

Bilingualism: A Cognitive and Psycholinguistic Perspective
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Module - 02
Part - 02
Lecture - 05
Successive Bilingualism

Hello and welcome back. We are in module 2, part 2. In part 1 of this module, we have say we have talked about, we have discussed, about simultaneous bilingualism, as to how children who learn both languages simultaneously in the environment, what are the nuances within that, what are the different parts and what are the different theories and so on. So, now we move on to the second part of which is Successive Bilingualism.

So, successive bilingualism, as the name suggests, is when one learns two languages in succession, as in one language is learned first and then there is another language which is learned. So, in essence, this is the opposite of simultaneous bilingualism. So, the first most important thing is it is the opposite of simultaneous bilingualism. Similarly, there is, if you remember, if you recall that in case of simultaneous bilingualism, there is no first language and second language so to say, both are first languages because both are simultaneously learned. But in this case, there will be a first language and there is a second language. As a result of which successive bilingualism is also called sometimes, second language acquisition. So, successive bilingualism and second language acquisition are more or less the same thing, which is when one learns a language after another.

So, the first language is already in place and then there is a second language that one learns. In which case, the first language will typically be the native language or the language of home, the dominant language and also the one which is most frequently used and it is the stronger language.

By virtue of being the native language, by virtue of being the language, first language or the one that you use at home and for the better part of the day and so on, naturally it is also the stronger language. In contrast, the second language will be less dominant, less frequently used and it is typically, though not always, it is also the weaker language.

So, in the let us set the baseline first, second language acquisition or successive bilingualism refers to a scenario where there is a first language already established, which is the language of home, which is the language of major activities, frequently used and so on, it is already stronger and then a new language comes in, which is called the second language in this case.

Now technically speaking, say successive bilingualism will include every kind of bilingualism where one language follows another. So, it includes both children and adult learners, because you see when already one language is in place and you are learning another language, there can be you know any age bracket.

First language is always learned in childhood in the in early part of your life, but second language can in one can learn the second language at any time, any point in time. So, there are child children who learn a second language in childhood, there are adults who learn and all the other age groups in between. So, there are these two primary types of bilingualism with respect to second language acquisition.

Now, when we talk about children as second language learners or adults as second language learners though they are part of one broader category however, there are some important differences between these two groups. Now, where are those differences? Typically, the difference will be in terms of the speed and accuracy of income sorry accuracy of outcome.

So, what does it mean? In terms of speed, it means to, it refers to, how fast the acquisition of the second language happens. How quickly you learn, how quickly a child learns versus how quickly the adult learns. So, there are significant differences in terms of these two parameters in terms of successive bilinguals.

So, child children second language learners and adult second language learners are different on these two important factors. Because of this primary factor, age has become a very important variable to study. So, no matter whether one is studying children as second language learners or adults as second language learner, age, because of the constant inflow of data that show the differences between these two groups, age has become a very important issue to investigate and that is what we will see.

Now, when we talk about age in terms of language learning, there are certain very important issues to be resolved. First and foremost, let us talk about slightly about the nature of language. How do we learn language? What is language? Right? So many of you might be familiar with the nature-nurture, debate and also Chomsky's contribution in this regard.

Chomsky was the first linguist to claim that language is an innate faculty among in humans. This is something unique and innate. So, the humans are different from all other languages because all other animal species in terms of their linguistic capacity and he claimed that humans are born with the innate capacity to learn language.

Now, if you compare humans with other animals or every animal has their own innate capacities. For example, the various predators like lions and tigers and others, they need to learn their the hunting techniques within a certain period of time within their life. Similarly, birds need to learn how to fly, right? Similarly, many other factors in all animals.

So, whatever whichever capacity is innate, that needs a very short time window after birth, post-natal life, in order for them to survive. So, if the bird does not learn to fly quickly, they will probably perish, similarly for all other animals. So, taking this as a standpoint, the theories within the in the innatist hypothesis groups. They said that because language is also an innate faculty, this also needs to have a certain specific time window for to master their skill. So, this is where it all starts from.

And the most well-known name in this regard is that of Eric Lenneberg, who proposed, in 1967, that automatic acquisition of language in natural settings can take place only within a particular time window, just like any other animal has. Other animals have with respect to other innate faculties. In case of humans, there is this language faculty and this is the time window that he proposed.

So, from age 2 years to puberty within this time frame so, primarily roughly given and take a little bit, 10 years. So, 10 years is the time within which humans need to pick up language, if they do not pick up language with during that time, they will probably never master language. This is a very significant claim put forward by Lenneberg.

Now, this was initially used for first language acquisition. Later on, it was also used for second language acquisition. So, initially this application was in first language, later on SLA also. In fact, around the time this theory was put forward, there were also some significant discoveries.

For example, the discovery of feral children, some feral children, for example, the most famous case is that of Genie, who was discovered at the age around 13 of years of age, and she had not learnt any language and she never probably mastered the language. Similarly, there was another case of Isabelle, who was discovered at a much earlier age and she even though she also had no language till that point of time, she will went on to learn language pretty well.

