Bilingualism: A Cognitive and Psycholinguistic Perspective
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Module - 02
Bilingual Acquisition Part - 01
Lecture - 04
Bilingual acquisition among children: simultaneous bilingualism

Welcome back. Today we will start with module 2 of this course.

So far, we have seen the background information about bilingual societies, about individual bilinguals and some of the general understanding on who should be considered a bilingual and how it can be, how bilinguals are not all the same, not all bilinguals are same, how there is a lot of heterogeneity even within that category.

So, with that background in place, now let us move on to the cognitive and psycholinguistic exploration on this phenomenon. Now, from psycholinguistic phenomenon and cognitive phenomenon, the primary focus is always on the mind, how the human mind deals with any sort of scenario. So, that applies even to language, language as in how you learn language, how one uses language and interprets language and so on.

So from that perspective, this basically understanding language and language development is a window to the human mind's development from childhood. How a child develops over a period of time also has language as one of the important components there and as a result of which, studying bilingualism from this perspective also takes us there.

So, let us start with where it all starts, meaning how languages are acquired, how two languages are acquired, bilingual acquisition, so, to say. So, bilingual acquisition when you talk about bilingual acquisition there are primarily two types, there are children and there are adults. Children who learn two languages from their early childhood, on the other hand you have bilingual adults who learn their second language later in life.

So, these are the very broad divisions on the basis of the age of the bilingual age of acquisition of the second language.

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So, the first category of course, is the children, the language acquisition in among children, more than one language acquisition among children. A bit of history is important here, because bilingualism was not understood to be in a positive vein for a very long time in history. So, the initial studies on bilingualism were motivated by policy research basically policy in terms of education.

So, what are the needs, what are the policy necessities to make sure that children do not drop out of school that you know all the children in a class are equally capable of following the instructions and so on. These were some of the most important questions that were facing the researchers at a time. So, why was this the case was, a lot of immigrant children in the American schools, North American schools were found to be lagging behind their monolingual peers.

So, as a result of which it was also found out that these children are all bilingual. So, the idea was that these children, immigrant children, typically the Hispanics and other such children were not able to cope with the language of instruction, which was Standard English. Now, this took them to the second question as to what it is about those children that probably is the problem.

Now, in this scenario, given this kind of a background, bilingualism was considered a disorder, because all of these the immigrant children's were children were found to be were bilinguals. Typically, they would speak Spanish at home and the language of education in the school was English and this is where the problem was.

So, the idea was, the clear evidence was that bilingualism is a problem and this problem how to deal with this problem, there has to be a ruthless approach to it, in terms of using the majority language and totally eradicate the 'invading language'. So, this is what they called it, the mother tongue, the language of home was considered the 'invading language' because the children were not able to cope with the language of instruction since their Spanish language was interfering in the understanding.

So, if you suppress Spanish, children will do better in their English better in their understanding of English language. So, this was the idea. So, because this in language of invasion or invading language was the language of home and also the language of their

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own culture, their own heritage, basically their own identity. So, this entire thing had to be suppressed.

Now, this gist of this whole exercise was that bilingualism was a problem in general and bilingualism was a problem in particular, immigration in general.

This idea this view continued for some time. However, there was a major change that happened in the 1970s, when Anglophone Canadian children were made to go through immersion program in the French language. So, in Canada as you know there are Anglophone areas and Francophone areas. So, in the Anglophone areas children were made to go through French immersion program; meaning the entire education would be in and only in French.

Now, these children now have a similar problem like that of the North American immigrant children; one language at home, another language in the school environment. However, the interesting part that came out of this exercise was that these children did not have the same kind of problem or what is called 'bilingual pathology' as was found in the earlier cases. In this entire scenario had this unusual fallout that bilingualism was cleansed, so, to say of its pathological stigma. So, this marked a very important departure from the earlier standpoint.

Simultaneously however, many other things were also happening. One was that the bilingualism became a mainstream idea. Bilingualism became a mainstream idea what does it mean? It means that monolingualism as in how children acquire language, how we all acquire language our first language was a very important question to answer for a very long time in language research and that dominated the language research field. Now, after a few decades of research and understanding and resultant the data that we have, then the field was ready for a shift from monolingualism to bilingualism.

So, that was a natural progression from within the field. So, once you know enough on monolingualism, then you can take a bilingualism as a new area to explore.

Another interesting factor that also contributed to this focus on bilingualism was that psycholinguistics itself was going through lot of changes. So, from behaviourism; behaviourism was the dominant theoretical position in the till 1950s, 60s, which believed that language is a stimulus-response system. So, all you can understand about language is

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what is the output, looking at the output. But there was a change that came in with the cognitive revolution and Chomsky's contribution to it and also others'. Now, various mental processes were being looked at rather than the behavioural outputs of humans.

