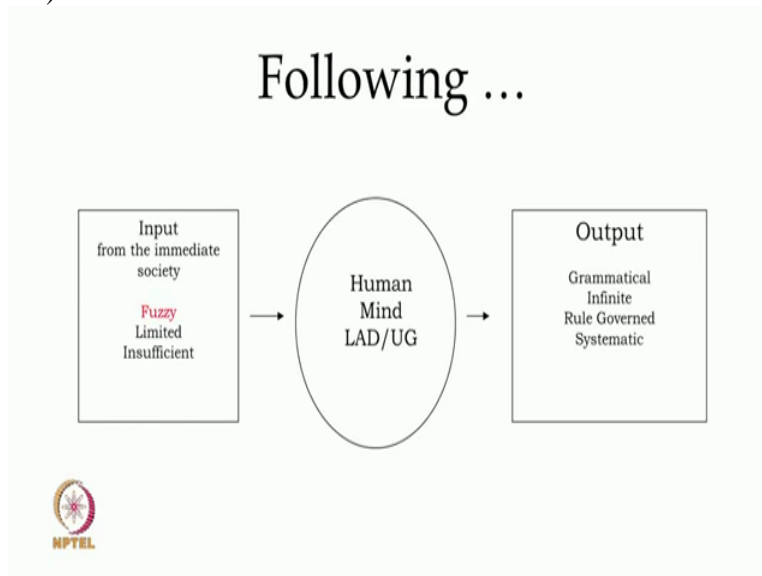


Subject name: Language and Society
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Lecture number: Module -08

Lecture title: languages – second Language Learning and Critical Period Hypothesis

Today we will be talking about language learning and critical period hypothesis. And in particular, we will be talking about role of critical period and we will examine second language learning in the domain of language learning as the bigger part. We would like to situate this discussion about second language learning and critical period hypothesis in the understanding of language and society.

We have attempted to understand first language learning through the diagram that you see in the screen. (Refer Slide Time: 00:58)



This diagram follows from Mentalist framework of language learning. It represents what Mentalist framework involves. And it underlines the primacy of human mind in learning the language. We have had a discussion on the nature of input and the nature of output as part of learning. Input is what is required for output the disagreement or the addition is all about the role of human mind and the correspondence between input and output. Input comes from the society and output comes from human mind.

So what follows this understanding is crucial for us to understand. So after this understanding and what follows from this is important for us to see. And we would like to discuss few things in order to situate the debate on the second language learning and then to see how all of this translates into understanding of relationship between language and society. The language that is used in society by an individual

could either be first language or second language and foreign language

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A note on ...

- First Language
- Mother Tongue
- Native Language
- Second Language
- Foreign Language



And what we have been trying to locate so far is what is it that we call language and how does it get used in the society ? So what we have established so far and we will start from there that the Mentalist framework gives us the following scenario: We have the output and the frame work has explained how such an output is possible at the age of four to four and a half or five for a child. Then we would like to understand three terms in particular, First language, Mother tongue and Native language.

These are the things which have very different and completely misplaced understanding in the domain of understanding how language works? I call this misplaced simply because most of the things that could be said about three terms namely first language, mother tongue and native language does not seem to be following from the theoretical position on learning language. Rather these, an understanding of these terms does not seem to be following even for an empirical understanding of how people, how children acquired language.

The theoretical understanding of what comes from Mentalist framework is primarily located in empirical domain. The fact that a four year old child can come up with a grammatical sentence is no matter a surprise is no, not anymore open for investigation. This is an empirical fact that a five year old child, a four year old child can really come up with grammatical sentences of the language that the child has acquired in the environment where the child has grown up and can carry on a sustainable conversation about it. About anything in the language that the child has acquired.

So such an empirical fact only gets little bit of elaborated description and the whole framework helps us understand little bit more in general. So what is that we need to talk about these terms? To begin with, let us briefly talk about what people would really want to understand. Most of the time, the term native language and the mother tongue, these terms are defined as part of other markers of identity. So mother tongue very crudely be said, be defined as, the language of the mother or language of the parents, language of the family or language in which people grow up.