So, these were certain instances which seemed to prove the critical period hypothesis. So, this is what it is. So, this particular time window that Lenneberg talks about, later on, who was called, this is called 'critical period hypothesis'. The period is called critical period and then the hypothesis is called critical period hypothesis.

There is a bit of disagreement among scholars. Some scholars prefer to call it a 'sensitive period' rather than a 'critical' period, but nonetheless, the claim remains the same that there is a time window for humans to master language, beyond which it becomes very difficult. Now, the reasons that were put forward were like this. Most importantly, the theory was based upon neural development.

So, the brain development of humans and in terms of brain development, primarily they talked about brain maturation and brain lateralization. Now, maturation is the human brain develops even after birth. Unlike many other animals, human brain they keeps developing for quite some time after birth. So, that is what is about brain maturation in terms of physical development and maturation.

At the same time, lateralization also takes place. Lateralization is in terms of specific localization of functions in the brain. So, which part of the brain takes care of which kind of functions and what are the connections that are to be made and how are those the various kinds of activities and schemas are imprinted on the human brain and so on. All of these are part of what is called lateralization.

So, the claim was, by the time children attend puberty, this is also the time when brain maturation and lateralization also completes. So, once the brain lateralization and maturation has taken place, once it is already in a rigid form, then a new any kind of new knowledge will be difficult to acquire.

So, keeping that in mind, they had proposed the idea of critical period hypothesis. So, basically this goes, this takes us back to the debate of how rigid or flexible the human brain is. So, as far as critical period hypothesis goes, it is this points to a largely to a large amount of rigidity in terms of brain structure. However, recent research findings from neuroscience points to something entirely different, that brain is remarkably plastic. In any case, that is different topic.

So, initially CPH or Critical Period Hypothesis gained quite a bit of popularity and it seemed quite tenable. A lot of research findings also supported, I just talked about Gennie and Isabelle. There are many other researcher work as well. So, more or less this seemed to be the case there was a clear difference in terms of age.

So, children who started learning language much later in life were found to be lacking in certain skills, whereas, children who learned it pretty early, before the critical period, they were doing pretty well. However, by 1980s, questions started to emerge because new research, new data started to emerge that question this.

So, many studies at during this time which compared children and adult second language learners on learning speed and ultimate attainment. Now, learning speed we have already talked about, ultimate attainment is something that is basically the approximation of the native speakers' language proficiency. Earlier, the word used for this was native-like proficiency, native-like competence.

So, a bilingual is was considered high-proficient bilingual or you know a perfect bilingual when he or she attains native-like competence in the second language. Later on, over a period of time, it was realized that this will, this not only does not happen and hence, a new word was used. So, this is what it is. So, the ultimate attainment is what is now used for the highest amount of competence that the L2 learner can achieve.

So, studies, various studies involving children and adult learners. So, children and adult, obviously, the primary difference here is in terms of age and they check them on speed as

well as how far they have learned the language, how well they have learned the language. So, many studies were carried out, but one of the most well-known and among the earliest is this, by Snow and Hoefnagel Hohle.

So, the subjects were the native speakers of English who went to Netherland to learn Dutch language. Now, there were 4 groups of children, children ranging between 3 to 5, 6 to 7, 8 to 10 and of and, then slightly older children who were 12 to 15 years. So, these older children were beyond the critical age and the other 3 groups were before the critical age. So, these are the 4 groups of English-speaking children, who went to Netherlands stayed there for a year to learn Dutch language.

Now, this was the results were the first ones to counter the claim that older learners do not learn as well as the younger ones because the findings of the studies showed that the older children were the older children were found to do better than the younger children. There were many reasons that were put forward. The one of them is that the older children engage with the outside world more readily as opposed to the younger children and so on.

So, there are various reasons put forward, but the primary result remain that the older children were found to do better which is which was one of the first counter counters to Lenneberg's theory of critical period. And similarly, there were also new findings in neuroscience and that also questioned Lenneberg's most important claim on brain lateralization.

So, this critical period was the hypothesis was largely hinged upon brain lateralization, but later studies found that lateralization actually completes much before puberty. It does not take that much of time. So, that timeline cannot be is not tenable even in terms of lateralization.

So, both these initial findings were the first that questioned the critical period hypothesis. Similarly, yet another very influential study by Johnson and Newport 1989, this study was carried out on Chinese and Korean immigrants in US. Now, what they did was in this study very importantly, the there were many variables that they used, not only age, but also one critical variable was the age of arrival in US.

So, basically exposure to English language, the number of years that these immigrants had spent in the US, so which was basically a calculated upon the age of arrival. So, this was

one critical variable. However, this study was very important also in terms of the fact that they not only took in the variable of exposure of language, but also duration of stay, motivation, cultural identification and others.

