Lecture 37 - Bilingualism - 2

Hello and welcome to the course introduction of the psychology of language, I am Ark Verma, from IIT Kanpur and we are running in the eighth week of the course, we are talking about bilingualism in this week.

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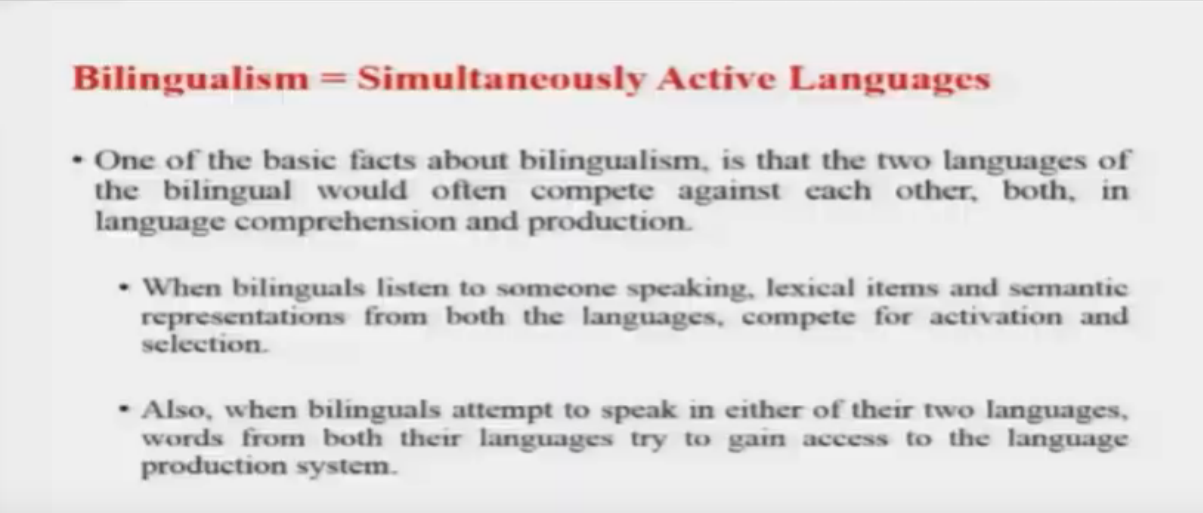

Now coming you know, directly to what we are going to talk about today? In the last lecture, we talked about the fact that conceptual representations, you know, are shared, across the two languages, even though the two languages have distinct labels. Now, this problem of having two distinct labels for just the same for the exactly, the same set of concepts, is very interesting. It is interesting in the sense that, you know a lot of research in bilingualism and otherwise has shown: that both the languages of the bilingual, are constantly, and simultaneously active, at all times. Why, even if you're doing production or if you're listening to speech or say for example, both kinds of things, either you're listening to speech or you're doing any kind of production writing or speaking or anything, both languages are active and they're active simultaneously equally, at the same time. Equally may be, contested we'll come to why equally; this might not be the case. But, the fact is: that when bilinguals, are listening to someone speaking, lexical items and semantic representations, from both the languages, will compete for activation and selection. Suppose you say for example, talking to me in English, if you're talking to me in English, whatever words you're saying, whatever objects you are describing or events you describing, I have equivalent names, for everything that you're saying, in Hindi as well, when I'm trying to comprehend that, suppose you're talking to me about an apple or an mango or a banana or some you know, animal or some you know, place that you know, if I have you know, equally, heavily linked, label in a different language: that will also, kind of compete for activation and selection, as soon as I show you a picture of an apple, both the names will you know, start competing for activation and selection, to be say for example, spoken out, you know, typically this, can be very easily seen, in picture naming studies that involve bilinguals, in picture naming studies bilinguals say for example, you know, they have to be told, which language you have to operate in, for this set of trials, if you don't queue them also, for suppose say for example, the queuing is to you know, it's not effective, then you will see that, there is a lot of interference, with respect to naming in the two languages. The same is say for example, so this is for naming; say for example, the same is true for comprehension, as well. Now, this is, this kind of puts us in a very interesting, situation

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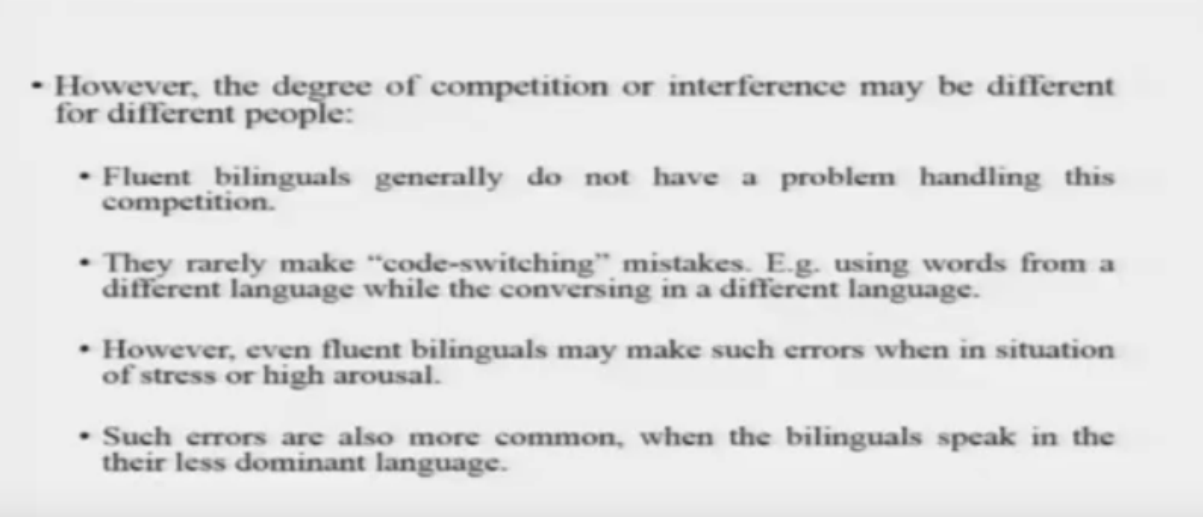

