Language and Mind
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Module - 08
Lecture - 37
Language and Cognition

In this course, now we have reached at a point where we can talk about relationship between language and cognition. This is a very significant relationship for us to understand in the course on Language and Mind. We have so far looked at language part of this course in great details, and we have looked at the role of human mind as well, but together, the role of human mind in understanding language, and evidence from the structure of language about the role of human mind, and then the debate about relationship between language and cognition, will help us understand the entire topic in the perspective.

Now, we have looked at underlying patterns of human mind; we have looked at underlying patterns of different parts of language such as sounds, words and sentences which help us understand the role of human mind in understanding language. Again, we have looked at each part in details to see such patterns that… such patterns that underlie language. Now at the same time, we also looked at the levels of representation where several processes take place in human mind. And we have recently concluded looking at some of those processes such as displacement, various types of displacements, case assignments, phrasal structure and interpretations of various types of elements in a sentence and we have seen whether such elements need to get their interpretations within the sentence or outside the sentence.

All these things have helped us understand the inter-relationship between the language and human mind, and how the two compensate each other in coming up with one of the most sophisticated processes of human mind called language.

Now we come to the point where we need to understand ‘cognition’. In the general, literal sense of the meaning of the word, cognition means understanding. Then, it is important that we look at language from the perspective of cognition. If we want to understand the discipline in which we study cognition, then the discipline is called cognitive science. It is an interdisciplinary approach of looking at how humans

understand; and naturally it ranges from all kinds of fields like philosophy, mathematics, neurobiology and what not. So, we will bring you to the point where we will only look at the relationship between language and cognition.

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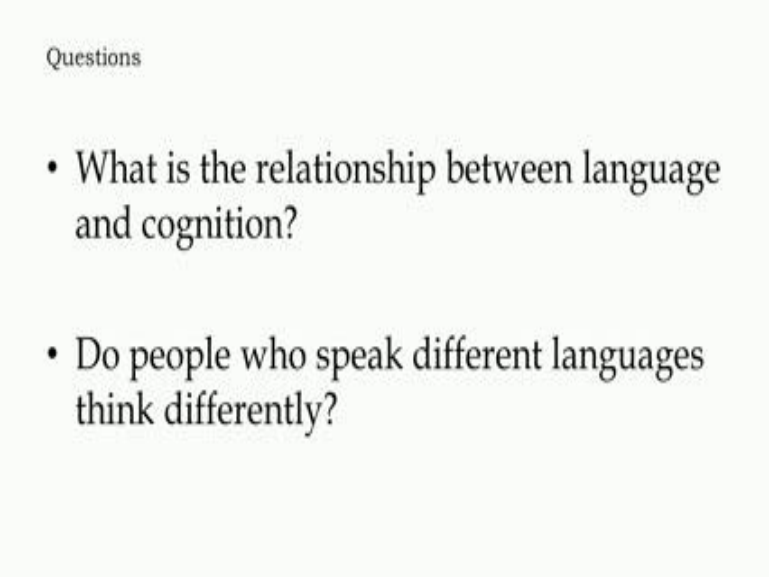

So, what are the important questions? We will try to approach two of them; rather, we will try to make you understand that there are two questions that are vital in the field of cognitive science when it comes to the relationship between language and human mind. These two questions have been very significant from the very beginning and they continue to be so. The questions are there on your screen. What is the relationship between language and cognition? And more important question, rather an extension of this question is: Do people who speak different languages think differently? And at the same time, you can come up with one more related question: Do we need language to think? These questions have been important for people understanding and discussing these disciplines in the broader domain of cognitive science.

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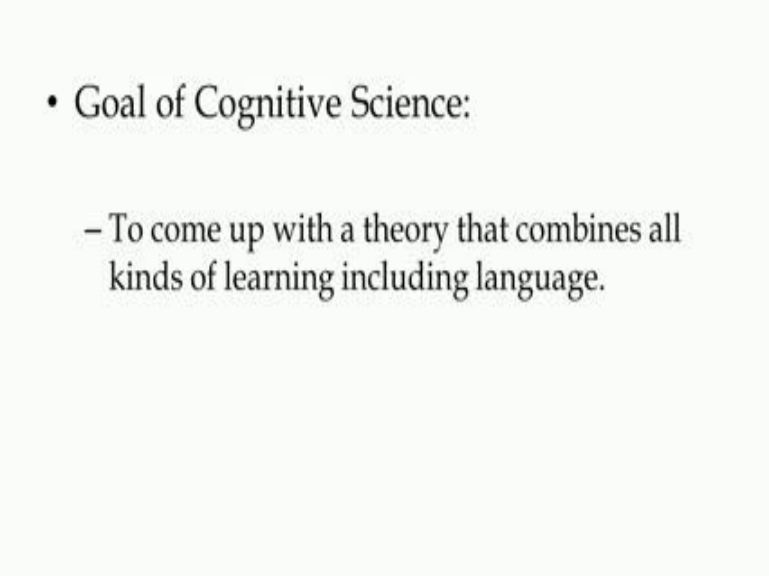