So, these are basically social variables. And combining these various variables and with the results, what they found was that the critical period hypothesis probably needs a relook. Now, before we go there, let us see what the task was. The task was a grammaticality judgment.

The subjects looked at, read various sentences and they had to judge whether the sentence is grammatical or ungrammatical, right? So, this is a very simple task of language competence and these are some examples. So, 'the farmer bought two pig at the market', 'the bat flew into our attic last night', so on. So, these are the errors in the sentences and then also they had grammatical sentences. So, they had to do a grammaticality judgment.

Now, they found a very clear distinction in terms of age and performance. Most interestingly, there seemed to be a cut-off at age 16. So, this study found that the children who had arrived before age 16, the participants who arrived before age 16, their performance was correlated with the number of years spent in US.

So, all those participants, Chinese and Korean, who came to the US before age 16, theirs their performance on the task was correlated with the number of years spent. That was almost, there was a generalized performance, generalized data. But those people who arrived after age 16, there was a number of confounding variables. There were number of variables that seemed to predict the answer. There was not one variable unlike the first group.

So, the result here was quite varied and they were correlated with factors like motivation and many others, how outgoing they were, what kind of groups they were, and then the friend groups, the peer group and so on. So, basically, the seen there seems to be a difference at the at an age, at 16. So, till an age, certain variables work, after an age certain other variables work, which has been explained by many other researchers as well.

Because the after 16, children are more outgoing and they have more larger friend-circle, they have more social activities and so on. So, chances are very high that they will learn language better. But at the same time, it is that is also the time when the agency of the

individual has developed. So, individual tendencies of aptitude, attitude, motivation and various other such factors will play a strong role.

So, these findings brought new questions to the theory of critical period hypothesis. First and foremost, the cut off age may not be fixed. In fact, it could probably be a continuum. It may not be a fixed cut off, after which it is not possible, it is possible provided the right kind of motivation and aptitude etcetera are in place.

So, basically, the major finding is there are other factors, other than age. So, age is not the only prime motivator, as opposed to critical period hypothesis. Critical period hypothesis does not say anything about other factors. It talks about only age, but now we see that age probably is a one factor, but alongside, there are many others contributing agents as well.

So, another idea that was put forward by the researchers from this study is what is called 'less is more' hypothesis. Now, 'less is more' hypothesis has to do with the cognitive capacity of children versus older people so, children versus adults or younger children versus older children and so on.

What does this basically mean? It means that in among small children, children are they have less of many things, they have less cognitive capacity, they have less attention span, they have less interest in sustaining focus on one particular thing and so on. As a result, what probably happens is and the researchers call it the children are not 'overwhelmed' by a new language, as they do not over analyze.

So, when after an age, when you are slightly older and the language 1 structures are already in place, you have already some understanding and generalization about how languages work, then when a new language comes in, when a new structure comes in, we tend to generalize and that we try to see if our already established generalizations work or not.

So, lot of over-analysing the data so, to say, takes place in older people, older children and older adults and so on. However, for small children, this does not happen, because they the authors say that they children learn by in a piece-meal way. So, whatever comes in, they will they keep to the surface, look at the input and learn it in a simplistic way because they do not over-analyse. So, they perform only simple computations to the incoming stimuli and learn it.

Hence, learning becomes much easier for children than for younger children, than for older people. Older learners may suffer from negative transfer, we have already talked about negative transfer before, negative transfer is when your knowledge of first language affects your learning of second language.

So, these are the reasons that were put forward by this study, that why children are learning better and which are not in that which do not have to do with the age as a in terms of brain lateralization, but age in terms of the cognitive strategies that children put in place, which are different from the older, either older children or adults.

Another idea that also came out from these studies is what is called entrenchment. Entrenchment is this put forward by Hernandez and MacWhinney. This hypothesis says that the more the L1 gets established in the brain, the more 'entrenched' it becomes in the system. Let us take a simple example, how easy is it to teach an old person any new trick.

Many of us have tried and failed to teach you know how newer gadgets work to our grandparents, sometimes even to our parents. They often they are not able to learn. The reason why they are not able to learn is not that they are idiots, they are not stupid. The reason why they do not learn is because there is a an internalized system, an entrenched system in place which refuses to budge.

That is what is entrenchment. Same thing happens with language. So, when L1 structure has been entrenched in the brain, when the structure has already created a strong system, in strong system not only in terms of the language structure, but also in terms of the patterns, learned patterns.

Many often many researchers have pointed out that language learning is, to some extent, in certain domains, actually a pattern recognition system. So, those patterns, that learned patterns have already been entrenched in the human brain. So, as a result, a new system gets resisted.

So, generalizations have been formed and there is a stable neural system in terms of entrenchment, in terms of the learned patterns and so on. And that is why it is difficult, not because of age as a factor. So here, even though they talk about neural systems becoming getting entrenched with one system, it is not in terms of lateralization, but in terms of pattern learning.