As a result of which, there was a shift from the 'product' to the 'process'. So, the focus was no more on the 'observable behaviour', but rather the focus shifted to what is happening behind the scene. That means what is the process, mental process, that underlies any kind of behavioural output, including language. So, that is another very important milestone that also has its impact on the on bilingualism research.

One important aspect that this cognitive turn into understanding human mind was that children's development now was understood in terms of developing schemas. So, children develop schemas through their experience in early childhood and which is based on specific experiences. As they grow, these schemas get more and more elaborated and also, they get restructured.

Now, in this understanding of the development of the human mind and how it later on turns out to be, is that children's experiences determine, to a large extent, how it will ultimately pan out. So, as a result of which, bilingualism, as an important experience, came into focus.

So, you see so many things came together in order to bring bilingualism to focus in the language research.

So, fine, all of this in the background, what happened. So, what new happened? Many things actually happened. So, there are many different approaches within linguistics that try to look at the issue of bilingualism.

Before we go on to our focus area of psycholinguistic exploitation, let us also take into account the contribution of other fields. So, the three fields that we will talk about are applied linguistics, socio-linguistics and psycholinguistics.

These have been the most prominent. Within applied linguistics, there have been the tradition is actually pretty long and they have three major approaches within applied linguistic take on language acquisition. These three approaches are called: contrastive

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analysis and transfer theory, creative construction hypothesis and the language acquisition device.

Language acquisition device as you all know owes its origin to Chomsky. So, applied linguistics used that his idea, Chomsky's idea, to also analyze and understand bilingual language acquisition. So, we will go through them one by one.

First one is in case of contrastive analysis, the idea was to look at how the two languages of a bilingual are different, right?. Because the focus is on contrastive analysis contrastive as in the contrast between the systems of the two languages. So, the linguistic comparison between languages basically were taken as an important indicator of the source of difficulty.

So, if my language does not have, let us say my L1 has no grammatical gender and my L2 does. So, bit comparing and contrasting these two linguistic systems will automatically tell us that the speaker will find some difficulty in acquiring the grammatical gender in second language. So, that is basically what contrastive analysis is all about.

So, the underlying theory was that the learners learn second language by substituting the target language forms into the language they already know. So, second language basically was thought to be learned through a transfer of ideas from the first language.

So, that is where the contrastive analysis came in.

After some time, this idea was replaced by what is called creative construction hypothesis and this happened in around 1970's, mid-70s. This says that one learns a second language by using the same process they used for learning the first language all over again.

So, in the contrastive analysis you learn second language by comparing it with the first language. In constructive contrast construction in creative construction the both languages are learned separately using the same process.

Third theoretical position was that the idea of LAD: Language Acquisition Device as proposed by Chomsky. This still is one of the most important and influential theoretical position on this subject. So, in this theory it is believed that we learn language by setting principles and parameters on the language acquisition device. So, that a device remains

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the same, there is a change in the principles and parameters based on which language you are learning. So, therefore, second language learning involves changing and resetting some of those principles, that was the idea.

We are not going to detail because that is beyond the scope of this course. Just to give you a background information as to how different schools of thought have looked at the same thing.

Sociolinguistic on the other hand typically focuses on the contextual factors, the contextual factors responsible for differential outcome in terms of bilingualism, ok?

So, they focus on the ideas of status in the language. So, if it is a high status language versus a low status language, depending on this sort of information, how it results into different kinds of competence in the learner. Similarly, there is also the idea of additive versus subtractive bilingualism.

Additive bilingualism is a scenario where learning the target language does not hamper the existence of the first language. So, first language is intact and you are adding another language to the system. On the other hand, subtractive bilingualism is the process of learning a target language with the intention of replacing the first language or mother tongue. It can be whichever term you want to use.

Mother tongue is not anymore used in this domain. We refer to them as L1 and L2 first language and second language. So, when the second language replaces the first language it is subtractive. When both when you add one after another, it is additive. Similarly, there is partial and full control of the language and so on and so forth. So, this is what the focus of sociolinguistic study of bilingualism is.

Now, we will move on to our primary area of interest, which is psycholinguistic way of looking at the same process. Now, as we have said in the beginning, psycholinguistics explore the psychological processes responsible for language use in humans. So, what goes on behind the scene, what are the processes, mental processes that are part and parcel of language use, language use will is a very broad term.

This will include language learning, language comprehending, producing and so on. So, as a result, this area of research focuses on why some people learn a second language better

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than others and when that is the case you need to take into account variables like motivation, aptitude, type of input, you know all kinds of forms of instruction and so on and so forth.

So, how are various variables, non-linguistic variables, are in they will interact with the learner and then hence the outcome. So, basically the entire process through which the system goes. Now, a very important aspect of this standpoint is that second language learning is understood to be complex, a lot more complex than the first language acquisition.

And hence the understanding of the background mechanism becomes even more crucial in this case. How are they complex, what are the complexities, what are the layers of the differences that is what we will now see.

