Fundamental Concepts in Sociolinguistics
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Lecture 12
Critical Period Hypothesis

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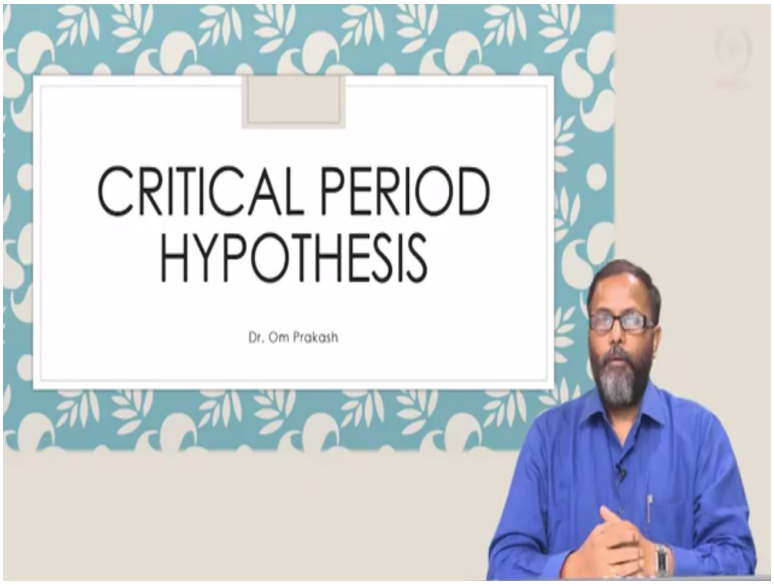

Welcome to class. Today we are going to talk about a very important and debated issue in language acquisition theories called Critical Period Hypothesis. So when we say critical period, we refer to the time during early childhood, and the debate whether the acquisition of language can be linked to a certain window period. Critical period as a phrase has been used in multiple disciplines like cognitive sciences, psychology, neurology for that matter, but in linguistics it was popularized by Eric Lindbergh in his work in 1967.

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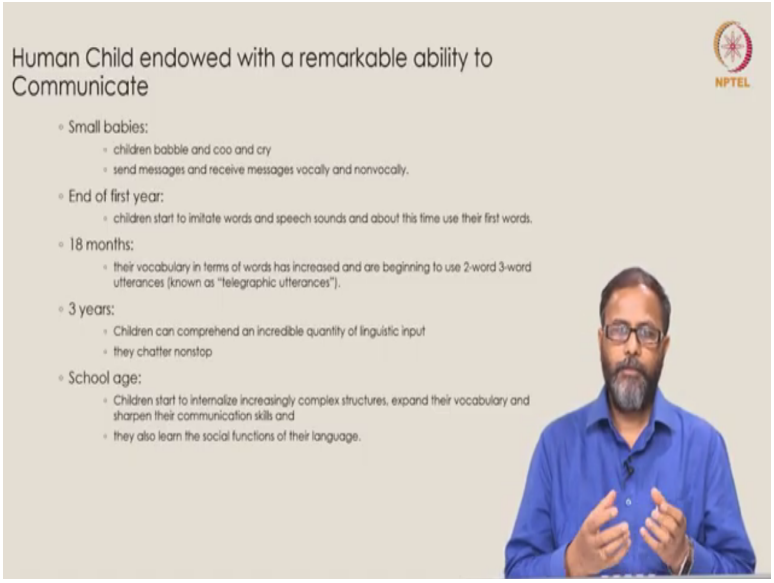

Today we will talk about Critical Period Hypothesis. But before we move on to the hypothesis, let us understand the background and the context in which this idea was popularized and debated until date. It has been debated by certain scholars who endorse the idea, and many second language acquisition theorists, for example, oppose this view. But look at the way a human child acquires a language, specifically the first language.

Human child is endowed with a remarkable ability to communicate. And the speed of learning in early childhood is beyond our imagination. The way children learn can be contrasted with the way adults learn. We understand that adults have to make a lot of effort in learning a second language or a third language, which is a child's play for a young human child, specifically in early childhood. So small babies babble, coo and cry.

This is how they start producing noise. They send messages vocally and non-vocally. But by the end of first year, they start to imitate words and speech sounds. And perhaps towards the end of one year, they are able to utter their first word. By the time they reach 18 months of their age, their vocabulary increases exponentially. And they start two-word and three-word utterances, which is also known as telegraphic messages.

So they do not have complete sentences, but two or three word utterances. At the end of 3 years, the children acquire amazingly huge vocabulary within no time, and they construct complete

sentences. They are able to engage in longer discussions, longer speech, and they chatter nonstop. And by the time they enter the school, they have almost become linguistically adult.

