Noam Chomsky’s contributions to Language Studies

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Introduction to the Author:

K. Anand Kumar has been teaching English to the engineering students for the past eight years to enhance the language proficiency of students to get through in the campus interview. He has published two papers at International journals and presented 5 papers at International conference. His area of specialization is phonetics. He has won best faculty award by the institute where he is working at present.

The Bible says, God created Adam and “What so ever Adam called every living creature, that was the name thereof” (Genesis 2:19). In every religion, there appears to be a divine source that provides humans with language. We, the people tend to take language for granted as natural phenomena. Language, however is not a natural phenomenon; it is a creation of man’s social needs. We, like all other living creatures, depend upon the trinity – air, water and earth. In the same way the society depends upon the language for its existence.

Languages are governed by grammatical rules. Linguist Noam Chomsky thinks the human brain is set up to understand these rules. He is the best known and the most influential linguist of the second half of the 20th century. He has made a number of strong claims about language. He defines that we are born with a set of rules about language in our heads which he calls as the Universal Grammar. Theory of Universal Grammar is based on the notion that the grammar of all human language is based on a set of innate principles.

Chomsky’s major contribution to the language studies was that he made it Scientific and he gave scientific approach to language studies. As we come to know that there is a universal basis in the mind that incorporates the basic principles and we set values to these principles based on the data we get by exposure to an unorganized and random set of utterances via interaction with other people.

Grammar had only described language – which is useful for learning a language without telling us anything about how language works inside the mind before the advent of Chomsky’s Generative Grammar during the 1950s.

Language is one essential component of the human mind. The human brain is the most complex and intricate biological system we know. When we study its properties and manifestations, we are studying what we call ‘mind’. The human mind appears to consist of different systems. Each intricate and highly specialized with interactions of a kind that are largely fixed by our biological endowment, in these respects it is like all other known biological systems.

Chomsky says that the study of language is understanding the character of mental processes i.e. “language is a mirror of mind”. One may be interested in language for many different reasons, and from many different points of view. Chomsky had these central questions in his mind which
dominated his interest: (1) What is it that we know, when we know a language? (2) How is this knowledge acquired? Answers to these questions would have been something like this: (1) A language is a certain system of habits and skills; to know a language is to have mastered these skills. (2) Knowledge of language is acquired by such mechanisms as conditioning, association, practice in exercising skills, etc.

Use of language is not an exercise of any habit or skill whereas use of language is creative i.e. it constantly involves the production and interpretation of new forms, new in the experience of the language user or even in the history of the language. As we talk about language as a system of communication, we speak of human language. Even animals have communication systems and they communicate in a variety of ways. For instance, bees dance, dogs bark and cats mew, etc... using only a very limited range of devices unlike human beings.

A person’s language may be a means of identifying his or her position on a social or cultural scale. Many languages are spoken in the world. Every language has its various mechanisms - some rooted in human reason, others arbitrary and adventitious - for the expressions of thought, which is a constant across languages. Arbitrary means that there is no connection between the sound or form of any word and the object which represents. For example, we do not know why do we call tree as tree or horse as horse but as we had seen earlier there is no connection lies between the word tree and the object that has big trunk, branches, and leaves, etc...

In the same series, we call language is displacement which enables the language to be used at times and in places where the context referred to is not present. If anyone says ‘a cup of milk’ or ‘what a huge mountain!’ all speakers of the English language will understand what is being referred to even if they do not see it.

Chomsky believes and suggests language acquisition rather than language learning. The ability to use language is a very important part of human cognition. People use language to induce action in other people. Children are born with the UG wired into their brains. It offers a certain limited number of possibilities to acquire language. When the child begins to listen to his parents, he or she will unconsciously recognize which kind of a language he is dealing with and he or she will set his or her grammar to the correct one - this is known as ‘setting the parameters’. Children do not simply copy the language that they hear around them. They deduce rules from it which they can use to produce sentences that they have never heard before.

All human beings and non-human beings in this world acquire their native language from their childhood by listening to sounds produced by neighbours and other creatures. It is miracle to look at how a particular human being acquires his or her native language. Here we are going to look at what we call ONTOGENY of language, the development of language in an individual, as distinct from the PHYLOGENY of language, which is the development of a language through various stages in its history.

Language can be used as a tool by one individual to help that individual remember things. In this way, language expands cognitive abilities that are already present in the human brain. For example, a child may not be able to remember how many days are in September, but by learning the rhyme that begins, "Thirty days hath September", the child will easily be able to store these facts in memory.

Howard Gardner, along with Noam Chomsky and many others, believes that parts of the brain have evolved over time specifically for the purpose of producing and understanding language. Thinkers such as Andy Clark and Jean Piaget, on the other hand, believe that public language utilizes brain structures and psychological functions that were already present before the development of this important tool. In the first ('nature') school of thought, linguistic abilities have developed over time as a result of Darwinian evolution. In the conflicting ideology (a "nurture"
position), there is no innate linguistic ability; and linguistic evolution occurs as a result of learning and cultural evolution. Both sides agree that language draws from and influences other thought processes. Nature proponents see language as a very autonomous ability, while nurture proponents tend to see it as more inseparable from other, general cognitive abilities.