So, the brain has learned one pattern and that you expect that same pattern to repeat every time and when it does not, then there is a resistance. That is what it means. So, before entrenchment, children can easily give up generalization, because for small children, the entrenchment is not strong. It is going through a process of entrenchment, but it is not yet strengthened.

So, they can easily give up, ok fine, this is how it was for this, but this is something new, so they do not really care, but this does not happen after you get older. That is a very important point that has been put forward in the CPH literature.

A very very important theory again is MacWhinney's unified competition model, which also tries to take into account for CPH. However, they also take various different kinds of variables, whether neural, cognitive and social variables, because language does not function in a vacuum. Language is simultaneously a cognitive mechanism, a social mechanism and a neural mechanism.

So, taking all these things into account and this is pretty recent 2012, when we have already understood a lot about language and its internal architecture, hence this model takes into account all of these. Now, taking into account all of these factors, they propose some 'risk factors' of language learning. These risk factors affect older learners more compared to the younger learners.

So, this is the idea of negative transfer. Negative transfer will be discussed in detail in another module. So, when we talk about conceptual transfer, entrenchment, we have already talked about entrenchment and then there is a similar idea, which is called the parasitism on L1.

Parasitism on L1 is nothing but trying to learn L2 through L1. So, once you have your L1 is established, strongly established, we try to learn L2 through L1 and that leads to negative transfer. So this, as a result, negative transfers are called negative because this kind of a connection, this kind of a transfer of knowledge from L1 to L2 hinders the learning process.

That is why and then mismatched connectivity, incorrect connections between processing areas in the brain because processing areas have already been entrenched, hence new connections do not match. And another important point that they have mentioned is that

of social isolation. Social isolation is a very important factor because language is ultimately a social activity.

So, if you do not have somebody with you know introvert, somebody who does not have a social circle, chances are very high that one will not learn language. So, this model says that it is not that you know learning strategies are different between L1 and L2. Learning strategies are primarily similar.

However, the differences arise because of these factors. They are not because languages are different, not because the strategies are different, but because of these factors which affect older people more compared to the younger people. So, in effect, basically it is a dynamic interplay between competing languages and their connections to other factors. So, basically there are lots of factors responsible, not just age.

So, in terms of critical period hypothesis, we have seen there are different types of findings and some of them corroborate, some of them do not agree with this, some of them say that ok, fine, the theory seems to have some merit. However, it needs to be tweaked, it needs to have a revisit in some domains. So, this is where we are as of today.

Another factor in terms of second language acquisition, along with age, is that of interaction. Interaction is interaction and interactionist hypothesis. The interactionist hypothesis was proposed a little later, but the genesis of this is from Stephen Krashen's theory which is much much earlier in 1977. So, what does Krashen say? Krashen's contribution in second language acquisition is enormous and this is one such domain where his ideas have been used.

So, the primary points that Stephen Krashen made was a subconscious process of acquisition occurs when learner is focused more on meaning than on structure, so to say. So, acquisition is referred acquisition is used for first language acquisition, when learning happens more automatically as opposed to in a formal setup. In a formal setup, learning is more conscious, it is more tutored and hence it is called learning, but in the in case of first language it is learned in the social setting, it is more naturalistic.

So, that is what he said, that even if it is a second language learning, if second language learning happens in a more naturalistic setting and there is a subconscious process focused on meaning, then there is better outcome is expected. Similarly, there has to be adequate,

comprehensible input. This is a very important point that has been taken up by later researchers as well.

So, the input is very significant and has to be adequately comprehensible for the learners. And of course, there should be enough 'simple codes', whether it is the second language learning or foreign language learning, in both cases simple codes help learning better. So, basically starting with simple structures, simple vocabulary and gradually moving towards more complex structures.

He does not give any role to production and says that production plays no direct role in acquisition and interactions involving naturalistic child and adult learners are also important. So basically, he talks about input and interaction. So, this is where the motivation for interactionist hypothesis comes from. Two very important things the input which needs to be simple and it needs to be comprehensible and secondly, there should be adequate amount of naturalistic interaction between among the learners and between the learner and the others, that is what Krashen says.

So, taking from there interactionist hypothesis is however, largely associated with Michael Long's report. There was a study on native speaker and non-native speaker interview, non-native speakers were all Japanese learners. So, there was the English speakers and non-native speakers of English, which were Japanese people and there was an interview scenario.

So, studying that scenario, the report came out by Michael Long and again he also stresses that which for the point that we already know that we have already seen in Krashen, that comprehensible input is necessary for L2 acquisition. What does it mean? This almost sounds like redundancy, because when you are learning something new the input should be comprehensible.

However, sometimes we do not really realize what is comprehensible from the non-native perspective. So, hence this focus is on this. Similarly, modifications to the interactional structure of conversation. So, this is where the interactionist hypothesis is based on. So, process of negotiating a communication. In a communication there can be multiple problems, problems as in the conversation does not move forward because a non-native speaker has an trouble understanding various things.

So, there will be a negotiation process going on, through the conversation and the way those interactional structures are used, will decide the outcome of the language learning process, that is what the interactionist hypothesis primarily says.