To start at the very at the very root of it, the first and foremost difference that psycholinguistics talks about, in childhood bilingualism is the difference between simultaneous and successive bilingualism. The names are easy enough to understand. So, simultaneous bilingualism refers to a situation where the child learns both languages simultaneously, right?

And on the other hand, successive language acquisition is when you learn one language in succession of another, so one after another. Simultaneous is when you learn them together, successive is when you learn one after the other.

Now, these two types are different on many variables. Its not a very simple thing like you know one after another, but there are many other shades of differences. Some of them I have added here. So, in simultaneous of course, two languages are learned together, in case of successive they are one after another. As a result of which you can predict their onset of the of both the languages will be very early as opposed to successive, where the second language enters the system a little late.

And then almost always, the two languages are learned in a natural setting in case of simultaneous bilingualism. So, you are learning both languages at home or with your peer group or something of that sort. So, in the environment both languages are there and that thereby it makes it possible for the child to learn or acquire both of them together.

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On the other hand, when it is successive, more often than not the second language is tutored as in it is taught in a like in a school. So, when the toddler goes to school at three years of age, they start learning another language, which is the medium of instruction in the school. That is how you can learn your second language. So, typical differences are these.

So, as you can see already, age becomes a very critical factor deciding whether a child is a successive bilingual or a simultaneous bilingual. So, where exactly do you draw the line? When do you consider, what is the age bracket you consider where the second language should appear, in order for the child to be called a simultaneous bilingual? So, this has not been very easy and there has been lots of disagreements within the field, but largely the agreement is that around the age 3 should be the cut off.

So, because many researchers have provided data in support of this claim from various standpoints. One of them is the learning strategy. Then you have neurological point of view. So, learning strategies change across, over time in a child. So, by till 3 years of age they use one sort of strategy, but after three apparently, they use a different sort of strategy.

Remember we are looking at within this sub-domain, we are looking at language learning alongside the child's development on many other parameters, right? So, those developmental stages are going side by side as and when a child is also learning the language. So, those developmental stages change after a few years after every few years.

So, as a result of which there are boundaries, there are there are breaks as to how the child changes its strategy. So, that is where this difference of learning strategy comes in from. Another is the neurological point of view. Neurological point of view refers to that how languages are represented in the brain. So, as I say the child is growing from 0 to 3 years of age, the brain also develops during that time.

So, how things get represented in the brain also changes depending on the age bracket. So, as a result of which because of these two critical factors, many researchers have put forward age 3 as the cut-off. So, by till age 3 many things remain of one type, after three, things change.

As a result of which if a child has learned both of his languages before age 3, he will be considered a simultaneous bilingual. However, if the second language makes an

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appearance after age 3, then the child will be called successive bilingual. So, this is sort of the idea.

However, many researchers including Grosjean, have agreed that this should not be a very watertight compartment; because children like any other humans, they are not exactly replica of one another, there are individual differences. So, those stages might not be a very very strict sort of a compartmentalization and hence we should keep it open.

So, due to all of these different kinds of ideas floating around, different kinds of theories being put forward, De Houwer came up with a rather strict definition of simultaneous bilingual because if one wants to look at simultaneous bilingualism in children and the different kinds of parameters within it, one needs to have a clear idea.

So, keeping that in mind and trying to clear the confusion surrounding this, he came up with this idea of Bilingual First Language Acquisition. So, in it is call a BFLA in short. He defined it as the development of language in young children who hear two languages spoken to them from birth. So, he is not taking 3 year, 4 year any such boundaries. He just says that the child should be exposed to two languages from birth in order to be considered a simultaneous bilingual.

Now, this brings another set of problem. Imagine some children listen to two languages from birth. Let us say their parents speak different languages. So, parent mother speaks language A and father speaks language B. So, child listens to both. Often it has been seen that many children even if they are exposed to two languages, they choose to speak only one. They are called passive bilinguals.

Now, if you had a passive bilingual, it becomes a little difficult and tricky to study bilingualism in the child. So, in order to clear that again and to have only those children who not only are exposed to both languages, but also use both languages from early childhood there have been some proposals.

One of the most important proposals in this regard came from Grosjean and Li .Grosjean's definition of bilingualism is very simple, regular use of two languages. So, combining this with De Houwer's definition now BFLA is considered to have this new definition concurrent acquisition of two languages in a child who is exposed to them from birth and uses both the languages from early childhood.

So, that is a very clear definition. There are there is no confusion. So, those children who have been exposed to two languages, at least two languages from the from birth and they have also been using those two languages from early. So, they are the ones who are the clear example of simultaneous bilingual.

Now, where one is a simultaneous bilingual, you can easily understand that there is no concept of first language and second language, because first and second are understood in term in chronological terms, one after the other. So, in this case, there is no first language and second language. Hence there is no dominant language and less dominant language, theoretically speaking.