You can kind of ask questions about, you know, at what level of proficiency, of both languages, there will be more interference. Suppose will the interference be more, if I am, say for example, a beginner, l2 learner or this, does this interference kind of subside, if I have you know, sufficiently mastered the second language. And not talking about the provision is the first language as well, because it is assumed: that the first language is your native language and you are adequately, proficient in that. So and that's also, you know, in line with what has been observed, which has been observed, so to speak: that fluent bilinguals, I generally do not have, a lot of problem handling this interference, they don't have a lot of problem handling this competition B, production or comprehension. Fluent well you will also, rarely make "code-switching" mistakes, say for example, code-switching basically is when you mix, up words from the two languages, in the same sentence, sometimes completely unintentionally. So, as long as you are kind of highly, proficient in both the languages, you will not really be making a lot, of these mistakes and this is kind of a testimony to the fact: that you've mastered, not only the proficiency in both the languages, but, also the art of controlling, the two languages in you know, from interfering with each other. However, it's not that, fluent by English don't make errors. So, even fluent by linguists, make some errors, say for example, when the situation is of stress or of high arousal, you're preparing for an interview, suppose there is a high-stress situation, also, fluent by linguists will also make these mistakes. These errors basically, are more common however, when the person in question: that is a bilingual in question, is performing in the second language. Okay? Suppose say for example, you're not very proficient in the second language and you are kind of you know, at a place where you have to give an interview and you are being interrogated and grilled and you know, you've been asking, asked them so much questions, all of them in your second language, whatever the second language be, what could happen is that if, you're too stressed or too nervous or you know, you're kind of you know, you know, gasping for breath and you're sweating, in pounds and all it might be possible that you, you know, for a while, lose words in the second language. You can only remember the, native language words, sometimes not even there. So the idea, is that there is a lot of this competition and interference and why bilinguals, raised their proficiency in the second language and they kind of move from you know, beginner, you know, unbalanced low proficient bilingual, to a highly proficient, balanced bilingual, balances basically, having equal provisions in both the languages, unbalances having higher pre-finish, proficiency in the first language and lower in the second language, usually, similarly say for example, you know, yeah! So, this is low proficient, is low provision in for second language, high proficient is high proficient in say you know, second language. Now, these terms will also be used interchangeably, when we are discussing this, coming back to the topic. So, bilingual is when they raise their proficiency in the second language and they

move from being low profession, bilinguals to high profession, bilinguals or from being unbalanced, bilinguals to, balanced bilinguals, now they also have to learn and master the skill of controlling, the two languages and keeping the two languages from interfering, with each other say for example, in task situations where, there is a very, well specified you know, target language. Okay? So, this is, this is the case and there are multiple scenarios where this kind you know, where the simultaneous, activation of the two languages you know, can be manifested and can be tested you know, observed one of the scenarios is, in terms of when you, you know, come across cognates.

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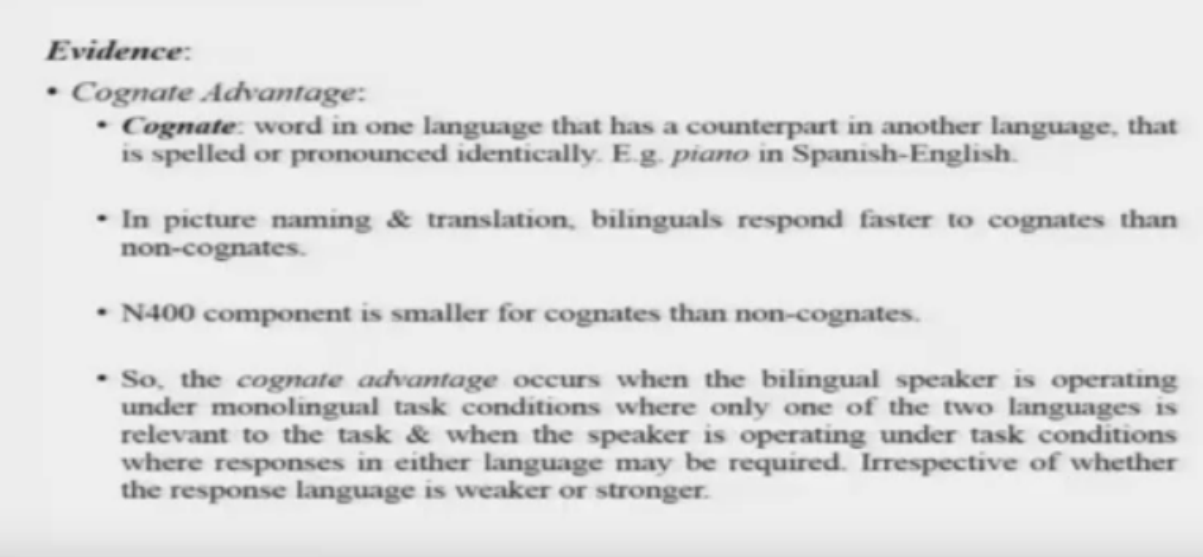

Now cognates had a special class of words, which are say for example, in one language and have a counterpart in another language: that is spelled or pronounced completely identically, say for example, the word piano, is the same in English and Spanish. There could be other examples as well, say for example, the word mother and brother and so on, I mean these words are very, very similar across languages. Okay? And sometimes they play you know, spelled and pronounced equally, you know, in, in the same manner as well. But, also in you know, as soon as the word is transformed into something else, then it just know it ceases to be a cognate. Now, in picture naming and translation, studies, where participants are asked to name pictures and the name of the picture is a cognate term or translation of cognates into you know, from l1 to l2 or l2 to l1, it has been found that by linguists respond faster, to cognates than non cognates. Why could that be it is very intuitive, because you have a similar code, basically coming from both the languages. So that is why, you will be faster there. Also say for example, the n400 component, of ERP if you remember the last week's lecture and 400 typically indexes, semantic anomalies. The n400 component is also, elicited that much smaller, for cognates than non-cognate, suppose say for example, a cognate term is embedded in a particular sentence, even though it, it is a situation where the word can be taken as a normal s and in 400 is eliciting, there is a high chance that you, you know you would be slightly more liberal, in accepting that word knowing, its cognate status: that could lead to, slightly reduced or diminished in 400 Peaks. Now, the cognate advantage actually occurs, when the bilingual speaker, is typically observing under monolingual tasks situations, a task situation, a situation where it is specified that only one of the two languages, is the relevant and the target language and the speaker has to try and avoid, interference or activation of the second language. In that case, basically whether the response languages, weaker or stronger, the sometimes interference can be faked.