The last one could be the best but the term mother tongue has very little to do with anything else. That is, it does not have to be language of the mother, language of the parents, language of the family. Now, no matter how people would want to associate this term with either one of the three. At the same time, native language will often be equated with the idea that the language being spoken in the place of which the speaker is a native. That is, a child born in Trivandrum would want to believe that the native language of the child is Malayalam, because the language spoken in Trivandrum is Malayalam. It also happens so, if a child is born in Trivandrum lives in Trivandrum then the native language is Malayalam . There is no difficulty with that. But it is also likely that that may not be the case.

A child born out of Malayalam speaking parents born in Trivandrum or for that matter in any other place in Kerala, where Malayalam is the predominant language but does not live in Kerala, has moved to some place where Malayalam is not the primary language and lives in that place from the age of let us say four, five and continues living in that place. Let us take for example, Delhi where predominantly the language could be called Hindi. So the native language of this child would be still considered or called Malayalam.

That is the difficulty with the generic understanding of these terms. However what we would want to propose or we would like to just underline is not new proposal. It just follows from the understanding of output that in short, here is the definition of these terms ; output equals to mother tongue, output equals to native language, output equals to first language.

And we would like to spend a couple of moments in the output of the child. It could be Malayalam then the mother tongue is Malayalam; the native language is Malayalam and the first language is Malayalam. If the child is born out of Malayalam speaking parents, but grew up in Delhi, speaking Hindi, then the output of the child is Hindi, then the mother tongue, or the native language or the first language is going to be Hindi. This what follows from the understanding of Mentalist framework of

language.

And it could get more complex than the simplistic explanation that we are proposing at this time. A child lives in America after being born in Trivandrum, moved after the age of four or five. Before the age of five, the child could carry on conversation in Malayalam. But moved to Washington D C lives with English speaking neighborhood lives and communicates with friends who speak English. In such a scenario, the first language or the mother tongue or the native language of the child is going to be English and then Malayalam would take secondary space.

Now, it is important here to add, that output is equivalent to human competence in language. And human competence of language is what defines native language, mother tongue or the first language. Therefore it is completely up to the individual to decide whether the native language or the mother tongue of the child is language A or language B. Or a kind of language which is difficult for the child to name. It is possible that the child grows up speaking several languages at a time for the sake of lack of the name.

Therefore in that situation, the output is several languages. Now, for the first time in understanding the relationship between language and society, I would want you to understand that several languages that is again nothing new, several languages as output is going to be the mother tongue of the child, is going to be the native language of the child.

And for the first time which is not mathematically viable, we can say, first language of a child is going to be multiple languages that is equivalent to output. Therefore the first language of the child is going to be a combination of all of it. Whatever is the name that we can conveniently call it. This is required for us to understand in order to put these terms in proper perspective and in particular, what follows from an understanding of output from the Mentalist framework.

Moving on, what follows from an understanding of output also ; it is required that we understand the idea of second language and foreign language in the context. And while bringing in the idea of second language, we would like to make a distinction between first language and second language. So everything that a child acquires before a certain age of maturity will be considered as first language or first languages. Anything or everything that a child acquires, or learns by putting in effort after a certain period of maturity would be considered as second language.

Then the distinction between second language and foreign language would lie in the availability of this language in the real world that the child interacts with. And here in this case, will be a grown up child. So a particular limit of maturity is considered thirteen years of age plus or minus one or two would be relevant. So anything beyond thirteen years of age that a child puts in effort in learning will require an effort. And therefore will not be effortless will not be considered as effortless.

So such an effort in learning another language after the age of thirteen years will make the language, second language. And again the second language, the idea of second language could also be called second languages. If a child wants to learn Hindi and Punjabi and Haryanvi and English together and then these languages are available in society to interact with for a child and the effort is being made in an organized, systematic classroom then all of them would be considered second languages.

However the foreign language is learnt systematically after similar or the same age of maturity but the difference is this language will not be available in the society, in the real world where the child interacts. So the terms like first language, second language and foreign languages are notions. And these are not, the mathematical significance of these terms are not relevant. They could be singular, they could be multiple. The idea of foreign language is not related to geographical boundaries.

Any language depending upon what stage of maturity we begin learning the language and who and where, whether in organized set up of a classroom or in a natural environment we learn the language, will define second language. And at the same time, any language which is not part of the immediate society could be a foreign language in that society.