Chomsky, Gardner, and others of similar ideologies believe that infants are born with a significant prewired knowledge of how languages work and how they do not work. Views within this group vary slightly, but they all hold to this basic tenet and cite ample evidence in defence of this view. These proponents of the innateness of linguistic ability also believe that the genetic basis for language came about as the result of Darwinian evolution and by an extension of the "survival of the fittest" argument. Again, individual views vary slightly, but all supporters of this school of thought see language as a product of Darwinian evolution (Gardner 90-91). On the other hand, Piaget, Clark, and others see the newborn as possessing only a few basic cognitive abilities. They argue, are due to interactions with the environment and are independent of any inheritable code found in the genes.

Many intellectuals on the "nature" side of the language debate believe that this could explain how humans acquired their language abilities through gradual evolution. Chomsky, however, has a different view. He believes that our language capabilities could not have evolved gradually; and, instead, he proposes that the entire language faculty came in one evolutionary step (Gardner 91).

Chomsky prefers the term "language acquisition" rather than "language learning," because he sees this process as a maturation of the language faculty. Infants begin babbling not too long after birth, and the sounds produced during this period contain the basic sounds they hear spoken around them as well as phenomes not present in their native tongue. During the babbling stage, babies produce phenomes they have never heard, from a variety of different languages spoken around the world. Chomsky believes that this is due to the fact that the "language faculty" already contains knowledge of all the sounds that can be produced in any natural spoken language.

By the time the child turns two years old, he or she will speak single words in the native language, and soon thereafter, will begin to form very simple, two-word "sentences." These word pairs are meaningful and often novel combinations of words known by the child. Examples may include "drink milk," "byebye Daddy," and "doggy run." By the age of three, these two-word utterances grow in length and complexity, so that the three-year-old child can utter sentences of several words long, even including questions, negations, and clauses.

The biology of the brain can also support Chomsky's theory. Almost all right-handed humans have language centres located in the left hemisphere of the brain. This left hemisphere is larger and structurally different from the right hemisphere and it is used for various language tasks. In Darwinian evolution, natural selection or "survival of the fittest" results in actual changes in the gene frequency of a species. These changes are innate and inheritable, passed down from one generation to the next by means of biological reproduction. This type of evolution is very slow, and even minor changes in a species tend to take thousands or even millions of years to occur.

Cultural evolution, like Darwinian evolution, brings about changes within the human species. However, these changes occur at a much faster rate and by different mechanisms. Whereas traits in 'Darwinian' evolution are passed from one generation to the next through genes only, without regard to what progress one generation has made or what it has learned during its lifetime, traits in cultural or 'Lamarckian' evolution are passed on through language from one generation to the next. This means that progress made by one generation can be selectively passed on to the next, which does not occur with random genetic mutations. The focus and ease of transfer characteristic of cultural evolution lead to changes that takes place at such a fast rate that the effects of Darwinian evolution, in comparison, are practically negligible.
As scientist Stephen Jay Gould remarks, "While the gene for sickle-cell anaemia declines in frequency among black Americans, we have invented the railroad, the automobile, radio and television, the atom bomb, the computer, the airplane and spaceship." Clearly, cultural evolution is a distinct process from Darwinian evolution and accounts for many changes in human behaviour.

In order to understand how a culturally based model of language could account for these facts, it is important to examine how new models are being used to explain the brain and human behavior. The brain, above all else, is an organ whose purpose is to manipulate the behaviour of the body in an environment to secure survival. This is true of all species from the snail to the human. It has been shown experimentally that experience causes structural and chemical changes at the synapses between neurons which means that learning takes place in the connections between neurons.

If, for example, a dog finds that jumping over a fence allows him to eat some meat barbecuing in the neighbour’s yard, and if this behaviour gets this reward several times, then the connections between his neurons will strengthen in the path that goes from smelling meet to jumping the fence. If, however, the dog tries to jump the fence one day and gets shocked by an electrical wire, the weights of connections will become weaker. If this happens several times, then the neuronal path between smelling meat and jumping the fence will have a strong inhibitory connection, so that the dog no longer performs this behaviour.

How does this relate to a human brain producing and understanding language? Well, suppose a baby finds that if he produces the sound "wa-wa" he will receive a drink of water. The neuronal connections between his feeling of thirst and his speaking the sound "wa-wa" will be strongly excitatory, and he will have learned to communicate. If, however, his mother decides to break him from the habit of baby-talk and only gives him water when he pronounces the entire word "water," then the connections between thirst and "wa-wa" will become inhibitory and a new neural path, between thirst and "water," will become more excitatory. Thus Noam Chomsky says language is generated through an inborn ability in the individual. Once generated, language is liable to infinite creative variation.
References


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