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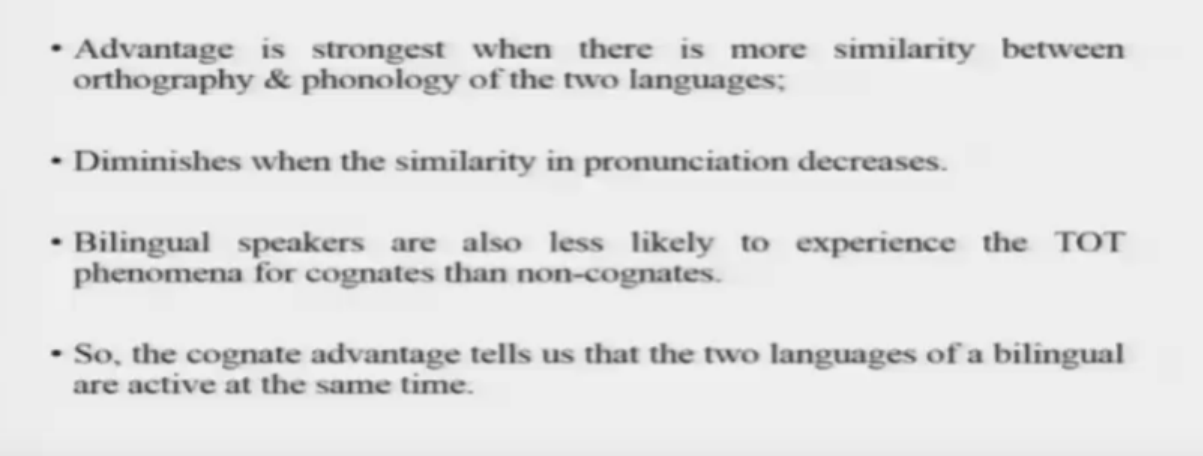

Now, this cognate advantage is being found to be you know, strongest when there is more similarity, between the orthography and the phonology of the two languages. What actually happens is? If the orthography that is the visual makeup: that is the combination of letters and phonology that is the combination of sounds, are identical, it almost becomes very, difficult to separate the cognates, in the two languages, you know, whether this, word is of this language or being used as a member of this language or is being used as a member of this language that differentiation becomes very difficult. So typically what it does is it, magnifies the cognate advantage, if you have to give a task when you have to, you know, perform a lexical decision, for this word, it is very easy or you have to perform say for example, a naming of this word, it becomes fairly easy. Now, when the similarity in pronunciation decreases, you start having cues, of say for example and knowing whether this word, is when you say for example, English, French, cognates, the French pronunciations are you know, typically very different from English pronunciations. So, what would happen is? Say for example, English you know, in English, French, in cases of English, French, cognates, what will happen as, soon as the pronunciation will start diverging, you will already start getting cues, as to okay, this word is being used as a French word here or this word is being used as an English word here and that is why the cognate advantage, will start diminishing in these situations. Further bilingual speakers, are less likely to experience the tip of the tongue phenomena for cognate and then non cognates, basically for the same reason, because the phonological you know, connections are basically coming from both, the languages and hence will be stronger, as compared to the connections that are available for non-cognitive, just knowing from one language. Because there will be you know, almost a double connection, in case of cognates, there is a lesser chance for you know, people finding it very difficult to link, the sounds and the semantics. If you remember we talked about the tip of the tongue phenomena in much more detail, we figured: that probably the tip of the tongue phenomena reflects, weaker connections between the phonology and semantics. So, cognitive advantage in some sense, is a very good example, of that tells us: that there is simultaneous activation, of the two languages.

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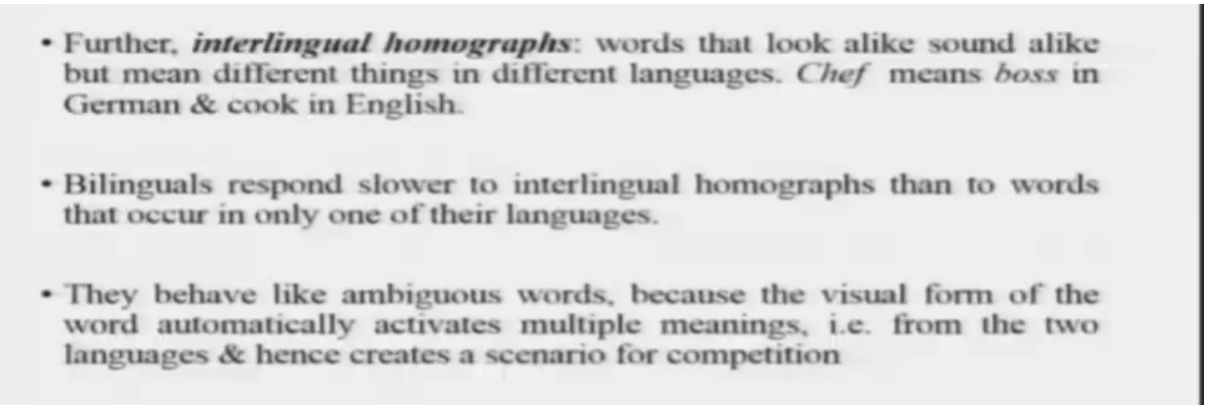