For example, if anyone begins learning Manipuri or Mezzo or Santali in Chennai, these languages could be considered foreign languages in Chennai. At the same time, learning Tamil in Imphal could be a foreign language for Imphal. Thus these terms are going to be used several times. These terms are used in technical understanding. Also these terms are used in general for referring to the points of discussion but a clearer understanding about these terms is required for us to understand what follows hereafter. One more point that will be relevant in our understanding of our second language learning which we are going to discuss in a moment is the level of maturity that we have mentioned.

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Second Language Learning

- Learning of second language after first language acquisition.
- A second language can be acquired in a structured way as well, in a classroom or by a tutor.
- Many children acquire several languages as first language(s) in a multilingual environment.
 - A child born of a Bengali mother and a Punjabi father and growing up in New Delhi, may acquire Panjabi, Bangla, Hindi, and probably English at the same time as first language(s).



Learning which we are going to discuss in a moment is the level of maturity that we have mentioned. And that is the level of maturity which is known as critical period. So thirteen years of age is technically defined as critical period. So let us first understand the notion of second language learning and then we come back to critical period once again. And then we will evaluate both of them in the context of second language learning.

So learning a second language after a first language is already acquired is called second language learning. In other words, there are two things that are required for something to be called second language learning. Certain age of maturity that is thirteen plus years and the usual assumption is, before thirteen years the child would have already acquired first language. So these two things have to be there for something to be called as second language.

Another important thing what follows from this definition is any language if attempted before thirteen years, if the child comes across that language before thirteen years of age, let us say, after six, seven, eight, nine or ten, it is possible that the language and the learning of the whole language could potentially turn into first language. Therefore a certain level of maturity is required then the second language can be acquired in a structured way as that will be in a classroom or by a tutor.

So this structured way is another requirement for learning second language. The another point for us to understand in this context is many children indeed acquire several languages as first language as we have discussed in a multilingual environment little later, we would like to underline that every

environment is multilingual environment.

And it is just not possible that any language is just one language. We have underlined it briefly in our discussions while understanding language and society at initial stage. That is, where we were trying to define language as multilingualism. So we would come back to the point that every language is multilingual; every environment is multilingual environment. But for the simplicity of our understanding, we would simply want to reiterate it again, that it is possible, that several languages could be learnt as first language in a multilingual setting.

Take for example; we have discussed the example, just for the purpose take another one. A child born of a Bengali mother and a Punjabi father and growing up in New Delhi may acquire Punjabi, Bangla, Hindi and probably English at the same time as first languages. That is what we have been discussing, in order to understand, the terms, to clarify these terms with the help of what follows from a technical understanding of output.

Similarities and differences are what play a very important role in acquiring a second language effectively. And here the similarities and differences between the first language and the second language which are also referred to in literature, in general, as L1 and L2. These differences can help us predict the kind of problem that will be faced by the learner.

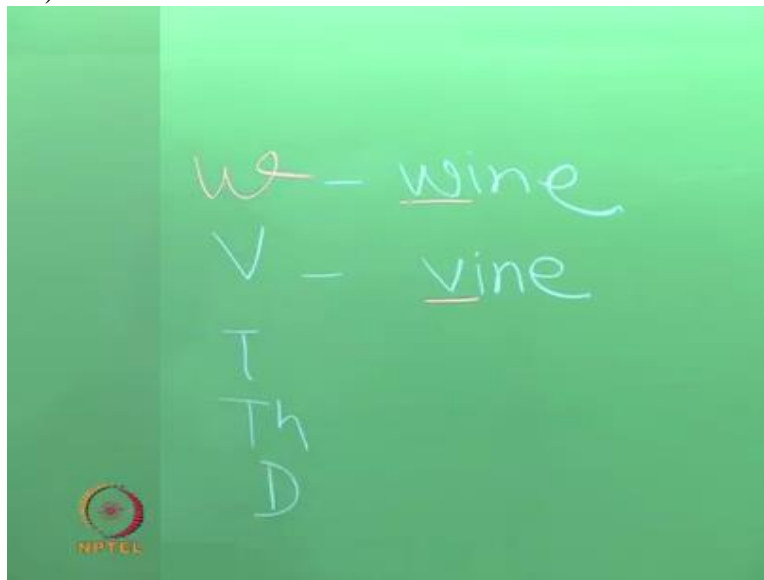
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- Similarities and differences play a very important role in acquiring a second language effectively. These differences can help us predict the kinds of problems that a learner will face.
- L1 to L2 transfer/interference is considered positive if the structure exists in both languages and enhances the chance of the learner to acquire that feature in L2 as well; however, if there is a feature that is not there in L1, then it makes it hard for the learner to acquire it in L2.
 - Examples from learner who wants to acquire English and is a native speaker of Hindi and the other way around.



