develop . Importantly, lateralization appears to be specific to human beings. It is usually started when the child is about two years old and to be completed at some time between the age of five and the onset of puberty. It is important to note here that lateralization for language is not only the kind of specialization of function that develops in human beings with respect to one hemisphere of the brain rather than another, it has equally been responsible for men's development of superior intelligence. Further, it has also been held nowadays that lateralization is a precondition, both phylogenetically and autogenetically, of the acquisition of language. Consequently, it can be said that the so-called language acquisition begins at about the same time as lateralization does and language acquisition is completed by the time that the process of lateralization comes to an end. That means it becomes progressively

more difficult to acquire language after the age at which lateralization is complete. Thus a particular age is scheduled for language acquisition what may be called as a critical age for language acquisition. The proposal of a critical age for language acquisition, however, is not accepted universally. Case study would reveal that beyond the critical age one could learn or revive language acquisition device. This is supported by the case of the young girl known in the literature as Genie. Genie was discovered by social workers in Los Angeles in 1970, at the age of 13 years old. She had been brought up by her parents in total isolation from human beings and was beaten whenever she made a noise. Consequently, she could not speak. But after having been taken into care, she gradually acquired the process of language acquisition under the counselling of linguists and psychologists. Moreover, she went through the same stage in the acquisition of English as normal children do at the normal age. However within all these things, it is reported, that she has difficulty with all but the simplest aspects of the grammatical structure of English. It has, therefore, been claimed that Genie's case not only confirm the critical age hypothesis, it also revealed that the language acquisition is independent of other intellectual abilities.

Although left hemisphere is, as a whole, vital to speech and language, there are at least three important areas in the left hemisphere, namely, Broca's area, Wernicke's area and the supplemental motor area, which are most vital in speech and language. Although speech is localized in the left hemisphere, it is necessary for the cerebral hemisphere to communicate with each other for speech to function normally. For example, if an object is held in the left hand, impulses travel from the left side of the body to the right hemisphere, and although the right hemisphere would recognize the object, verbalizing the name of the object would require involvement of the speech centre in the left hemisphere. Recent research, however, suggests that the right hemisphere may be limited in its linguistic competence. Right hemisphere is generally unimpaired in grasping the meaning of single words, it performs poorly with

phrases. The following picture of both hemispheres would give a clear idea of performing language acquisition device.



We think that a lot of recent scientific and biological researches would reveal the locus of language in the brain segments. But we do not enter into this theory. Our objective is to substantiate the apprehension of Chomsky who often claimed that language being a biological endowment, is the mirror of human mind or brain. In this regard, we have been talking about the lateralization of language at a very general level. We have seen in the course of discussion that various aspects of language processing appear to be more characteristics of the left hemisphere than others. This does not, however, make sense to say that the right hemisphere has no role in language procession. Certainly, it can interpret single words denoting physical entities without difficulty. However, like the left hemisphere, the right hemisphere is not good enough at the interpretation of grammatically complex phrases. Moreover, although the non-speech sounds are processed directly and efficiently by the right hemisphere, speech sounds are generally passed to the left hemisphere. The left hemisphere, though, is better at associative thinking and analytic reasoning, the right hemisphere is more efficient visuo-spatial processing and the interpretation of

music at all. Thus it is clear that language behaviour involves the integration of several neuro physiologically distinct processes. But whatever it may be the case that the left hemisphere plays a distinctive role in language process.

We think what has been explained above is very much relevant to Chomskyan apprehension of mentalistic interpretation. When Chomsky inclines to say that language faculty is a uniquely human and genetically transmitted capacity which is distinct from, but operates in collaboration with other mental faculties, he is very much held the position of what is explained above. When Chomsky goes on to say that *language is the mirror of human mind or brain*, he equally emphasizes the locus of brain from which language is being generated. Moreover, he elsewhere claims that language acquisition device is a biological endowment and hence more or less is determined genetically. But as far as the neurophysical evidence is concerned, there we find hardly any literature in Chomskyan writings. Thus we can say that the neurophysiological evidence is far from conclusive. But there is no question of doubt that there underlies a genetically transmitted language faculty within the human brain which is very much justified by the slogan of Chomsky : *Language is the mirror of human brain or mind.*