Another example, is of in the lingual homographs, words that look alike and sound alike, but mean different things in different languages. Say for example, the word chef, means boss in German and cook in English. Similarly the word room, means scream, in Dutch and to the space in English. Another example, could be the word coin, which means corner, in English and money, in French. So there are some of these examples that are there and it has been found: that for say for example, you know, if somebody has to perform a lexical, decision task, bilinguals will respond slower, to the inter lingual homographs, than to words that occur only in one of their languages. Why is there, slower you know, a slowing effect an inhibitory effect, in cases of in the lingual homographs, as compared to cognates. Because cognates you were seeing facilitatory effects or advantages, it is typically because, the inter lingual homographs, have different meanings, even though the sound may be the same, the orthography and the spelling may be the same, but, the meaning is very different. So, what happens is? If you make a mistake, you know, you know I, I wanted to apply some you know, room to your bread, something like that, if you know, people are kind of code-mixing and using this kind of thing or you're making a lexical decision task for English, you know that, kind of thing will, basically asks you to be conscious of the meaning of that word, you know, also and you have to be conscious of the meaning of that word relevant, to that particular language in conversation. So, these kind of scenarios might, you know make, it you know, slightly confusing, if people are you know, coming across a lot of inter lingual homographs in conversation. As and as I was saying, the in telling will homographs start, behaving like ambiguous words, you know, talked a lot about, ambiguous words and how they, are very important to language, we've taken this example, of the word bank and Bank meaning the riverside or bank meaning the money institution, the same example can be used for chef. Chef means boss in French and book in English, which language if you are a highly balanced, French, English, bilingual and the person you're talking to is also highly balanced, French, English, bilingual and suppose the context is not you know, helping you out, it might be at times, difficult to really know, what is this chef mean? Are you talking about your book, say for example, I had you know, I went for a lunch, you know, to my boss's place and he or say for example, I went to the, I went for lunch at the chef's space. Now, a chef because you've gone for lunch, it could be you know, the cook or it could be your boss as well. These kind of difficulties, are very common and they occur with bilinguals and you know, usually they create a sort of a scenario for competition. Again notwithstanding the context, kind of usually would help in resolving this kind of you know, problems. Now, are there only problems, because of this simultaneous activation, is there no advantage to this.

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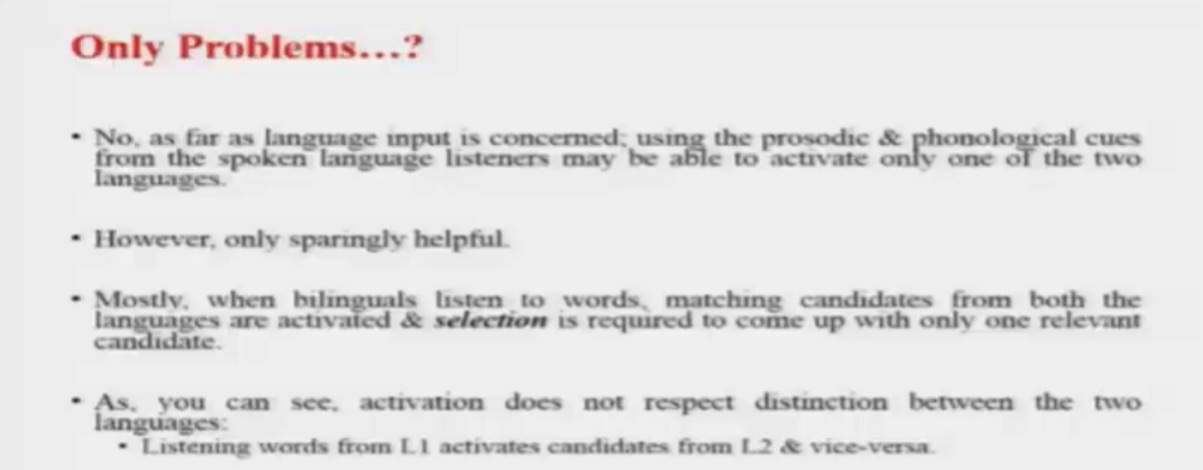

So, as far as language input is concerned, sometimes using the prosodic and the phonological cues, from the spoken language: that can be actually helped: that can be actually used, to help bilingual that to figure out, which of the two languages are in question, which is the relevant language and basically, keeping the other language that is a non-relevant or the non-target language slightly suppressed. However, this is not really very, very useful, in most cases for bilingual studies across situations and across language pairs, it has been shown: that there is adequate proof for simultaneous activation of the two languages, almost you know, across the board. Now, another thing that happens with bilingual's, when they listening towards, matching candidates from both the languages, we are activated and then what the bilingual has to do is, for perfect comprehension to occur, let the select okay, I this is the version that I want to activate. So both of these matching lexical representations, will compete, for activation and then will need to be selected, so, you want to select the you know, the version that is a relevant to your target language. Okay? And one of the things also that has to be observed, is that, activation of word forms, does not really, respect word boundaries, I was talking to you about the cohort model, some time back when we talked about speech production. If you're listening to, somebody speaking something and a cohort is activated, from the onset and so on. Basically, what will happen is? Candidates from both the languages will start becoming activity. So, you'll not really only have a cohort in one language, we have a parallel cohort in the other language as well. Okay? And people have kind of tested this in, in a variety of situations, I can remember this experiment from Marian Spivey and I and Hirsch and they were basically testing these Russian English bilinguals, by giving them short instructions

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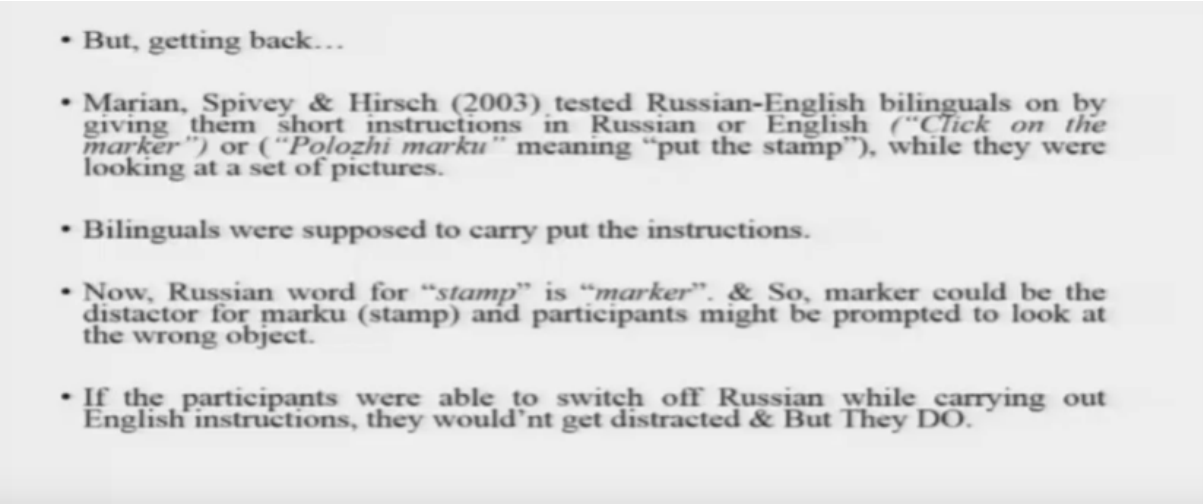