So we will come back to that in a moment again. Let us see the L1 to L2 interference is considered positive; if a structure exists in both the languages and enhances the chance of the learner to acquire that feature in L2 as well. Now, however, on the other hand, if there is a feature that is not there in L1, then it makes it harder for the learner to acquire it. Take for example, someone who wants to acquire English who wants to learn English and is a native speaker of Hindi, for a person like this, as we take an example of “Waa and vaa”. Now Hindi does not make the distinction between two terms as I would discuss it on the board I am talking about the terms like this and this a word like this.

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Now please understand these two sounds are namic in a language like English; but they are allophones in a language like Hindi. In other words, Hindi does not make any distinction between these two sounds. However, English does so. The non-availability of the difference between these two sounds in Hindi is going to make it hard for Hindi speakers to learn English with respect to these two sounds.

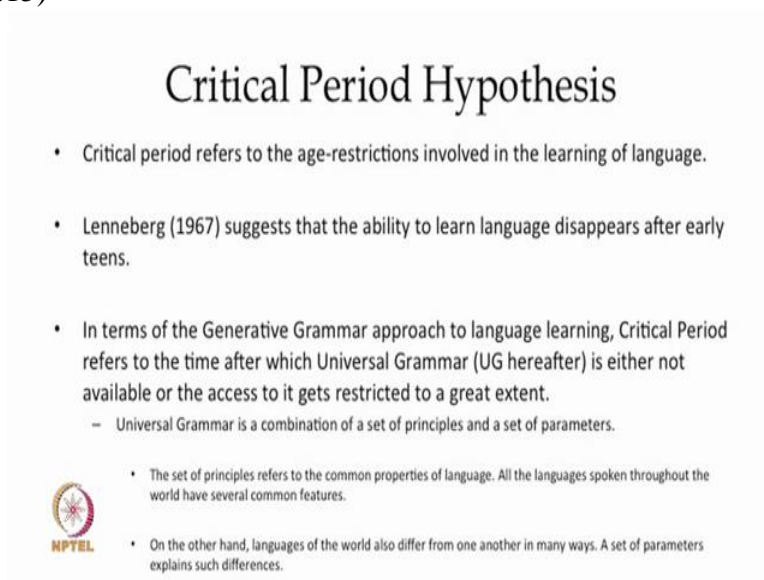
At the same time, if a native speaker of English is trying to learn Hindi, what will become a difficult point for English speakers to learn Hindi are sounds like ‘ta or tha or da’. These are retroflex sounds, where the tip of the tongue curls back and hits the upper part of the hard palate or the tithres or the area in between. Now English does not have these two, these sounds. So if someone wants to learn these sounds and a language like Hindi has all these sounds available.

So for English speaker to learn Hindi, these sounds are going to cause difficulties. That is what we mean by the term that the interference is significant. And L1 to L2 transfer will depend on these things.

So what would possibly happen depending upon the age limit for a learner of English, who is Hindi speaker, will probably never get the distinction between these two. However English speaker learning Hindi will probably never acquire these sounds.


Now having defined what we call second language learning and having contrasted with what we mean by first language learning, we would like to understand the critical period.

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Critical Period Hypothesis

- Critical period refers to the age-restrictions involved in the learning of language.
- Lenneberg (1967) suggests that the ability to learn language disappears after early teens.
- In terms of the Generative Grammar approach to language learning, Critical Period refers to the time after which Universal Grammar (UG hereafter) is either not available or the access to it gets restricted to a great extent.
 - Universal Grammar is a combination of a set of principles and a set of parameters.

 • The set of principles refers to the common properties of language. All the languages spoken throughout the world have several common features.

• On the other hand, languages of the world also differ from one another in many ways. A set of parameters explains such differences.

This is also, there is a term called critical period hypothesis and as I mentioned before thirteen years of age, maturity at the age of thirteen is considered as critical period. And it is assumed and argued that language is learnt prior to thirteen will all fall into the basket of first language and efforts made in learning language after this period will fall in second language.