### **Language-Acquisition**

The concept of *Language Acquisition Device* in short LAD is one of the important concepts in understanding Chomskyan mentalism. LAD is different from language learning process. Linguists and psychologists prefer to talk the term *acquisition* instead of *learning*. Why? One plausible reason is that unlike the term *learning*, the term *acquisition* is more neutral with respect to some of the implications to be associated with the term learning in psychology. One can say that although the term *acquisition* is more neutral than the term *learning* in the relevant respects, it is still misleading as it entails something with which

one did not previously have. Apparently, it can be said that if language is thought to be innate as Chomsky and many others held then it can not be acquired. Language, being innate, should grow or mature naturally or in Chomskyan phrase organically. But still the term *acquisition* is supposed to be standard and used more conveniently within the domain of mentalism. Besides terminological meaning, acquisition of language manifests itself in the knowledge and use of particular languages. That means one cannot possess or use language without possessing or using some particular language. Thus the term *language acquisition* can be interpreted as meaning either *the acquisition of language* or *the acquisition of a language*. Although it is true to say that there is some sense in language, namely language faculty, says Chomsky, which can not be acquired, but still there remains something on the part of language that can be acquired. Chomsky has periodically made the striking claim that it is largely irrelevant to bring back the relevance of learning in language acquisition. For him in certain fundamental respects, we do not really learn language. Grammar, for example, says Chomsky, unlike learn grows in the mind.

Language development occurs in all children with normal brain functions, regardless of race, culture or general intelligence. In other words, the capacity to acquire language is a capacity of the human species as a whole. Although different groups of people speak different languages, all human languages have a similar level of detail and complexity and all languages share general abstract properties. Even though languages differ superficially, they all reflect general properties of a common linguistic system typical of the human species. It is further noted that any theory of language acquisition must account for what children do and do not in the course of achieving adult linguistic competence. This rules out the behaviouristic approach of language which holds that the child is endowed at birth with general learning abilities but not with any language specific knowledge. According to this theory linguistic behaviour is moulded by adult speakers ( e.g., a child *learning* a language is corrected when *wrong* and rewarded when *right* ) and initiation plays an important role.

We have already noted that the behaviorist approach of language

acquisition is vehemently criticised by Chomsky . Chomsky agrees that language acquisition cannot be accounted for without passing a linguistically specific system of principle and parameters. For him every healthy child is genetically endowed with a system what he calls universal grammar (UG) or as the Language Acquisition Device (LAD) . However the assertion that children environment plays no role at all in acquiring their native language would be unreasonable. Children surely need to be exposed to linguistic data in order to eventually attain adult competence. In Chomskyan approach the role of the environment is to be source of data. But Chomsky inclines to say that the linguistic data available to the child are themselves impoverished and not sufficient for a child to inductively arrive at a grammar capable of producing well-formed expressions while at the same time not producing ill-formed expressions. The linguistic data that the child is exposed to are streams of sound that may consist of one or more words during any given acoustic event. The acquired grammar is, then, undermined by the data. Chomsky further seems to conceive that language development in children occurs spontaneously and does not require conscious instruction on the part of adults. It is revealed that in a very short period of time children are able to develop very complex linguistic systems, moving from a one- ward stage to multiword stages on the basis of limited and often fragmentary data. According to Chomsky, although adults often imagine that they are teaching children how to speak, there is no convincing evidence that children need such instruction even at time it appears clear that the attempt to instruct children in language can produce frustrating results|

Child     :|     I take a cookie  
 Parent   :|     Oh, you mean you took a cookie.  
 Child     :|     Yes that is right, I talked it.

A more striking example of the insufficiency of overt instruction is facilitating language acquisition can be gleaned from the following story offered by a 4 – year old boy.

One day the dog ate his food and the rooster ate his food and then the

duck did. Then the hay got into the hay putter and the hay putter put the hay where it belonged.