As a result of which some researchers have preferred to use language A, capital A and small a or sometimes it also written as alpha, not to use to avoid the use of language A and B, you know to differentiate them further; because you cannot really when both languages are being exposed to and both languages are spoken simultaneously, the differences become very less.

So, in order to show that lack of difference, many researchers prefer to write them as like this A small a or A and alpha.

Now, it is a very interesting domain of research, a lot of complex findings have been found out, a lot of contradictory findings are also there. We will try to see some of them, because due to brevity of time we cannot go into detail or into all of them, but we will see the broad points as to what are the nuances within simultaneous bilingualism.

One is that studies have found that simultaneously learning two languages at an early age makes children unable to distinguish between their languages. So, there is a lot of mixing, within the simultaneous bilingual's output. So, when children speak simultaneous bilingual children speak, from in their early age, there is a lot of mixing that happens between the two languages. Now, this mixing has you know happens at all the levels: phonological, lexical, phrasal etcetera and this is taken as an example of an underlying unitary system.

However, it is not as simple as that as we will now see. One of the earliest detailed study of simultaneous bilingualism come from Volterra and Taeschner 1978. This was a longitudinal study, tracking two kids, two German-Italian, simultaneous bilingual girls and

they were based in Rome, Italy and their development was tracked and the theory of three stage model came up from there.

These three stages of acquisition are somewhat like this. This is in stage 1, you can see that lexicon and syntactic system are only one, unitary system. So, that is one lexicon and one syntactic system, even though the children are exposed to two different languages. Ultimately what they have at that stage is only one lexicon that includes words from both languages, one syntactic system that includes structures from both languages.

In stage 2, lexicons get differentiated, they start to understand that there are the words are different and they are they coming from two different languages and however, they still understand the syntactic system as one. And then the stage three is when they have differentiated both the languages in terms of both lexicon and in terms of syntactic system.

So, that is when the child is understood to be a true bilingual and this typically is said to happen by the age of 3 years.

Now, this is how the learning process proceeds. So, there are three stages, in stage 1 lexical system, which includes words from both languages. So, basically what does it mean? That one lexicon, the child does not understand that a referent X can be called one and two by from two different languages. So, one thing may have names that have different names from different languages.

So, that understanding has not yet developed and then of course, stage 2 and stage 3 as we have just seen.

So, let us go into a slight more detail based on the paper, based on this 1978 paper. So, stage 1, they have only one lexical system that includes words from both languages. All the words that they know, they form one lexical system, ok? So, a word in one language almost always does not have a corresponding word in another language.

To give you one example, let us say a Hindi English bilingual environment has given rise to a simultaneous bilingual. So, the child does not know that the word [ghar] and 'house' refer to the same referent. Even if he has he or she has both the words in his or her lexicon, probably she will make some interesting semantic manipulation there, because they do not understand that the same thing may have two labels.

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So, words from two languages frequently almost always also appear together in a three word construction at this stage and they do not also make much sentences, because this is the earliest stage of language acquisition when they do not yet speak in sentences.

So, there is one example given in this study, where this child uses the words 'la' in Italian and 'da', both of them mean 'there' as opposed to here in these languages. And; however, she knows both the words, but uses them in different contexts. So, she has created, she knows both la and da and she has created her own way of utilizing them.

So, this is one conversation from that study that I have quoted here. So, she shows the cat, she wants to show her mother the cat that she has seen. So, she says mother says where is the cat and she says that there. So, in the beginning there is 'la' when the cat is not visible and when she takes her mother outside and the cat is now visible, she uses 'da'.

Even though in these two words are actually they refer to the same thing. Similarly, this girl, whose name is Lisa, does interesting things with words like da and daki. These are two different words in two different languages and they actually have different contexts of use.

However, she makes some interesting permutations and combinations even there. So, this is typical of the first stage of bilingual acquisition in case of simultaneous bilinguals.

These are some examples. So, at this stage, because there is thisinteresting manipulations of the lexicon of a child, many researchers have called it said that this at this stage the children have a language system of the child's own. It is when the knowledge of two languages grows in the child and the child is able to generalize across languages and that is when they start distinguishing between the lexicons of the two languages and that is when the stage 2 starts.

At stage 2 they understand that the different words referring to the same object coming from different languages. But what they do is however, that the choice depends on the context of learning. So, child has now corresponding words in both the languages, in the sense that the same object can be referred to. However, a very interesting thing here is that words drawn from two lexicons do not occur together in the construction unlike it does in stage 1.

Very important interesting aspect of stage 2 is that the even though they have understood the words as you know having the same referent, very often they tend to use them in the context of where they have learned. So, even going back to again Lisa, she knows that both occhhiali and brillen refer to glasses. So, occhhiali is an Italian and brillen in German. However, she insists on using it only in that particular context.