So, the interaction between the learner and the instructor or the native speakers or various kinds of dyads have been used two native speakers, two non-native speakers, one native speaker, one non-native speaker, various dyads have been used in this kind of studies by different researchers. In all cases, the focus has always been on the input, quality of input, comprehensible input and the kind of interactional strategies that the conversation participants use and based on that the outcomes are different.

So, taking this conversation as a baseline data there he finally puts forward some important points as in what decides the ultimate outcome. So, one is the input feature. Input features are of course, purely linguistic features like vocabulary and sentence complexity and so on. And interactional features are clarification-request, confirmation check, self-repetition, what happens I mean in this does not have to be only in terms of second language acquisition, even in a normal conversation there are many false starts.

So, we realize because it is an auditory vocal loop of language use. So, we hear ourselves speaking, we realize we have said something wrong. So, we repeat ourselves or correct ourselves and so on, that is with yourself. But with the in terms of a conversation, there are often clarification requests. So, is it this way, should I say it like this, or should I say it like that, so on. Confirmation check, was it correct and this kind of things.

So, modifications to the interactional structure can prove to be critical. So, if the interactional structures are not helping the learner to learn language, learn properly, then there has to be a change in the interactional structure. This is where the theory underlines that input is important, but also important is the interactional strategy.

Later on, Teri Pica contributes significantly carrying this idea forward. Her contribution has been in designing experimental studies to verify. By the way, even Long himself has said that not much empirical data exists to support the interactional hypothesis. All the evidence that we have by this kind of interview examples are basically second you know secondary way of confirming, there are they are not direct, they are indirect evidence.

So, Teri Pica start try to create some experimental designs to test the claims of this hypothesis. By and large, she finds proof of the interactional hypothesis and broadly there is an agreement.

However, more important contribution of Pica lies in extending the hypothesis, extending in a in the social domain. So, her studies in underline the importance of social relationship between participants as determinants in the interactions. So, learners and interlocutors, because in a conversation where you have a native speaker teaching a non-native speaker their second language, there is already a hierarchical structure, the native speaker already, obviously, knows better than a non-native speaker.

So, this is an unequal situation, the they are not equivalent. However, Pica says that even though that inequality is a given, in that conversation scenario, in the interaction scenario, in that kind of you know negotiation in the communication process, they should assume equivalent status. Only and that is that will go a long way in ensuring success of the teaching program in learning teaching learning program.

So, this they should, interlocutors should behave like equivalents with the learners. So, if I am teaching my for my native language to somebody for whom it is a non-native language, both of us I should behave like an equivalent to him or her in order to, in order for the conversation to have better results. This is what she says.

In more recent times, Oliver also has worked on in this area and tried to see if children and adults have different interaction strategies in various scenarios. So, they check checked how if and how children negotiated for meaning, the strategies they used for getting clarifications on meaning and then if these interactions are different for children and adults. So, if there is a difference between adults and children.

So, they found that these are the strategies that typically children use for getting negative for negotiating meaning in a conversation set up, in an interaction set up. So, clarification request, confirmation checks, comprehension checks and repetitions like we have seen in the earlier studies also. So, this has been confirmed.

However, they another interesting aspect of the finding was that children use fewer comprehension checks compared to adults.

Based on various findings, Long updated the interaction hypothesis and they he included that the he included the role of negative feedback, negative evidence. So, we only we already know that positive evidence has a positive impact, but it is also important to include the negative evidence - what is not possible in L2. Very often, L1 structure is carried over to L2 and, but we need to be told that this particular structure is not possible.

So, that is something that he has updated and in included in the hypothesis. Now, all these findings with respect to age and interaction hypothesis have now been combined to study language acquisition and also in turn, it has been utilized in pedagogical practices and strategies all over the world.

So, because any one feature is not useful, both of these features have turned out to be very significant and hence they have been a utilized.

So, many differences have been found in L2 ultimate attainment of older children based on longitudinal studies. So, this is one domain of study that have typically taken into account both of these variables, as we just mentioned longitudinal studies are studying children over a period of time.

So, often another parameter has been pointed out in these kind of studies, is that the language preferences. So, here we bring in the individual parameters, age is an is one objective factor, interactional strategies is another factor. However, language preference also emerges as another indicator of differences in attainment.

So, one quite an influential study by Jia and Aaronson 2003, they studied study over three years in an English as second language setting and the subjects were Chinese children, there were 6 young kids and there were 4 adolescents, ok? There were two age groups of Chinese students learning English in the second language setting and they found out that this the differences in the ultimate attainment between these two groups could be understood in terms of language preference.

So, not all children, not all groups of children prefer to learn the second language or you know there is a preferential treatment given to L1 versus L2 and so on. So, while the younger children switch their preference to English in the first year, the older children maintained a preference for Chinese even after 3 years.