Importantly, the novel word hays putter which the child did not learn from adult speech but simply made up himself. Next, note his use of pronouns both present and absent. Moreover, in the first sentence he uses the possessive pronoun **his** twice, to refer first to *the dog* and then to *the rooster*. We know that the duck is eating his own food too, not the dog's or the rooster's, even though the child does not use an overt possessive pronoun in that case. Importantly, the child has produced an example of what the linguistics literature terms 'sloppy identity'.<sup>(3)</sup> However, there is nothing sloppy as far as the construction of the sentence is concerned. May be it involves mastery of a structure whose properties are not at all transparent. Children are not taught how to produce such constructions. On the basis of these examples, Chomsky concludes that children deductively arrive at a grammar that enables them to both produce and understand novel expressions.

### **Various stages of the LAD**

It is revealed from the studies of linguistic development that children pass through recognizable stages as they master their native language. It may perhaps to be the case that children will pass through a given stage can vary significantly from child to child, the particular sequence of stages seems to be the same for all children acquiring a given language, However, we can mention a few better known stages of language acquisition for children.

#### **Babbling**

Prior to the development of language, all children, regardless of the language, pass through a stage referred to as babbling. At around 5 to 6 months, the child utters sound and sound sequences (syllables such as ba, ma, ga.). Indeed, a number of sounds and syllables of the babbling stage will occur later

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3. | Ross John R. : "Constraints on Variables," Ph.D. dissertation, MIT.

as the child develops language. It has also been noted that certain sounds that occur in babbling appear to be lost when the child begins to use language. As Clark and Clark note : “ ... when children start to use their first words, they no longer seem able to produce some of the very sounds they used when babbling.”<sup>(4)</sup>

### **The one word stage**

After babbling phase, children gradually move way to the earliest recognizable stage of language what may be called one word stage . It belongs to the first year of life or the early part of the second year. At this stage the child begins using recognizable words of the native language. Viewed from the perspective of adult grammar, the kinds of words that occur at this stage include simple nouns & verbs.

### **Multi word stages**

At some point during the second year of life, the child utterances gradually become longer and the one word stage gives way to multiword stages. At this stage children begin to express a variety of grammatical and conceptual relations. Here the child’s language begins to reflect the distinction between sentence types such as negative, imperatives and questions. In this stage of linguistic development, we see the beginnings of a structured language and thereby beginning to acquire the mastery of the broader grammatical features of the language.

## **The Critical period Hypothesis**

The critical period hypothesis claims that there is a genetically determined *window of opportunity* for language acquisition. If the child does not learn first language within this period, then he will never attain full native like mastery of any language. First language acquisition has a much longer time span at its disposal, but it must take place at the very latest before puberty.

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4. | Clark , H, and E. Clark: *Psychology and language :An introduction to psycholinguistics*, New York, 1977, 390.

The second language is acquired after the age of about nine or ten years. It is important to note that any child learns the language of its environment faultlessly in the space of a few years, but as soon as he enters into second language he is facing difficulty in acquiring it unlike first language in the same degree of fluency. It is generally agreed that speech function is lateralised such that in normal right handed people the language faculty is located in the left hemisphere. Aphasia (loss of language caused by brain damage) is then typically associated with damage to the left hemisphere. In some intractable cases of epileptic seizures, the only treatment is the surgical removal of part of the brain. Recovery from such an operation in particular the recovery of linguistic ability is correlated with age. Generally, if the operation is carried out in infancy, recovery is often good, but operations carried out later have a less successful outcome and even at puberty recovery of linguistic ability is extremely rare. However, this may be varied from person to person and thereby suggesting that the critical period is not rigidly demarcated. Whatever, it may happen, it is by and large true to say that the correlation is significant and the critical period hypothesis gives rise to an explanation of that fact.

The critical period hypothesis is also witnessed from the differential linguistic development of Down's Syndrome children with varying severity of the condition. Down's syndrome children are typically very slow in learning and using language. Though in some cases mastery of language falls within normal limits, in severe cases they never develop proper mastery of the syntax of their native language; even though their lexical development may continue through out life, their syntactic development appears to be cut short at around the age of puberty. This indicates that if language development falls into two different categories, lexical development and aspects of syntactic development are parametrically determined. It is this syntactic progress which is cut off at the end of the critical period. Further suggestive evidence is also found in the differential acquisition of sign language by the deaf at different ages. In an elegant paper Rachel Mayberry showed that subjects who acquired American sign language as a second language after childhood outperformed those who acquired it as a first language at exactly the same age. It would appear that this