So, when the father says what is this? she says 'brillen' because he is wearing when she points to the there was an interesting backstory to this. So, there is a painting that she that her mother has done a drawing of somebody with glasses. So, when she shows that painting to her father and refers to the glasses as brillen in German because that is what her mother has taught.

But when she points to the father's glasses, she refers to father wearing the glasses she refers to the mother occhhiali and then she completely refuses to acknowledge that brillen and occhhiali are the same thing. So, she even though she knows both of them refer to glasses, she in her mind has differentiated them in terms of usage.

So, when the father is wearing the glasses, it is occhhiali, when it is in a painting it is brillen something like that.

So, she repeats the same every time she looks at the father's glasses and insists on calling them occhhiali and does not call them brillen. That is how stage 2 looks.

And then gradually the child moves on to stage 3. At this stage the child speaks two languages differentiated at both lexical and syntactic level. However, here what they do is now they know that there are two languages that they are speaking, but they maintain a one language one person kind of a system. So, in this case, in Lisa's case, she talks to her father in Italian and with her mother in German.

So, at the end of this stage the tendency to categorize people in terms of their language gradually goes through various you know stages of changes. And after that, when they realize that in they are you know one language one person formula does not always work and they tend to get more and more generalized in terms of their ideas about language and its use, that is when researchers agree that the child has truly become a bilingual.

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This study is pretty old as you see in 1978 and there have been many studies after that who do not always agree with the three stage formula. There have been many contradictions starting pretty early already. Many studies have found that the mixing that this 78 study talks about, actually varies it is not the same across population not all children show similar amount of mixing.

So, roughly the idea is that 20 to 30 percent stage 1 and then it gradually kind of decreases.

However, the explanations for this mixing have been not very uncontroversial. So, some of these explanations that have been put forward. One, of course, was the unitary language system that the child in the initial stages create in his or her mind a unitary language system; where all the inputs from both the languages form only one, but one understanding.

So, there is no division. So, as a result of which it is understood that the child and the brain creates a single system, kind of a fused system in the brain. So, that was the initial explanation for this kind of mixing. So, when both languages' inputs are coming into one storage system, there is a there is a fusion sort of thing that is happening. As a result lot of mixing and matching between the languages lots of influence of one language onto another and many such things can happen.

Now, one way of explaining out this mixing has also come from adult speech research. Many, many researchers have pointed out that bilingual adults also regularly mix. This is nothing, seem nothing spectacular about child learning two languages. This is something very common, even in the bilingual situation in the adult scenario people always mix.

Some researchers have also pointed out that parents' linguistic practice could also have an impact. It may not be how the child says it, but how the input has been given. Often the parents who know more than one language probably would also be using a bilingual mixed language in the environment leading to the child picking up the same.

Similarly, the context of use. If the child is talking to the father and trying to convince him more, probably the child will tend to use the father's language more. It is it has nothing to do with a lack of understanding, but rather the context of use, that has also been pointed out.

Another serious issue with this mixing and how it actually works, has been from the idea of incomplete reporting, that often this studies have very few subjects. So, in the 1978 the study was based on two children. Similarly, many other studies have reported one child or two children, very small sample size. So, often what happens that others have pointed out, that they do not report the entire thing. What is probably the convenient parts are reported and the messy parts are often omitted.

So, we do not really know what the whole picture is and hence one cannot conclude the on the true nature of the mixing and why it happens. And then there are some researchers who have point out pointed out that it might simply be a matter of convenience. Some languages have better expressions for a situation, compared to others, better as in more salient more easily accessible words.

For example, in case of Hindi-English bilinguals, we often shift to English when we need to talk about some technical things. So, because it is easier that way, it is you know more salient those words are available more readily. That could also be a reason, it need not be something very striking. So, better options in many cases. Another example that a Vihman 1985 have given is that structural factors of a language.

So, function words in her study on Estonian-English bilingual child she refers to the structural linguistic factors like function words. In this case she says that English function words were easier than Estonian and hence the child was probably using them more in Estonian context. So, the lot of mixing of English in Estonian and not the other way round. That is and she pointed out the factor of being a salient, salience, as an important factor here.

And last, but not the least, even monolingual children, they use a lot of extensions you know the over extension of one word. So, when they have less number of words in their vocabulary, they use the same word in many different contexts, making various kinds of permutations and combinations.

So, that is not something that is only typical of simultaneous bilingual children, but also some found among monolinguals.

So, these are some of the varied explanations that were provided in the aftermath of these kind of findings. So, that is one.

Another interesting angle to this study is that the study on based on the German-Italian bilingual children by Volterra were of one particular type. The parents here used one language one person strategy, right? So, the father was an Italian, mother was speaking German and they decide they made sure to speak only that language to their child. So, that was one language one person formula, but that is not the only option.

There are many other options, as we have seen that bilingual scenario can be varied. There can be layers, there can be various types. So, what about the other types? Many other types of scenarios have also given rise to successful simultaneous bilinguals. So, what are some of those strategies? There are other possibilities are like one language one environment.