in either Russian or English say for example, click, on the marker or you know, "Polozhi marku" maybe I mean I'm not sure the Russian pronunciation, of this which basically meant, you know, put the stamp and the marker is basically the word for stamp, while they were looking at a set of pictures. So, it was sort of a you know, visual world kind of a paradigm and there were a couple of pictures here and the part French were asked put the marker. Okay? So, you have to put the market somewhere. Now, bilinguals were basically, supposed to carry out these instructions and move you know, the objects, it could be on a table or on the screen. Now, the Russian word for stamp is marker, so marker could be, the distractor for Marku, which is stamp. Okay? Say for example, there are two things and the one is the marker that is the English, word and then there is a stamp which is Marku, also they could have some other kinds of distractors as well. Now, basically what the participants had to do in this experiment, was to kind of respond to these instructions, if the participant if the Russian English bilingual has completely switched off on language, they will actually act according to the instruction, in the you know, in whichever language the instruction is. If they have not, sometimes they will actually, look towards or you know, their reaction times will be slower, if you know, the object in question, has different meaning in the two languages. So, if the participant would be able, to completely switch off Russian, by carrying out the English instructions, they would not look at the stamp and he will just look at the marker. Okay? if say for example, my server says the case, they will not look at the marker, but they look just at the stamp. But, what they actually found is, in this study, is that regardless, of whatever instructions are given, either in English or in Russian, they actually look at both the marker and the stamp, because one is the phonological distracted for the other, which is again, an evidence of the fact that both languages, are simultaneously active. Also, say for example, you know, both languages are supposed to share the lexical representation, some words and so on and basically, what happens is?

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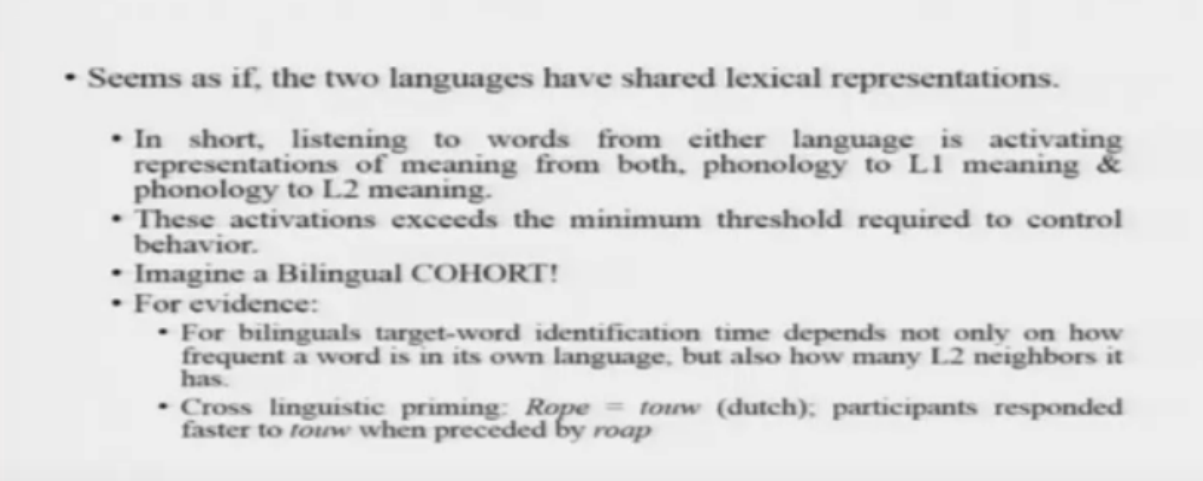

If you listen in two words in either language, the words from the other language will also, get activated, I was giving you this example, of the bilingual cohort. Okay? They wanted to kind of test it so for example, for a bilingual target word I did identification task, there the target word identification time actually, depended on, not only how frequent the word is in the target language, in its own language, suppose it's a word in l2, an English word, how frequent word is in English, but, also how neighbours, how many neighbours it has in Hindi? So, neighbourhood size across languages, will also be kind of you know, playing a part and this, this kind of you know, data has been used in studies of cross-linguistic priming, where say for example, you can use candidate from a different language to prime a target and Prime and target word in a different language, if there's a lot of studies that a publisher and cross-linguistic priming, is Spanish Dutch, Spanish Catalan Dutch, English you know, a French English and so on.