Now let us understand in its historical context, in terms of generative approach of language learning, critical period refers to the time after which universal grammar is either not available or the access to universal grammar gets restricted to a greater extent. In other words, once again, we simply want to say that after thirteen years of age, the difference in learning and probably why we have to make conscious efforts in learning is because the access to universal grammar starts decreasing. And then we have to make an effort to access those things; those universal, fundamental, principles of language.

Now it is not fair to say that this access to universal grammar gets completely erased. Just a footnote on Universal grammar, it is a combination of set of principles and a set of parameters. The set of principles refers to the common properties of a language and all languages spoken throughout the world have

several common properties, common features. However, languages of the world also differ from one another in many ways. And a set of parameters explains such differences among languages.

We have looked at these terms in just a foot note. I invite you to look at a detailed discussion on universal grammar and principles and parameters to understand generative approach. However, going back to generative approach, where generative approach talks about developing the capacity of language and in doing so, that is, in developing the capacity of language what is very significant is the role of universal grammar which is part of language acquisition device and which is also considered that every normal human child is born with these things.

So with the notion of critical period, what is expected is and what brings the existence of the notion of critical period is, access to universal grammar. The access of universal grammar is probably intact until thirteen years of age. And after that it starts fading. That's the idea of critical period and this is what is called critical period hypothesis.

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Neurological Basis for Critical Period

- Lenneberg (1967) finds specialization of brain function in one hemisphere responsible for the loss of access to UG.
- Lenneberg gives neurological evidence in support of critical period hypothesis.
- On the basis of such evidence he shows the differences between the language of children and the language of adults.
- In his findings, he suggests that injury to the right hemisphere causes more language problems in children than in adults.
- He found that even after surgery in the left hemisphere, children were doing well language-wise. Such surgeries caused no damage or language impairment in children, in fact they rapidly recovered the ability for language. However, after the same kind of surgery, adults permanently lost this ability.



Lenneberg who started talking about in 1967, he builds a neurobiological case for critical period. He does not talk about it in terms of generative approach. What he shows through his experiment and what he has found that specialisation of brain function in one hemisphere is responsible for the loss of access to universal grammar. So he gives neurobiological evidence and here is what he talks about.

And he has found that on the basis of such evidence, the differences between language of child and language of adult can be explained. And also he has found such a difference while studying the

language of children and language of adults. He finds that injury to the right hemisphere causes more language problem in children than in adults. That is, if the right hemisphere of the human brain is hurt, damaged, such a thing will cause more problems in children and less problems in adult.

And what he finds that children were doing very well language wise even after the surgery to the left hemisphere. And such surgeries in children cause no damage or language impairment. Rather any kind of surgery in the left hemisphere of grown up people had caused language loss or permanent loss or language difficulty. Children could rapidly recover after the surgery in left hemisphere. Grown up people could not.

And this is the basis on which Lenneberg builds the case for critical period. There is a scientific rationale in this approach. My point is whether we look at the neurobiological basis or we look at generative approach, both ways, there seems to be some relevance of critical period. What is going to be crucial is the following.

Critical Period and Second Language Learning

- An early beginning makes a difference only in terms of the acquisition of pronunciation involving features of segmental and supra-segmental speech.
- The learning of vocabulary, phrases, syntax and discourse does not seem to cause any problems to the adults.
- There is striking difference between children and adults in comprehending language as a formal system. Adults learn about language by studying linguistic rules. However, for young children language is essentially a tool for expressing meaning. This is in line with Halliday (1973) where he points out that young children respond "not so much to what language is as to what it does".



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That is how it works for the second language learning. For the second language learning, of course, in early beginning makes a difference. But what is being argued in the domain of second language learning is, an early beginning make a difference; only in terms of acquisition of pronunciation. And such a difference is caused by segmental or super segmental features of speech. When this was looked at more carefully, then people found that learning of vocabulary, other lexical items like phrases or syntactic computation and discourse does not seem to be causing any problem for adults.

In fact there is a striking difference between children and adult in comprehending language as a formal system. Adults and it was argued that adults learn about language by studying linguistic rules. However for young children language is essentially a tool for exposing need.

And Michael Halliday, around seventy three, has discussed this. Where he points out that young children respond not to, not so much to, what language is, as to what language does. So there are differences between children learning language and grown up people learning language. And that has been established before. That is why we call children learning language is called first language acquisition and adult learning language called as second language learning.