So, depending on the environment, language is dependent. It is not dependent on person, but it is dependent on the scenario. So, home scenario versus peer group versus another scenario and so on. A third possibility is one language without community support, one environment. What does it mean? Parents with different native languages speak one of these languages at home and the ambient language which is neither of their native language, outside home, right?

So, both parents have different languages, native languages, but only one of them is used at home and another language that is used outside is the ambient language or language of the environment. That is another kind of strategy.

Yet another is two languages without community support, one environment. So, where the child is exposed to two languages from each parent or caregiver and another outside.

So, you see various kinds of possibilities exist in the bilingual environment of the child depending on all these factors: the participants, the environment, the community support and so on and so forth. And last, but not the not the least there are those bilingual scenario and the non-native parents scenario.

So, bilingual scenario is when the parent themselves are bilingual and they use both languages at home. And non-native parents, of course, when one parent addresses the child in a second language despite an otherwise monolingual setting. So, they can use, the father

or mother, can use a second language at home even though the otherwise the setting is monolingual.

So, basically this tells us that there can be different types of setting within which a bilingual child can grow up and in all those scenario they can grow up to be a simultaneous bilingual. So, it is not just one language one person formula. As a result of which we see different kinds of mixing strategies, we see different kinds of factors within that. So, as a result we now have counter to the three stage formula.

So, given that there are many types of strategies that lead to successive bilingualism, this three stage formula has now been questioned. Later works there are many studies that we will refer to here. So, later works argue that children are able to differentiate words from the two languages actually pretty early, unlike what Volterra claimed. Volterra claimed that in the initial stage, stage 1 they do not know how to differentiate. But later works show that they actually can.

Genesse's work of course, is very important and he is he refereed that reason for mixing is not due to lack of words. They mix not because they do not know, but probably there are some other factors. Cantone on the other hand, showed that children differ in terms of mixing, not all children mix the same way. Some children mix only one language. So, in Estonian, she was mixing lot of English into Estonian. Sometimes the mixing happens equally on both sides. Sometimes they do not mix at all.

So, all possibilities exist, its not one size fits all. Meisel on the other hand, showed that fused syntactic systems also may not hold. So, the claim that the both the lexicon and the syntax are fused also probably are not tenable. Now, this study involved studying syntactically contrasting grammatical systems in German-French bilinguals.

He showed that from the very beginning, children are capable of differentiating between them, learning them separately and using them separately. Muller et al works looked at learning of verb second property among German Italian bilingual child named Carlotta. Now, she could use this language specific structure from a very early age. German and Italian have different structures with respect to the verb form.

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German uses a verb second property and this child learned that property perfectly fine from a very early age. And differentiated it from the Italian. The same group again studied a investigated language specific subject realization in German-Italian bilingual child Jan.

And German has a lexically realized subject whereas, in Italian it is possible to have null subject in a majority of the, 60-70 percent of cases in Italian null subject is allowed. But in German it is not allowed. The children were found to master even this from a very early age. They did not mix up.

So, in case of German, they did not use null subject and in case of Italian they did not use the overt realization of subject information. So, basically findings there are many other such findings, that show that probably there is no fused system. So, this is this fusion is probably not correct, both at the lexical and the syntactic level.

Now, this kind of contradictory findings brings us to two different kinds of hypothesis, two different development hypothesis development of the language skill among the bilingual simultaneous bilingual children. One hypothesis is separate development hypothesis, which is just proposed by De Houwer. This hypothesis holds that each language develops separately. There is no fused system, that is no unitary system.

The systems develop perfectly fine independent of each other, right? There is no mixing up. There are many others who have also supported the finding as we have just seen. On the other hand, what we have seen before is the unitary system or this is also called interdependent development system by Paradis and Genesee.

It says that the two languages develop in an interdependent way, thus leading to mixing. So, the mixing is an is analyzed, in mixing is attributed to having an interdependent interlocked sort of a system, fused system. There have been a lot of studies that have found support for this as well.

Now, how do you understand this? How can both be true if one is the opposite of another? How can that be true? This brings us to another notion, very important notion within bilingualism, simultaneous bilingualism is the idea of cross linguistic influence, the kind of mixing that we see the kind of influence of one language on to another that we see.

So, CLI basically refers to the very common phenomena of bilingualism, within bilingualism, that there are one language is affecting the other. So, interdependent system or a fused system already has talked about this that because this is they are together and hence there is a lot of give and take possible. So, there is lot of cross linguistic influence possible, mixing is common, understood.

But then if you, but if you go by the separate development hypothesis, if you go by SDH, SDH cannot allow CLI, because the languages are kept very separate there, they learn them separately, creating their own separate system. Then why do we still see a lot of mixing? So, that brings us to the second layer of the problem.