One of the major goals of this discipline has been to come up with a unified theory. And what they mean by unified theory is an approach that combines all kinds of learning including language. Now, what are the types of learning that you can count on, besides language, which we have looked at in greater details? We have also looked at learning of language in very detail. Let us name few other types of learning. We learn to see, we learn to hear. Then there are kinds of learning like singing, dancing, swimming, driving and painting. Now, if we try to compare the types of learning that I have just mentioned to you, you will see a striking difference between at least two; that is, language and seeing. You can think more, you can look at more literature, to look at these issues in details; but to help you understand this question, I will try to restrict examples to only a few, so that you can understand the questions properly.

Again the question is, what is the relationship between the kinds of learning that we have just heard such as: language and seeing on one side, and dancing, swimming, biking, driving, flying, painting, etcetera, etcetera. If there are, then what are they and if there are… if there is none, then what is the difference between these. See, on the basis of these things, we have been saying and trying to underline that language learning is a child's play, which simply means, and if we try to understand the questions that we have just asked in this context, then it means language learning is totally effortless. We do not put any effort in learning a language as the primary means of, as we know, language being the primary means of socialization and a means of everything that we do. We do

not need to learn a thing about language; we pick it up from very early stage with our interactions with the societies.

However, we do need to put efforts in learning all other types of things that we have looked here. For example, painting, swimming, dancing, singing - we need to put an effort to learn all those things. So, the issue of effort is one such thing which distinguishes two types of learning.

At the same time, I also mentioned seeing. We do not put efforts in seeing, in learning to see; however, that is also different from language. Now the question that we have just discussed is important to understand the major goal of cognitive science. If, like I said in the beginning, if we try to summarize the aim of cognitive studies, then we can put it in one sentence that, one of the goals of cognitive science is to come up with a unified theory which combines all kinds of learning including language.

Lots of people have argued in favor of that and lots of people have also argued against that. That is, lots of people believe that language is like all other kinds of learning, and therefore it is possible to come up with a unified theory of cognitive science; with unified theory of learning which in turn serves the ultimate goal of the discipline cognitive science; whereas, others have successfully demonstrated that a unified theory is not possible because at least language involves the kinds of things which are not possible to combine with other kinds of learning, one of them which we have just seen. And anyway, we have been looking at this discussion underlyingly while understanding underlying patterns of language as well. At this time we are going to underline these things in a little bit more obvious fashion.

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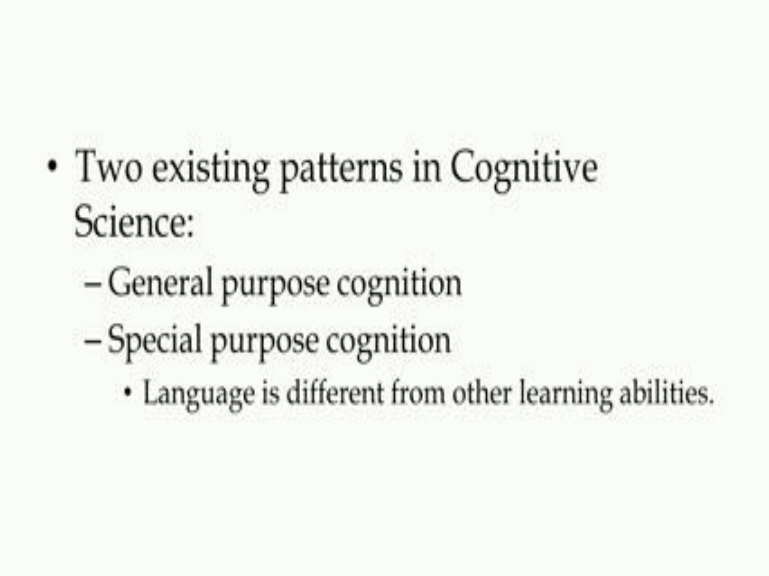

So, what we see that there are two existing patterns: one is called general purpose cognition and the other is called special purpose cognition. So, when we were talking about unifying all kinds of learning, and when we said this is the goal of the discipline to come up with a unified theory; so at this time we can say, there are two branches of theories in cognitive science which… one is general purpose cognition and the other is special purpose cognition. And here the idea is, general purpose cognition accounts for all other types of learning except language, and special purpose cognition accounts for language in a specific way.