That remarkable achievement forces us to look at the acquisition process closely. So in order to understand first language acquisition, we have to clearly distinct theoretical positions though they are poles apart. One is the behaviorist paradigm or the behaviorist approach or behaviorist theory. And the other is called the generative paradigm. You call it the generative paradigm or innate hypothesis proposed by Noam Chomsky. In 1957, BF Skinner came up with his monumental work named *Verbal Behavior*. This work is considered as the summary of the behaviorist approach. So behaviorists believed that a human child acquires a language in a rich environment with stimulus and response chain.

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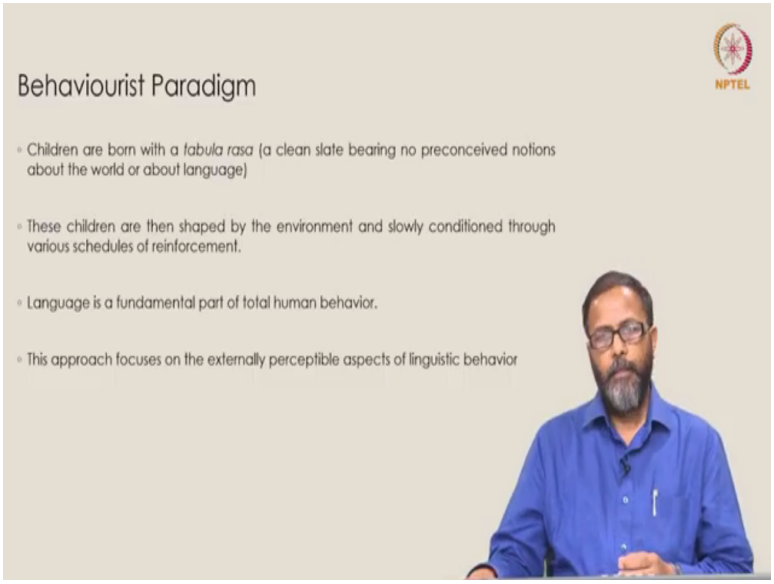

If you look at the directions from the Behaviorist paradigm, we can deduct the belief that a child is born with tabula rasa or a blank slate, that means they bear no preconceived notions about the world and about the language to that tabula rasa. And then their understanding and learning is shaped by the environment, slowly conditioned through various schedules of reinforcement, stimulus response chain, and various different schedules of reinforcement.

And they believe that language is a fundamental part of total human behavior. So language is a verbal behavior part of total human behavior. And this approach focuses on externally

perceptible aspects of linguistic behavior, that is, purely externally perceptible linguistic behavior. So this is the behaviorist position.

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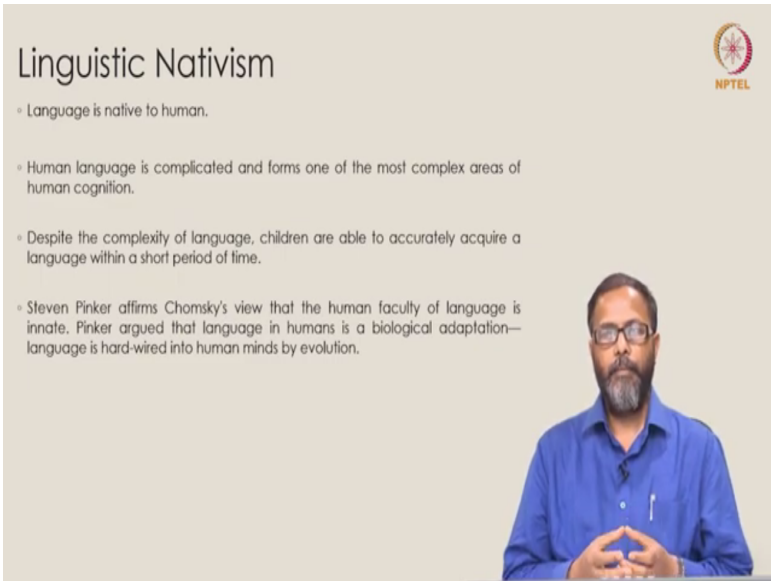

This position was severely criticized by Noam Chomsky. And he came up with two hypotheses; Linguistic Nativism and Innateness Hypothesis. He said that language is native to humans since our birth and we have an innate capability to acquire a language. If you go by Steven Pinker's term, the human child's brain is hardwired to acquire a language. So it is a biological adaptation. So we have two theoretical positions and in order to support the innateness hypothesis, that language is native and innate.

Chomsky invokes two important ideas; number one, language acquisition device and number two, universal grammar, which later turned into principles and parameters. So he said that a human mind contains this language acquisition device. A child is born with a language acquisition device. And when we say language acquisition device, let us not be confused with some physical or physiological mechanism.