second language superiority was counter evidence to claim about the privileged status of first language acquisition. Mayberry's subjects appear to be unusual in the following respect. It is revealed that nine out of ten deaf children are born to hearing parents, while one in ten are born to deaf parents. It is this latter group which is linguistically privileged. They are exposed to normal linguistic input from the very beginning, whereas those born to hearing parents risk getting no usable linguistic input at all. According to Mayberry people who had acquired a spoken language had then gone deaf and so had to learn ASL as a second language in adulthood. On the other hand, people who had been congenitally deaf and had had no signed input and so had grown up essentially languageless. ASL was their first language, but it was being acquired after the critical period. In such a situation, the prior existence of some language base was apparently sufficient to trigger the development of the language faculty to a higher degree than first language acquisition carried out after the critical period. That is, if first language acquisition is to be perfect, it must take place within this window of opportunity.

The critical period hypothesis can again be reaffirmed from wolf children who have been isolated in infancy and again brought up in conditions where they have been deprived of normal linguistic unit. Genie's case is a point of issue. Genie's mother was partially sighted and her father was psychotic. From the age of 2 - 13 years, Genie was kept incarcerated, harnessed to a potty by day and caged at night half-starved, frequently beaten for making any noise, growled and barked at by her father and brother and essentially never spoken to. When she was fortuitously discovered, she gave evidence of knowing a few words such as rattle, red and bunny, but she appeared to have no syntax at all. She then was taken into care and exposed to intensive language input, leading to the possibility of testing the predications of the critical period hypothesis. After initial progresses she does provide us with some evidence. After a few years her development was remarkable. But despite the fact that she showed some ability to create novel utterances, her syntax never developed and thereby suggesting that the stimuli she was exposed to had come to late outside the critical period. It seems most plausible that her failure to master ordinary syntax

was indeed due to her deprivation in the critical period. What is striking is that she lacked precisely those attributes of language which are, by hypothesis, the fruit of the maturational unfolding of the genetic program in terms of the fixing of parameters. It appears clear that the acquisition of vocabulary is not so lightly constrained as we go on adding to our vocabulary throughout our life, but the acquisition of the core syntactic properties of language is restricted to this critical period. The pertinent question is: Why should there be a critical period? We think, following Chomsky, that the benefits are clear in the case of imprinting. As far as imprinting mechanism is concerned it is crucial, as after a certain period the imprinting mechanism must be switched off once its work has been done. In language you need to fix your parameters as early as possible so that you can deploy the system in its full complexity without continual changes. Chomsky himself inclines to say that even with a large innate component, there is still a lot more to internalise in language.

It is important to note here that until the early 1960's there had been little systematic investigation of the acquisition of grammatical structure. But this tradition has been changed with the appearance of Chomsky who has claimed that languages are rule - governed in respect of grammar. Chomsky, therefore, claims that the existing theories could not adequately account for the acquisition of rule - governed systems with the property of productivity. With the influence of Chomsky the psycholinguistic analysis was centered around with grammar throughout the 1960's. However, subsequently, there we have been witnessing a new development in favour of the view that child's developing grammatical competence is not feasible in isolation from his general cognitive, emotional and social development. The scope of child language studies has now been broadened to cover, not only phonology, grammar and vocabulary, it also includes the semantic structure of utterances, their role in social interaction and the reflection of the child beliefs about the world. Chomsky, as we saw, however, does not rule out the relevance of other thing barring grammar. What he wishes to say is that grammar is the determinate factor of language irrespective of other things. There we also find some other view too which is surely gone against Chomsky. It has been claimed that much

of the grammatical structure of a language may not be properly mastered until the child is about ten years old. This view may be gone against Chomsky, but at the same time we do not think that it invalidates the innateness and species-specificity hypothesis as proposed by Chomsky.