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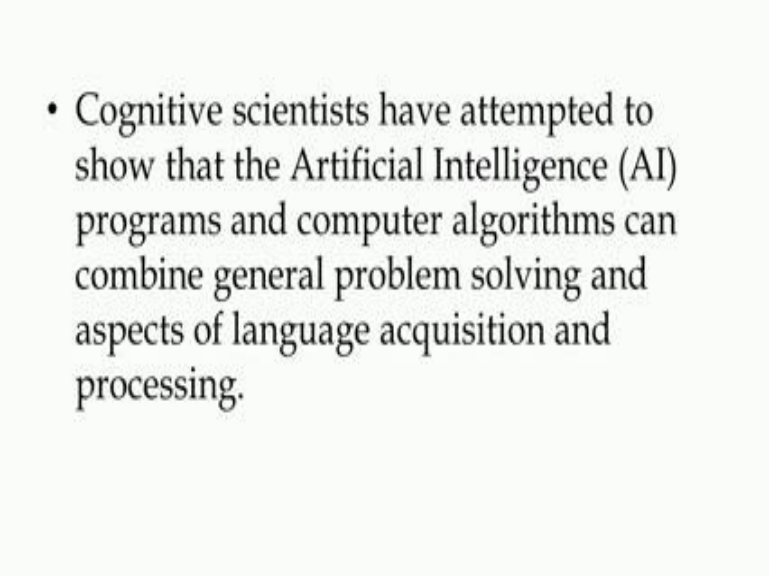

At length, cognitive scientists have attempted to show that the artificial intelligence programs and computer algorithms can combine general problem solving and aspects of language acquisitions and processing together. The whole idea of artificial intelligence has been based on this; this approach. However, it has not been successful to a great extent because the general problem solving of the… general… the discipline of artificial intelligence can come up with computer algorithms for other kinds of learning that are part of general problem solving in computer science and a general purpose cognition in cognitive science; but they have difficulty coming up with computer algorithm for the aspects of language acquisition and processing. And again we have looked at some of these things, but we will try to look at it once again.

There were two dominant patterns in the field of linguistics to understand language learning, at least in the 1950's. What was the dominant pattern which came from psychology was an idea to pursue language as a matter of behavior. It was argued that language is one of the human behaviors. One of the output of this theory was we learn language when we hear and interact with the society and in a way it becomes part of human behavior and thus we end up speaking. When the other theory in the field of language learning came up, and which was primarily advocated by Chomsky and then later by many other people, was primarily based on the significance of human mind. What they observed that the entire role of human mind was missing from the theory. The entire specific focus on human mind in learning was not part of behaviorist approach, which considered language as a behavior.

And one of the primary things that Chomsky suggested to deny such a theory was the fact that if we think we learn language by socializing and imitating others by which language becomes human behavior, then we will end up speaking only what we hear. The fact that humans are capable of coming up with sentences which they have never heard before shows that there is something else that is going on. And from here onwards he picked up and talked about the significance of human mind in learning language. This was one of the beginning points to show that language learning is different from other kinds of learning. And then on the basis of these observations, he proposed that language… on the basis of these aspects, he proposed that every normal human child is born to acquire language because the child is born with a specific capability which is

known as language acquisition device. This language acquisition device has universal grammar in it.

Now, what we have seen as universal grammar has a set of principles and also a set of parameters. Take yourself back when we were discussing in the first few classes, when we were talking about language acquisition. We have looked at the issue that language acquisition device contains universal grammar, and in turn, universal grammar has two parts: one part relates to the principles of language, along which languages are similar to one another; along the lines of which we account for the fact that there are lots of similarities among languages.

However, the differences among languages are accounted for by parameters. So, we argue… Chomsky has argued that both set of principles and set of parameters are part of universal grammar which in turn is part of language acquisition device, and every child is born with this device. And then on the basis of socialization in the society - that is, in the immediate environment, the child receives input which goes in human mind, activates the principles and parameters, and thus comes up with language.

In addition, he also invokes generative capacity of human mind in coming up with… what generative capacity basically looks at is, pairing of lexicon and syntax - that is the rule. The two parts: that is, lexicon and set of rules and in that also at least in recent discussions, Chomsky tries to put total emphasis on what he has been calling faculty of language and that faculty of language contains, what he calls, recursion and in general term will be basically syntax.

So, syntax - he emphasizes that is major part of what we know as language acquisition device and generative capacity. And he has given tons of examples to underline this thing and we all know that we speak so many things that we do not know how to describe. So, basically at this point, we can understand what I have been saying that what we create while acquiring language and what is known as knowledge of language is really the kind of knowledge that we know, but we do not really know that we know all of them. And this is why we are unable to talk about them, but we can perform properly without any difficulty and with grammaticality and acceptability; that is attributed to generative capacity.

Now, this has been… on the basis of these things, the whole idea in the larger theory of cognitive science and Chomsky's perspective has been looked at with the term of innateness. There have been other related issues in cognitive science.

Thank you.