So, this I think takes us back to the study that found out that talks about the entrenchment factor because smaller children had the Chinese was not yet entrenched so strongly and hence their preference for English shifted very quickly but for older children, the preference for English did not really take place in tune with the younger kids.

For them Chinese remained the preferred language and that. So, if you have you know if you do not prefer to learn, it will be very difficult to learn. So, that is why language preference has been found to be an interesting predictor. Another is the foreign language setting. So, a lot of studies have looked at foreign language setting versus second language setting because the teaching strategies are different.

So, they have another study looked at foreign language setting for children who began learning L2 at different ages. Now, they show that even after same hours of instruction. So, foreign language versus second language is even if they had same number of hours for instruction, late beginners show advantages over those who started earlier, right? So, here we have yet another parameter that muddies the water further.

The amount of input and practice the children were exposed to in the foreign language setting, were were predicted to be the reason. So you see, we are gradually moving towards yet another predictor which is the stress setting; whether English is taught as a second language versus whether English is taught as a foreign language.

The moment we change from say second language setting to foreign language setting, teaching strategies change, which basically means differences in terms of input and practice and as a result of which, there were significant amount of differences. So, quality of input, and not age, seems to be a factor that came out of studies, a large number of studies as you can see here, I have mentioned a few of them here. So, quite a few studies have found out this kind of a pattern.

So, this brings us to the differential instructional settings and the type of learners. So, we have already seen that foreign language versus second language setting could be a strong predictor of the outcome. Then the reason, one is of course, the input, practice session and so on. Another important difference between foreign language versus second language setting is the exposure to the language that is being learned.

So, what happens in a foreign language setting it is typically taught in a classroom and there is no access to the language outside the classroom, which may not always be the case for the second language. Second language, even if it is being taught in a classroom scenario, chances are there that you probably will be able to learn the language outside the class as well, in the in peer group and school, in colleges, in various other settings and so on so that means, that exposure, differential exposure to the language, right?

So, this is one among the other variables that are different between foreign language setting and second language setting. And of course, differential strategies that are there depend depending on these two. So, programs like content based education, theme based language teaching and CLIL.

These are some of the new ways of teaching language that have come out, come up with all these keeping the foreign language condition foreign language setting in mind. So, foreign language setting uses difference different types of teaching programs, some of them are these. So, initially content based teaching mainly involve teaching grammar.

However, over time it has now started to use context also, because teaching a language through grammar is, well grammar is important, but teaching a language through only grammar cannot really prepare somebody for using it in the real life context and hence over a period of time, content based education instruction has undergone a lot of change and they have moved from only grammatical to grammatical plus context based.

So, there are various types of these methods, but typically the focus is to immerse the learner in that language context, context of use.

This is one of the CLIL is among the most recent and quite popular way of using this kind of method, of a immersing the learners in an environment. It is used in across various European countries now. So, what is CLIL? CLIL basically is an educational approach where curricular content is taught through the medium of a foreign language. So, imagine me going to Japan and studying masters there and let us say I am doing masters there.

So, master subjects will be taught to me in Japanese. So, I am learning the content as well as the language at the same time. This is what CLIL primarily does. So, typically students

will perform participate in some form of mainstream education at the primary, secondary or tertiary level. There are different levels and different curricula for that, but the idea is that subjects will be taught in that target language.

Now, because the lots of schools, lots of educational institutes have adopted CLIL methods so, we have now quite a bit of data to go by, as to what has happened, what happens and what are the results of these processes. So, type of interaction the learners engaged is different in CLIL as opposed to mainstream teaching.

And then there are CLIL learners produced fewer negotiating strategies compared to mainstream learners. Learners also used L1 to a lesser extent and the many other findings have been put forward. So, CLIL learners also receive more hours of instruction because they are not only teaching the language, but they are teaching subjects, other subjects through that language.

So, naturally the number of instruction, number of hours for instruction is also pretty higher. And they also have they receive more meaningful input. So, these are some of the findings with respect to these research researchers that have pointed out the differences.

Immersion programs are also similar programs, but there are slight differences between immersion and CLIL and in this also is pretty much older than CLIL. CLIL is was is used primarily for foreign language teaching, but immersion programs have existed for different kinds of purposes, sometimes to teach also local languages. So, it is not only a foreign language teaching mechanism.

And one significant in difference between CLIL and immersion is that in immersion, the teachers are also bilingual, which is not the case in CLIL. So, I will be I will be taught by a Japanese monolingual person, let us say. So, teachers are bilingual and the starting age for immersion also is typically earlier than CLIL. So, the concern in the types of input and feedback they maximized opportunities for L2 development.

So, it was also found that learners develop better metalinguistic awareness and they did much better in terms of target language acquisition.

However, there are differences even within the immersion programs. So, nothing is monolithic. Even CLIL has their own differences, which we did not get into here.

Immersion program also has various layers. So, patterns of feedback, interactional feedback, uptake and repairs, they all might differ depending on the participants.