But here is something new, that we observe for the purpose of learning, second language. We are saying that the difference primarily lies in phonological features and not in syntactic domains, not in morphological domains; the language faculty is not lost at any point in maturation even after critical period. That is universal grammar is not completely lost

Critical Period in Second Language Learning

- Language faculty is not lost at any point in maturation even after the Critical Period.
- The reason why learning of pronunciation becomes difficult after a point of maturation lies in human physiology. The conditioning of vocal tract takes place too early while learning language. A difficulty in attaining native like pronunciation is purely attributed to physical constraints of difficulty in the movement of muscles, jaw, and tongue.



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The only argument is whether it requires effort in accessing it? Or is it available the same way all the time? But it is not lost completely. When people studied the difficulty in pronunciation, they studied the reasons why learning of pronunciation is difficult after a point of maturation. And they found the answer that lies in the human physiology, which is conditioning of vocal track, takes place too early while learning language.

And difficulty in attaining native like pronunciation is purely attributed to physical constraints of difficulty in the movement of muscles, jaws and tongue. So how tongue moves and how we move our jaw and several muscles move and all of this is called conditioning of vocal track. And these are physical constraints. So what we find is an early beginning makes a difference, because these things are not totally constraint. It is possible to reset the movement of muscles, jaws and tongue. If the attempt to learn languages is made little early, after a certain point of maturation, it is difficult to re-adjust the muscles and movements of tongue and jaw. That is, what causes the difference and that is what is the reason, why learning of pronunciation becomes difficult after a particular point.

What follows from this is the kinds of difficulties people attribute in learning language is not because of, not primarily because of, access to universal grammar in terms of faculty of language. Rather it is because of the physical constraints and that physical constraint is naturally going to take place little early.

Krashen and Second Language Learning

- Makes a distinction between acquisition and learning
- Languages are always acquired.
- Learning is always a conscious process; language acquisition is invariably sub-conscious.



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Then comes Krashen and with his bulk of work on second language learning. He makes a distinction between acquisition and learning which we have established little early. And the more significant point that Krashen makes is, about the point that languages are always acquired; the point that he makes is, acquisition is going to be invariably subconscious process. And huge part of language is always acquired and therefore is going to be subconscious .

And only little bit of it going to be conscious process which is learnt. So probably what Krashen is

hinting at is re-adjustment or not being capable of re-adjusting movement and physical constraints in pronouncing some of the sounds is going to be attributed to learning whereas rest of it is going to be attributed to acquisition.

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- The only conclusion we can draw is that there are no easy answers to the CPH issue.
- It is rather naïve to say that the language acquisition capacity suddenly changes after the age of 12 or 13.
- It is possible that there are different periods for the growth of different aspects of language; it certainly seems to be the case for phonology.



The conclusion that we can draw here is, it is not easy to answer the critical period hypothesis issue, in the sense of second language learning. And some people, even go to the extent of saying that, it will be naïve to say that the language acquisition suddenly changes after the age of twelve or thirteen. What they are saying is probably it doesn't, what is responsible for, what seems to be changing the capacity to learn language is located in physical constraints. And it is possible that there are different points for the growth of different aspects of learning and it certainly seems to be a case of phonology.

So the difficulties of second language learning, in some sense, is attributed to phonological difficulties in getting native like pronunciation due to some segmental and super segmental features which does not come to us because of the maturity of tongue, jaws and movement of muscles. Rest of the parts remains similar to that of acquisition which takes place as first language. This helps us understand, this discussion helps us understand that all the developments in ordered.

That is, we have tried to look at first language acquisition first we have tried to understand the meaning of several terms which becomes clearer after propositions from Mentalist framework. And then finally we get to see, understand critical period which in turn explains the difficulties in terms of Lenneberg Generative framework and Krashen.

And then we have also seen that, this is not so clear. However, what is important to settle down with is, there are differences between first language and second language in terms of learning. Whether they are possible, they become apparent, because of access to universal grammar or some sort of physiological maturity. That could be a matter of debate but there remains a difference between first language and second language ;first language acquisition and second language learning.

In the repertoire of language speaker, user in the society, we find an interrelationship between the two. What we will be looking at here, hereafter, is how does it work in the society? We will be looking at examples of those things to understand this. Thank you.