How do we make sense of this contradictory, this kind of contradiction the mixing and the CLI? There have been many ideas put forward, but largely they can be understood through three different kinds of explanations, the different kinds of theoretical positions. One is the language dominance theory.

Now, Yip and Matthews study they have they looked at Cantonese English bilinguals and they put forward the idea that the language which is dominant. Even when you are in the child is growing up in a bilingual setup, chances are only in an ideal situation both languages will have 50 percent of input, but that does not always happen. So, one language becomes dominant language, the other becomes less dominant language.

So, as in this kind of a scenario, probably the dominant language will have more influence on the less dominant language. So, that is the explanation given by Matthews and Yip. Another is that sometimes the same data has been data-set has been interpreted differently by different researchers. For example, this study by Mishina Mori in 2005, they found proof of both separate development hypothesis as well as CLI, between Japanese and English bilingual children.

But the same data was interpreted by De Houwer as supporting only separate development hypothesis. There are even finer nuances, we are not getting into that, but this is basically what the finding is. And then there have also been proposals that perhaps there are some domains, within the language system, that are more prone to CLI than others and this seems to be a very plausible explanation. We will see now why.

Because of this contradictory systems of languages showing separate development, at the same time also showing a lot of mixing and all of these data, none of them can be really ignored, all of them are, you know, results of careful studies. So, both of them exist, separate system exist mixing also exist. Now, this has given rise to some researchers proposing that probably language should not be seen as a single system. So, German is not just as a language German, but it has many layers within the language system.

So, there are even within syntax, there are layers within lexicon, within morphology, there are many layers. So, what if we look at language not as a single system, but as a system having many subsystems. Now, within those subsystems, some are probably capable of developing on their own independently, separately, and some subsystems probably are more prone to or they have called it vulnerable, vulnerable to influences.

If you take that standpoint then many of the findings can be seen through that prism, then it becomes easy to understand. So, languages can develop separately and still influence one another if we take this subsystem view.

So, in fact, simultaneous bilingualism does allow, as per Muller, separation of some of the grammatical aspects while keeping some domains open for influence. So, a very influential paper, influential study in 2000 by Hulk and Muller, they have a very important proposal. This their detailed study proposes that linguistic properties and grammatical aspects structures can predict CLI.

So, basically how what are the properties between those two what are the grammatical properties between the two languages of the bilingual, that decides whether you will find CLI or not find CLI. Dominance factor is ruled out by this particular study. They say that language dominance or preference probably are not what is creating the problem, the creating the influence that we see, the mixing that we see. What basically it is the structure.

So, there they propose a particular grammatical structure that makes it possible, for that makes it open for CLI. So, this is how they put it. The vulnerable grammatical phenomenon is an interface property. For example, interface between syntax and pragmatics. So, what do we mean by interface syntax and property and pragmatics? For different pragmatic functions, the syntactic structure of a language probably can be manipulated.

So, when syntactic structure has a pragmatic function, this is called one of the interface types. So, if that is the case, this is one example. If this kind of a scenario exists and the surface string of the two languages are similar for the expression of these vulnerable grammatical properties. So, the language A has only one option for expressing that whereas, language B has more than one expression.

In such a case this is possible that you will find some amount of CLI. So, they gave one example which is the idea of dislocated sentences, which are syntactic structures that serve the pragmatic function of foregrounding or backgrounding of sentence parts. So, 'he' the use of pronoun sometimes uses as a foregrounded object in French sentences, has the function of focusing on that subject. This is a very common aspect of French language.

So, a French-English bilingual children use more of dislocation in their English than monolingual English speaking children. So, when French-English bilingual speakers have this idea this interface, grammatical interface, of using different kinds of syntactic structure for the purpose of foregrounding the information French has this option. French has this as a very prominent grammatical property.

English has both the possibilities: it can or it may not. So, in case of French bilingual French-English bilingual it has been seen that even in the English output, children tend to use the French construction, sometimes even leading to ungrammaticality. However English monolingual children never do that. So, this is an example of the CLI when the children have this kind of an option, right?

So, the interface is between syntax and pragmatics in this case where the syntactic function has a pragmatic syntactic structure sorry there is a typo here. Syntactic structure has a pragmatic function and between French and English there are overlap between the languages and hence we see the cross linguistic influence in this case.

So, these are certain conditions, grammatical conditions, that must hold in order for cross linguistic influence to be seen, as per this theory.

This is of course, theoretical of very important theoretical assumption that there are whether there are separate language development or there are unitary language development. And even if there are a separate language development theory is adopted,

how you can still understand the cross linguistic influence. What are the conditions within which cross linguistic influence will be visible.

Now, this is of course, one of the major aspects of simultaneous bilinguals. Some other important theoretical the theoretical points are the very problem of bilingual acquisition. How complex the bilingual acquisition is, and simultaneous bilingual acquisition in children is and how it can be studied.

So, that complexity that issue of complexity is of course, of great importance theoretically. Similarly, the balanced and unbalanced development and the idea of input, all of all these three are interconnected and we will see how.