So, there were studies comparing French and Japanese learners in an immersion process in the fourth and fifth grades and they found that the two communities, children coming from French and Japanese backgrounds, they differ. So, now we have yet another variable to predict the outcome of learning process. That is the characteristics of the learners. Instructional context we have already seen. Now, we have the learner's characteristics.

Yet another approach was taken up. This is largely attributed to Swain, his work explored the patterns of interaction and interactional characteristics, various kinds of socio-pragmatic indicators like turn taking, topic development, self-evaluation and so on. So, these are all socio-cultural perspectives and they have utilized it in looking at childhood SLA.

So, for example, they this one particular study looked at Chinese EFL learners. This is EFL English as foreign language learners in the 4th and 6th grades. And the results showed that 4th graders showed less degree of engagement and their patterns of interaction were also not stable across tasks.

So, there are various kinds of possibility, there are very as you have already noticed now: age, interaction, interactional strategy, strategies based on whether the language being taught is taught as a second language or as a foreign language. Even within foreign language are you looking at CLIL type of teaching method versus you are using immersion method.

In all of these cases, the various socio-pragmatic factors, various individual factors like the characteristics of the learners, so on and so forth, there are so many variables that could predict the outcome of a language learning scenario in children. And last, but not the least, there has been another approach to the problem, to understand the problem of understanding the various nuances of child language second language acquisition among children is that of using children themselves as researchers.

So, this was put forward by Pinter in 2014, because until and unless you have somebody from within the group, it is probably slightly more difficult to understand what is happening. So, including children in this group could be useful. So, they use questionnaires

to assess children's own viewpoint and turns out that often the results have been quite positive that children do, they are capable of understanding, they do understand their own development.

So, they have been asked to assess themselves and it seems that they are aware, children are aware and hence they can be part of the research understanding, their research programs.

Now, we will move on to second language acquisition among adults. So, this second language acquisition from on in adults have been rather common topic for a very long time. It has gone through its own trajectory of changes across time, there were socio linguistic approaches, there are applied linguistic approaches and also there are cognitive and psychological approaches to this problem, to this to understanding what happens. So, various domains, they use various predictors like aptitude, individual differences like motivation and so on.

But in terms of psychological and cognitive perspective, again the main pointers, main variables in this domain also is age and input. Age we have already talked about adequately, we have already seen the various theories and the counters to those theories. So, we will not go there again, we will just add on slightly there.

In terms of there are few arguments that have been put forward, in terms of adult second language acquisition, one is that comparison between children and adult does not make any sense, because the amount of input are not same, because a child, this is irrespective of the age factor.

So, a child by virtue of becoming, by virtue of being a child learner has automatically a larger amount of time to him or her to get input. The adults have much lesser, in terms of decades probably. So, an adult learner already misses out and hence there cannot be any comparison. That is one very strong argument given in terms of why adult learners and children learners should not even be compared.

Secondly, on theoretical ground it has been already been seen that it is not the case that adult learners will not master the grammar. In fact, now the now we know that grammar is also not a monolith. The language structure, language representation and language and

the grammar of it, the structure of it also have subsystems. So, whereas, some aspects of grammar may not be possible to master at a later age, but certain other domains can be.

So, now we have a better understanding in terms of this, so which aspect of grammar are more resistant and which are not. So, there is the research findings say that no critical period exists for learning phrasal semantics, for example. So, this is one domain of grammar that does not depend on the age.

However, certain other areas like functional morphology or syntax-discourse interface, these are some domains which seem to have an age correlation, meaning that there is a bottleneck expected in these kind of domains. However, many other domains do not. So, it is not that an adult learner will never learn language like a child learner. The adult learner might master the language, except in certain grammatical conditions. So, this is the logic.

Another in a serious counter to this to the CPH in terms of adult SLA is 'the Bilingual Turn'. Bilingual turn primarily refers to the theoretical change of standpoint in bilingualism research, where the now it is an established truth that the bilingual should not be and cannot be taken as two monolinguals.

So, a bilingual is an differently entirely different creature and it is not a coming together of two monolinguals, that is not how it works. So, the bilingual's second language should not be like another monolingual. So, monolingual speaking the L2, it is not like that. So, a bilingual is a completely different kind of person and there should be no comparison with monolingual controls.

And the they say that in the whole of second language acquisition, it should not be this is SLA second language acquisition, but particularly, in terms of critical period hypothesis related research, because they the underlying structures are different. And also, neuroscience data shows that bilingual experience has a strong impact on the neural pathways which are different in case of monolinguals. So, it is not only the language learning strategies or practices, but also at the neuronal level there are differences, significant differences between monolingual and bilingual and hence comparing them is not tenable.

Input also, there are all the findings with respect to children also hold for adults. However, there is another interesting take on this that has been found out, that if the input has

variability, then this also creates a problem, variability as in let us say certain grammatical structures could be variably used in the society.

For example, there is a lot of ambiguity or variability. For example, a particular study on Spanish. So, Chilean Spanish versus Mexican Spanish, this study was carried out on this. Both the languages are Spanish. Now, in case of Mexican Spanish, the plural is overtly realized, like in English with an /s/.