It is an innate apparatus, a mechanism that enables a child to learn a language. It does not have any physiological manifestation, but a hypothesis that represents the innate capability of the human mind. So don’t be confused with the word device. It is not a physiological organ that we

are referring to. But this idea of language acquisition device contrasts with the behaviorist idea of tabula rasa.

So at one extreme you say the human mind is a blank slate, no perceptible preconceived idea about the world and language, and at another theoretical position, which is the Chomskyan position, we say human children are born with language acquisition devices. So there is an innate capability to learn a language. So language is native to humans. Interestingly, both of them emphasise the role of the environment.

Behaviourists synthesise in terms of externally perceptible linguistic input, and Chomsky acknowledges the role of external environment to the extent where the primary linguistic data is required to trigger this mechanism. So the environment works as a trigger, but in the behaviourist paradigm we see the environment to a large extent determines the learning process. There is a fine difference.

In the behaviourist position we have external language as externally perceptible human behaviour, but in the Chomskyan paradigm and Chomskyan enterprise, we have language as native and innate. So human children are programmed biologically to acquire a language. So these are two theoretical positions. Now after Chomsky's arrival in the scenario, lots of criticism and support was generated in favor or against this theory.

So critics criticise Chomskyan abstract computational thrust on language acquisition process. How will the mind compute learning? And at the same time, other critics emphasise a huge role of context and environment that we have already discussed in linguistic competence versus communicative competence. But this idea that language is acquired by the human child in his or her early childhood gained currency and support, and this is the background for this hypothesis called Critical Period Hypothesis.

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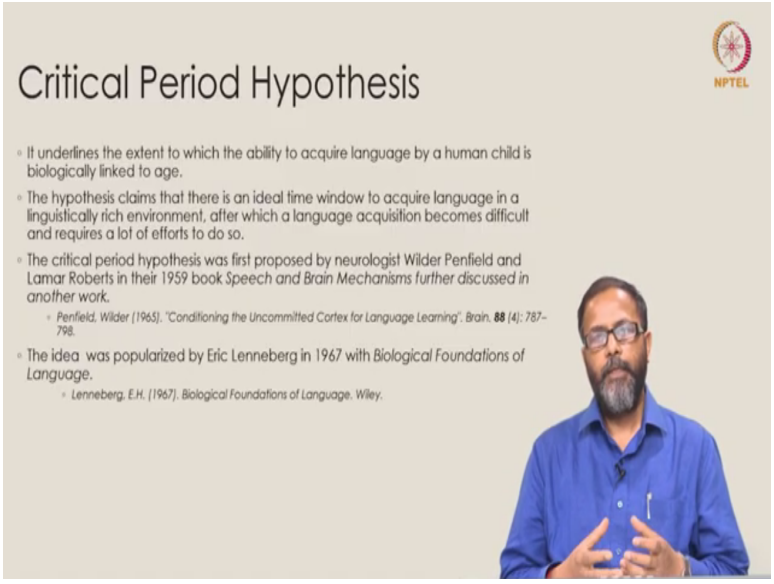

So the debate was whether there is a biological time window that enables a child to acquire a language. Can we have clarity on the break point? At which point Chomsky says perbatory? So roughly it is 12-13 years of age now. The whole idea of universal grammar and the principles of language proposed by Chomsky. So the child has access to universal grammar, principles of language, and the environment helps the child to set the parameters.

And this LAD or Universal Grammar does not stay for this. Universal Grammar rules and the principles do not stay forever. The moment we set the parameters, the rest of the rules, which are the principles, vanish or disappear. That means, there is a threshold, and this was the triggering point to bring in this critical period idea that can link learning or acquisition of the first language to a certain biological window period, a certain biological window.

So the critical period hypothesis underlines the extent to which the ability to acquire language by a human child is biologically linked to age. And this hypothesis claims that there is an ideal time window to acquire language in a linguistically rich environment, after which a language acquisition becomes difficult and requires a lot of effort by a learner or a child to do so. And this theory is also refuted and debated, but the importance of this idea cannot be overruled or underestimated.

And support for this idea comes from various feral and deaf children. So this hypothesis was first proposed by a neurologist Wilder Penfield and Lamar Roberts in their 1959 book called *Speech and Brain Mechanism*. And further discussed in another work by Penfield, *Conditioning the Uncommitted Cortex for Language Learning* published in Brain, volume 88, Volume 4, from pages 787 to 798. But this idea was imported. But this idea was imported and popularised in linguistics by Eric Lenneberg in 1967 through his book, *Biological Foundations of Language* published by Wiley and Sons.