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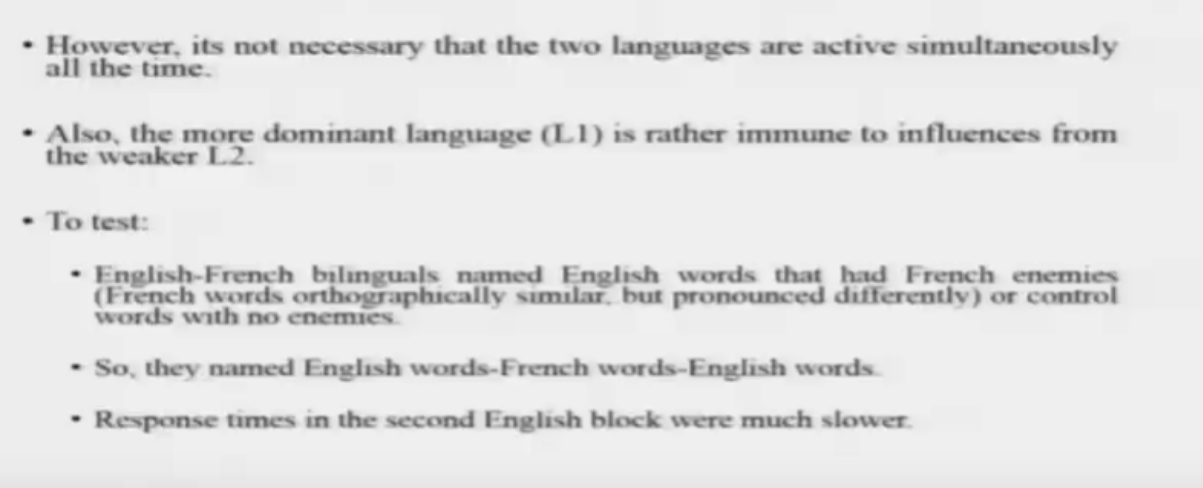

However, having said that, it is not necessary that the two languages are simultaneously active all the time. There might be scenarios, where due to the context and you do some other kind of information, this non-target language, is suppressed slightly, heavily. Also, say for example, it is observed and documented across studies: that l1 to l2 influences are very high, but, l2 to l1 influences are slightly lower. So in cases where, your l1 is the target language, l1 might be slightly immune to influences from the l2, than vice of versa. Okay? Because usually the l1 is the stronger of the two languages,

they wanted to test this and they had this English, French, bilingual name, English words: that had French enemies, basically French words that are orthographic is similar and but Browns definitely or control words with had no French enemies. And the persons were basically asked, to name first in English words blocked, so their reaction times were noted, then a French words block and then in English words blocks. Now, in the second English words block, they have already known, you know, named in French. So, the French you know, a language is slightly active, what they found is that the, second block of English the reaction times or the name in times, were much slower, as compared to the first block of English. Why could that be, because now, French is activated and that is probably you know, now started to interfere with English. Okay? So that is: that is basically happening, here that English French, these are English French bilinguals, in such scenarios, you can see that L 2 to L 1 influences, can be documented. Now, not only language, you know, the simultaneous activity is there in a language comprehension, it is also there in language production as well. Now, we've talked about a couple of models in language production, you will probably remember the levels we word plus, plus model, you start from the concept, you come to the lemma, then you start you know, phonological encoding, morphological encoding and so on. And for bilinguals the idea, is because the conceptual representation is the same, so basically, what should happen is, even before you get to the lemma level, you should cut it select the correct lemma relevant to a particular language, if you have to speak in that language. Okay? There's another, another model are the relaves, 1992 bilingual put in a language production model,

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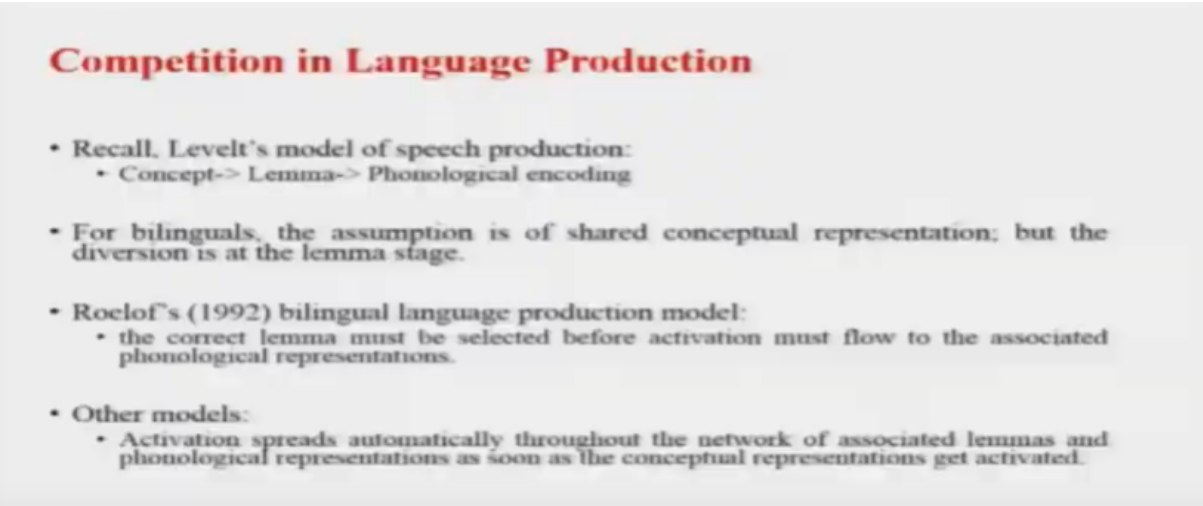

They also, specify that the correct lemma must be selected even before the activation flow, to the associated phonological representation has initiated. There are other kind of models, more recent models which actually says that, activation will automatically, spread from the concept level, to the lemma level, to the morphological encoding, to the phonological encoding, levels and the interference between the two language, any of these, three or four stages. So, it's not possible to kind of restect the activation, only till the lemma level and then you select the correct lemma and then there's no activation downwards. But, so evidences are foreign against, all kinds of these models. Now, if you wonder, even if the bilingual has selected the correct lemma,