So, when with the plural noun, the /s/ comes in as a suffix and so plural is overtly realized in all conditions. Nouns, adjectives and determiners. So, plural marker comes on all of these. In Chilean Spanish, there are of course, sociolinguistic variations. This piece of inflectional morphology undergoes a regular process of lineation to aspiration to nothing.

What basically this means is that, this realization of the overt realization of the plural marker is subject to variation, in terms of socio social variation versus various kinds of other factors. So, the this realization can happen in different ways. So, plural morphology is not completely absent, but it is rendered unreliable because, it is subject to variability, subject to variation depending on various factors.

So, the same language, the Spanish when it is spoken in Mexican so, the Mexican Spanish has one way of looking at it. Chilean Spanish takes it a little more lightly, let us say and they have variations of that same grammatical particular property. And as a result of which Chilean Spanish is more less reliable as an input, as opposed to Mexican Spanish.

And the results also support that. Both younger and older Mexican children were significantly more accurate because in case of Mexican Spanish, the variability does not exist.

So, input, if there are variations in the input and if and thereby the input becomes unreliable, that also will affect the outcome. Another quite recent theoretical position in language learning is that of complex adaptive system. Now, in this approach, language is regarded not as one single thing, but it is all treated as a complex system, which is dependent on or involving various multiple agents.

Language is not insulated from other practices and that is why it is called complex adaptive system. So, this system is adaptive because the speaker's behavior is based on their past

experiences, experiences not in terms of experiences in terms of creating the mental representations of all those experiences and their neural representations and so on.

So, the structure of the language emerge from interacting patterns of these experiences, social interaction, general cognitive processes and so on. This is a very quite an important theoretical position and we will come back to it later when we discuss language processing in bilinguals. However, this also remains an important standpoint in terms of language acquisition as well. So, we will discuss more on this. The theory goes to, the theory is was proposed by Filipovich, and Hawkins.

And then of course, that is the processing based studies, the data that we have from processing based studies that look at the native speakers' competence versus the bilinguals' competence, in terms of processing language. So, processing language basically is hinged on two points, two primary claims that second language is processed the same way as first language. The opposite claim is that second language is processed differently compared to first language.

So, the difference basically is in the claim that says first and second language are processed similarly, which also means it is learned similarly. The claims that the difference that we see is basically quantitative and not qualitative, qualitatively they are similar.

And the opposite hypothesis say that there is a qualitative difference and this hypothesis is called shallow structure hypothesis. And they claim that there are qualitative differences in between L1 and L2 users. Now, shallow processing says that shallow processing, as the name suggests, is the processing strategy that is used by bilinguals is based on based more on lexical knowledge, pragmatic routine and basic argument structure.

But the deeper understanding of the language and deeper understanding of the structural properties are missing. Right? And in the semantic processing is favoured rather than deep knowledge of syntactic rules that is the claim. So, there are two claims one is that the processing based understanding has two ways of looking at it. One group says that there are no differences in processing strategy, other says there is a difference.

What is the difference? That bilinguals use a shallow processing strategy as opposed to monolinguals. Monolinguals use a deep processing strategy where they exhibit their understanding of that deeper syntactic rules.

Now, this theory has also faced some criticism, most importantly from studies that looked at low educated, low reading span and non-proficient native speakers. What they found was that even if you were native speaker, you can still use an approach that is typical of second language learners, which is the shallow processing hypothesis. So, shallow processing can be utilized even by native speakers if they are low educated, they have low reading and they have less proficient.

So, this is, but basically ultimately a matter of exposure than to whether it is first language or second language. So, an illiterate first language speaker, even though the spoken variety should could be quite adequate, however, because the that person has not been exposed to larger usages of the language or more complex structures of the language, they will not be able to process.

So, ultimately it comes down to exposure and not whether it is L1 or L2. So, basically second language acquisition strategies or second language processing strategies are not anything significantly different. So, one particular study involving Greek-English bilinguals, they used either naturalistic or classroom exposure to English and found that naturalistic learners were indeed processing the intermediate level, intermediate traces which are complex grammatical structures, like native speakers.

So, what this is another angle to the same story that the kind of scenario, kind of setting in which the language is learned, the kind of exposure the learners have had, whether it is a natural setting versus it is a classroom setting, that could also be an important pointer in this regard.

So, these are some of the nuances that exist with within the second language acquisition research. This is a quite a large area of research, very difficult to, you know, include everything in this, but these are the main factors that have been looked at in this domain.

And so, in conclusion, we can say that factors like type of exposure naturalistic versus classroom and along with all the other factors of age, input, interaction strategies and so on, experience with complex language constructions etcetera can be a good predictor for a the variation between L1 and L2 processing and thus learning.

So, this is these are some of the references, all the papers that I have talked about are all may included here. So, this is where we complete the language acquisition second language acquisition in both children and adults.