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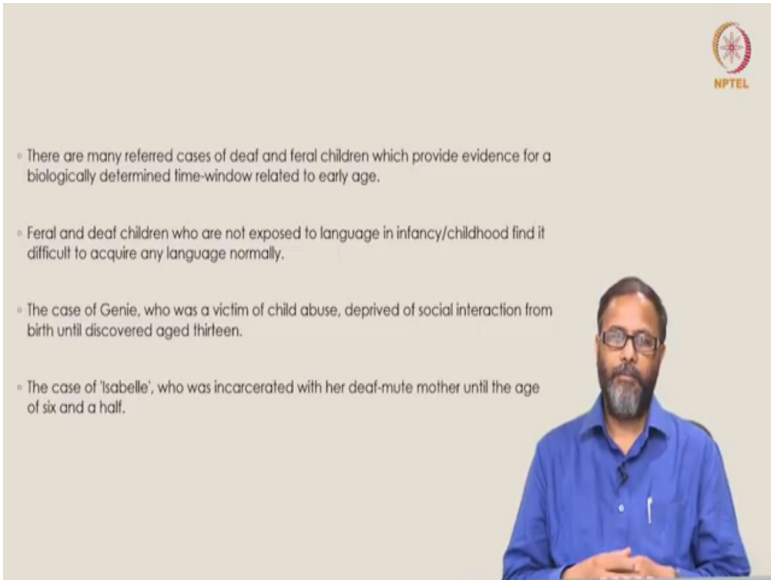

And from there this critical period hypothesis came into discussion. And the support for this hypothesis comes from the cases of deaf and feral children who were subjected to severe early childhood abuse, who remained isolated, and who were deprived of social interactions. And in that case, the learning or the requisition could not be triggered. Some such cases are like, Genie, the case of Genie, you can find the case of Genie, available online. And you can just go through the case study. It is available online, if you google Genie, the feral child, you will find the entire case history.

Another case is Isabelle. But there is a difference, and that gives support to this claim. The case of Genie is interesting. Genie was a feral child. Her father, in the early age of Genie, she was retarded. He locked her up in the basement. Sometimes she would be changed and isolated. She spent nights in the washroom. She was completely denied any outside social interaction.

And when she was discovered at the age of 13, she had already reached the age of puberty. She was discovered at the age of 13. She lived long after that, but she could not acquire a language in a normal way, and she could not have command over the language. She could not communicate properly. She learned some life skills to survive. But as far as linguistic competence or language competence is concerned, she could not acquire it properly.

And this supports the idea that she had already crossed that critical period of acquisition of language. Another case is of Isabelle, who was discovered and rescued at the age of six and a half. And with training and exposure and critical observation and examinations, she acquired language. That proves that because the child was discovered before the age of perbatory, before this critical period, the child could learn and acquire a language perfectly fine.

And if you look at these cases, there are several other cases which support this idea. And you can find these cases and the details. It is available online. You can search for it and you will get it. And I recommend that you read these cases. So the critical period hypothesis also gives ground to the Chomskyan idea of LAD, UG, Chomskyan idea of triggering LAD with primary linguistic data, and Chomskyan idea of poverty of stimulus.

So in both the cases that we have mentioned here today, this idea gets support. Because the process was not triggered, because the acquisition was not triggered, the child could not acquire language properly. And in the case of Genie, the feral child, did not acquire language, is self explanatory. It explains why she could not acquire language even after lots of efforts on part of a team of doctors and linguists.

However, the other one is Isabelle's case. The child could acquire the language. So the idea that a window or biological window can be attached to the process of acquisition of language gets verified by these cases. So the critical period hypothesis refers to the claim that acquisition of language is subject to a biological critical period or a biological age, and after that certain threshold that is roughly 12 to 13 years of age.

So 13 years for that matter, after that threshold, it becomes really difficult for us to learn a language. The way a native speaker learns, the way a normal child learns. The significance of early childhood exposure to language and a rich linguistic environment gets accentuated with the

fact that, if you look at the learning patterns of adults, adults find it very difficult to learn a second, third or fourth language.

However, in the case of compound bilingualism or compound multilingualism, we find that children find it very easy to acquire 2-3 languages at a time without much effort. Interestingly, when the child reaches the school, the child is already linguistically adult. So without any structured training, without any structured instruction, and without any programmed schedule of reinforcement, the child is able to do so with limited triggers available in terms of primary linguistic data.

Chomsky also explains the quality of data available to the child, which is very poor, fuzzy, incomplete, and idiosyncratic, but still learning is complete and perfect. That gives support to this idea of innateness. So Critical Period Hypothesis complements this innate idea, this native hypothesis, that is, language is native to humans and human children are programmed, hardwired or biologically programmed to acquire a language, which is not the case with any other species in the animal kingdom.

So this is a very important phenomenon, critical period hypothesis. And it gets support from lots of cases reported of deaf children, of feral children. And it establishes the threshold of age of 13. So early childhood becomes so crucial, so critical for us to acquire a language. This is Critical Period Hypothesis. So we will continue this discussion further. This is it for now. Thank you.