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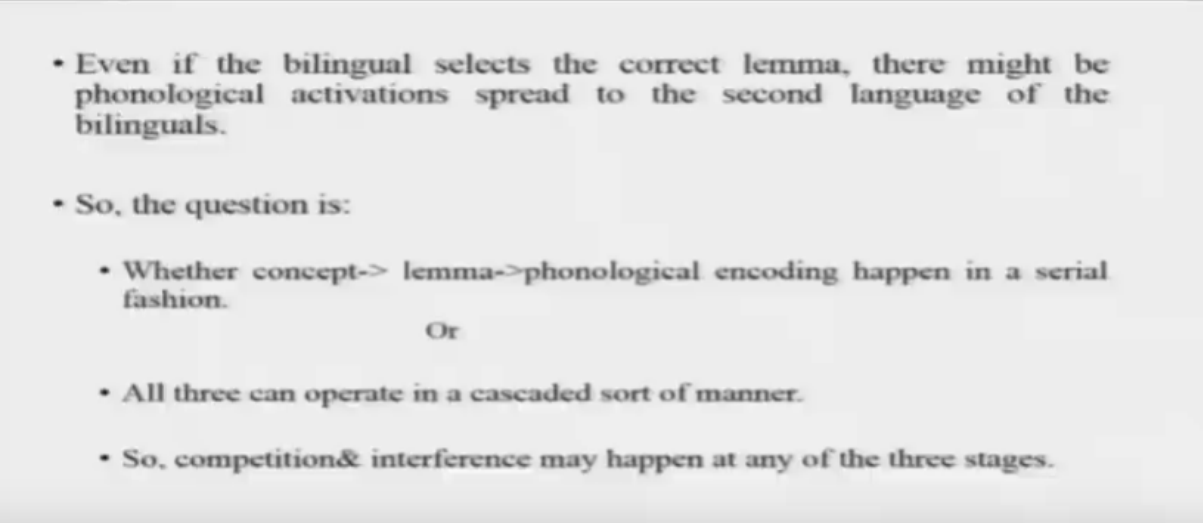

there might be for neurological activations: that kind of has spread to the second language. Now, if the second language candidates are phonologically activated, they might interfere in further steps like solidification and coming of the phonological word and so on. So, the question basically: that is asked in by our bilingual language production literature, is that whether you go from concept, to lemma to phonological encoding in serial fashion or all three operate in a cascaded sort of manner and if, this is the case then obviously, you can say that, you know, competition or interference and actually will happen at any of these stages. So, there's very, little that can be done, to separate the two languages. Now, Alphonsa Caramazza, are did a lot of research using the picture word interference task.

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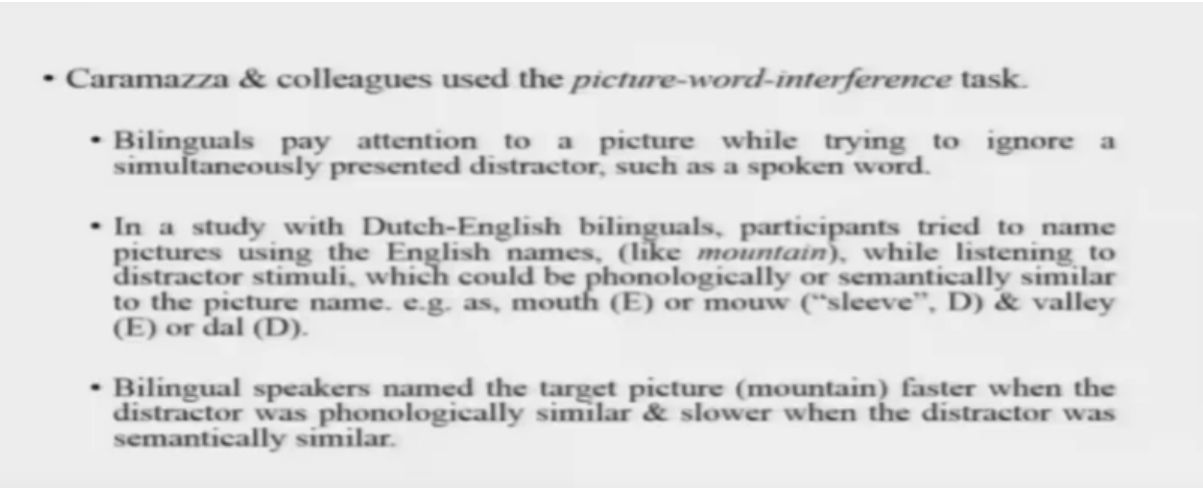

And basically, they had bilingual pay attention to a picture, while trying to ignore a simultaneously presented distractor. So, it was a picture naming task, but, there is also say a word, in a different language that is pasted on the picture. Okay? So, what they did was in a study with Dutch English, bilinguals, the participants tried to name the pictures, in using the English name, so their picture will be off say for example, a mountain, while they're reading these distractor stimuli, which could be phonologically, very similar to the English picture or semantically very similar. Say for example, the phonological e similar version will be mow and semantically you know, our a similar version would be say for example, mow, you know a doll, which is valley, phonologically similar would be mow, which was sleeve. Okay? So, they're the different kinds of these arrangements, the English name is

mountain, phonologically similar is mouth or mow and semantically similar is valley: that is doll. Okay? So, bilingual speakers were basically, asked to name, the target picture and what was found was their bilinguals, basically named the target picture much, faster when the tractor was phonologically similar, as compared to when the distractor was semantically similar. So, there is a sort of a facilitation, with respect to having phonological distractors, even though they are from the other language. But, the thing is here, why should this happen, you would kind of assume is that, because the funnel the combination of the sounds is very, similar and if the pronunciation etc. Is fairly you know, shared then that kind of advantage or facilitation can be expected.

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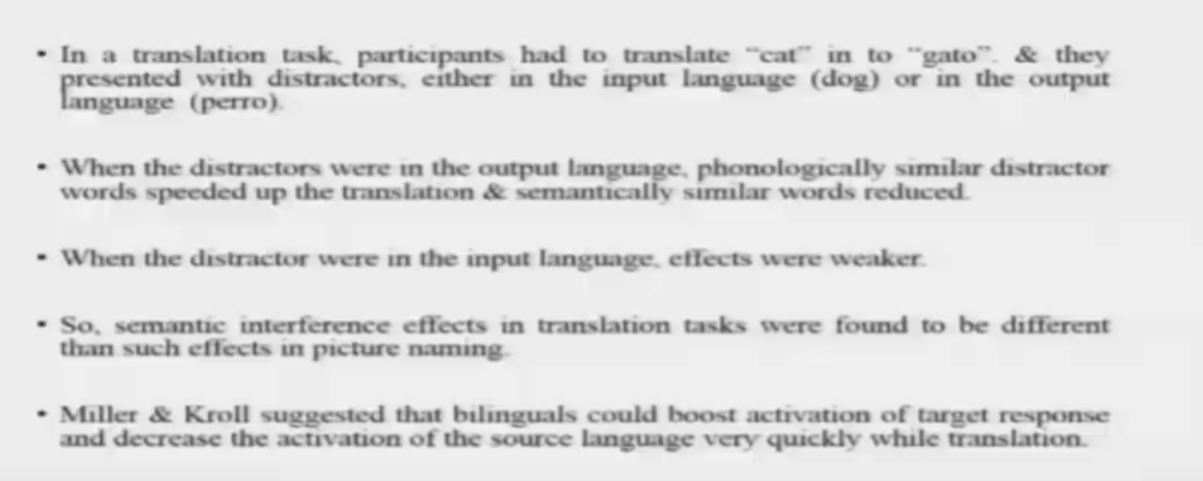