First, the problem of bilingual acquisition and the main question that language acquisition studies typically ask, be it monolingual or bilingual is, how does the child develop his grammar? What goes on into the in the human mind when you are developing the idea? Now, this problem gets a little more complicated in bilingual children compared to monolingual children.

So, how does the child develop the grammar of two languages given this very less input? We all know about the poverty of stimulus theory put forward by Chomsky, that the children when they are growing up, they do not really listen to millions of sentences that they will eventually go on to create.

So, there is a clear mismatch between the input and the output. How is it possible that the child masters the language, his first language in spite of such less input. And now if we come to bilingualism, simultaneous bilingual children, the problem gets doubled, right? So, if in an monolingual scenario is whatever input is the child is getting it is 100 percent of the same language. In a bilingual scenario that gets divided into two.

So, the input in each language gets even less. So, that basically doubles our problem, that makes it a more complex problem. So, this problem has been talked about from generative and irrespective of the theoretical position. So, both generative linguists and emergentists and others have all talked about this and have tried to look at this question more thoroughly.

So, in BFLA for example, they say that facts are at least twice as complex as opposed to the monolingual scenario in terms of how the complexity is really tackled.

So, this can be understood in terms of both quantity and quality. So, in quantity, in an idealized case as I was mentioning a little while ago, that where we can assume that balanced input will be given. So, 50 percent from language 1, 50 percent from language 2; however, that does not always work that way. You know it can be from anywhere, depending on the kind of input one does not really think and give that sort of a balanced input.

So, in more realistic cases, basically the children will not get equal amount of input from both the languages. Now, this probably will give rise to a weaker language later. So, depending on which language gets higher amount of input, even within that bilingual setup, it will probably a deciding factor into creating his dominant and less dominant language, that is one. In terms of quality, even in case of monolingual child, a given sample input is compatible with a numerous underlying grammar.

So, one particular segment can be can take you to various possibilities in terms of grammar. Now, in terms of bilingual children the problem just gets doubled. So, in this case, poverty of stimulus as a result has been reframed as poverty of the dual stimulus. Not only there is a lack of adequate stimulus here, in terms of the input language, in case of bilinguals it becomes double the problem.

That is one important issue that is facing researchers today while studying simultaneous bilingual children. Now, a connected idea is that of balanced and unbalanced development. As we said that depending on the input imbalance, the output will also be either balanced or unbalanced.

So, depending on how much, what is the weightage given to each of the languages of the bilingual child, you will have a balanced bilingual or an unbalanced bilingual even when. So, in an entirely ideal situation, a simultaneous bilingual child will grow up into a balanced bilingual child, but that does not always happen.

So, why does not it happen is what we are trying to understand. So, balanced and unbalanced time development can be understood from this kind of a background. So, the

language faculty is often thought to be fully capable of handling the challenges of input. Going back to Chomsky.

Chomsky's idea was that even though there is a poverty of stimulus in a monolingual scenario, children actually grow up into perfectly good speakers of native language, they have good amount of, they have high competence in all the possible aspects of grammar of that language.

So, input probably does not really have a very strong impact in first language development. However, in bilingual case the question is however, it does it hold for bilingual case? Does it give rise to balanced versus unbalanced bilinguals or does it ignore does the system underlying system is the system capable of ignoring all of that and still create balanced bilinguals?

So, these are the nuances there are the; these are the two possibilities. On the one hand we agree that the human brain is capable enough to override that problem. However, in case of bilingualism that is not always the case. So, what is exactly happening is what is a matter of great interest among researchers today.

And then of course, we have the input effects. So, all of these are connected. It has been argued that in case of bilingual acquisition in input plays a larger role than that of monolingual children that you can already expect because of the discussion till now. Because in case of monolingual children, irrespective of the poverty of stimulus every child goes grows up to become a perfect speaker of his native language, that is not always the case with bilinguals.

So, hence input has a bigger role here as opposed to the monolingual children. Hence it is necessary to estimate. So, a lot of work is now going on in trying to understand the different types of stimulus that has been given as an input in the for the children. One interesting study, recent study looked at the Singapore English bilingual children.

So, where they find a lot of Chinese influence in the English that the children speak. Now, the question is: 'is it the nature of Singaporean English or is it the way the language was, the input was given to the child? So, input is the. So, what is it the result of? That is a very important question that they are trying to find out. So, input is not only in terms of quantity, but also in terms of quality.

So, those things are to be understood. So, what are the balanced, unbalanced and what was the way in which the input was given? These are some of the important notions within simultaneous bilingualism of children that has been probed. So, this is where we stop with simultaneous bilingualism of children.

In the next part we will look at successive bilingualism and we will see there are some similarities across these categories and there are some interesting differences as well. So, part 2 will deal with successive bilingualism among children as well as adult second language acquisition.

Thank you.