## **Other determinate factors of Chomskyan**

### **Psycholinguistic analysis**

Although LAD is one of the most important concept of understanding or substantiating Chomskyan mentalism, but apart from LAD, there we have seen other determinate factors of understanding Chomskyan mentalism. We have already seen in the previous sequel that his general theory of language actually hinges upon his distinction between competence and performance. Objectively these terms were not used before the introduction of transformational generative grammar in the mid 1960s. Irrespective of these concepts, the distinction between the language system conceived as a set of rules to native speakers and the use of these rules in language behaviour was much more clear enough from the very outset. The outcome of the concept of generative grammar influences not only psycholinguistics, but also for the study of human behaviour in general. Miller's famous comment on the impact that Chomsky's work had made upon him and subsequently upon many of his colleagues, is worth quoting at this point. He says, ' I now believe that mind is something other than a four letter word.'<sup>(5)</sup>

There is no questions of doubt that most of the psycholinguistics research were inspired by Chomskyan generative grammar. However a good deal of confusion has been caused by Chomsky's definition of performance to include not only actual behaviour, but also the non-linguistic knowledge underlying that behaviour. To put it crudely, have we all got a generative grammar in our heads ? and what role , if any, do these rules play in the production and comprehension of utterances ? It is to be noted here that some of the earliest

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5. Miller, G.A.: The psychology of communication; Seven essays, New York, 1967, P. 19.

psycholinguistic research influenced by Chomskyan generativism was addressed to the second of these questions and was based on the assumption, though Chomsky did not make, that all the rules required to generate a sentence were as employed by users of the language in performance. Evidentially, it is claimed that a native speaker makes a quick response to affirmative sentences rather than negative sentences and also to active sentences rather than passive sentences. In fact the difference between the reaction times for active affirmative and passive negative sentences could be accounted for by adding together the differences for active and passive sentences, on the one hand, and for passive and negative sentences on the other. That means the mental processing of sentences involved such rules as those of passive formation and negative insertion. Even if we do have a generative grammar of our native language in our heads, the structure of the linguist's model of that grammar is not likely to reflect the operation involved in language processing. Granted that generative grammars are psychologically real in the sense that we do have rule systems stored neurophysiologically in our brain, it is reasonable to assume that other psychological rules or strategies are brought into play which enable us to bypass some of the grammatical rules as such. It is in any case quite clear that language comprehension is based upon sampling, rather than upon a complete processing of the input signal. Likewise, it is a matter of everyday observation that we start making predictions about the grammatical structure of utterances as soon as our interlocutor starts speaking. Thus there is no need for us to know every thing about the linguistic structure of an utterance owing to understand it.

Chomsky, however, maintains that although linguists should continue to set aside what is known about psychological mechanisms and processes in their definitions of linguistic competence, still there are several generative grammarians who disagree with him. However, the so-called psychologically real grammar appears to be gaining strength with the help of Chomskyan generativism. There underlies no question of doubt that the psychological investigation of language storage and language processing has made considerable progress in recent years under the influence of Chomskyan

generative grammar. What made Chomsky's theory of language – structure so attractive to psychologists in the first place was the fact that it yields experimentally testable hypothesis. One should not, however, rule out the philosophical grounds for calling into question the Chomskyan use of the term *knowledge* in relation to linguistic competence. It has been claimed that competence, i.e., the knowledge that manifests itself in behaviour, is different from the kind of epistemic knowledge that is describable as true belief . In fact Chomsky's theory of mind is excessively intellectualist and hence differs from the traditional views of the structure of the mind. Unlike the traditional views it says nothing about the non-cognitive faculties, viz., the emotions and the will. It appears that Chomsky himself has on several occasions defended himself against philosophical criticisms of this kind.

Although psycholinguistic research has widely been influenced by generative grammar in recent years, but at the same time it can rightly be said that not all psychologists are being worked on the generative model of the language system. It has been revealed that there are many traditionally recognised topics in the psychology of language, viz., language and thought, language and memory etc. within the framework of theories which do not operate with the distinction of competence and performance or are very much neutral in respect to Chomskyan formulation of generative grammar. As far as the question of language and thought is concerned, Chomsky himself adopts the traditional view. As a follower of seventeenth century rationalists, Chomsky pleads for a kind of language which serves for the expression of pre-existing thought . However, this view of Chomsky has been challenged by many linguists. Here we can particularly mention the name of German Scholar Herder who holds that language and thought has evolved together . They are inseparable and both of them determine and reflect rational patterns of thought. We think Herder's view was subsequently echoed by Sapir and Whorf as well . However, Whorfian hypothesis has been the subject of a certain amount of experimental research and that the results obtained are consistent with the weaker version of the hypothesis according to which the language that one speaks influences thought.