In a translation task, when partners were asked to translate “cat” in to “gato” that is from English to Spanish and they were presented with distractors, either in the input language: that is English or in the output language that is Spanish. So, dog that is in English or perro: that is Spanish for dog, when the distractors in the output language were phonologically similar, it's speeded up the translation, because it kind of helped, the same phonological representations to say active and when they were semantically similar, it kind of reduced because public created more, much more competition there. When the distractors, were in the input language, this effect was kind of found weaker. So, basically when you are preparing, to produce something, the phonological facilitation kind of is more helpful there, as compared to in the input language. Now, semantic indifference therefore in translation effects, kind of you know, is different from phonological effects and that is sort of a given now. Now, Miller and Kroll, basically suggested that bilinguals basically, could boost the activation of the target response and it could decrease, the activation of the source language while translation is happening that basically has to happen, with respect to l1 and l2.

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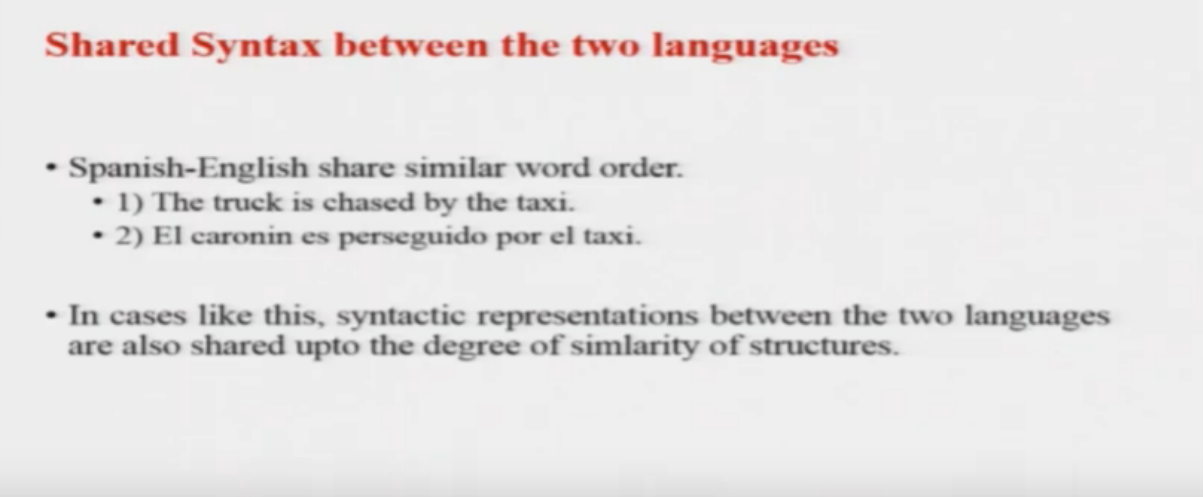

Now, there is also a lot of evidence for shade syntax, between the two languages say for example, Spanish and English share a similar word order. So, the truck is chased by the taxi. EL caronin, es perseguido, por el taxi. Now, this is basically the same sentence, in two languages and the word order in Spanish is also, very similar to the word order in English. In cases like this, when the two languages are sharing and have very, similar overlapping sand tactical constructions, it has been found that there is, sort of you know, a shared syntax that is used.

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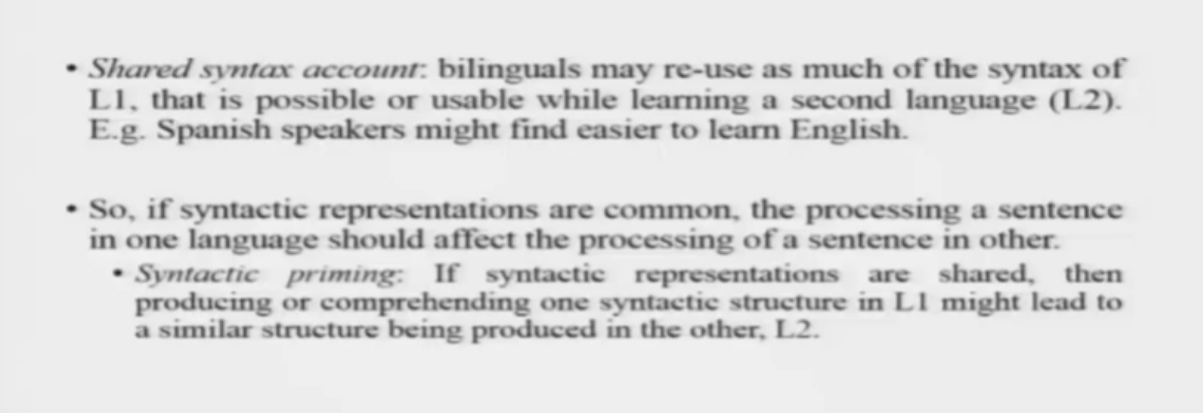

So, the shared syntax accounts has to say that bilinguals, may use or reuse, as much of the syntax, of their first language, as much is possible within the second let's, suppose for example the Hindi syntax, were very similar to the English syntax, what as a bilingual I would do is, I will probably try and create more and more constructions, which are consistent, with the Hindi syntax and are usable and acceptable in English. Okay? That is the, shared syntax account and if syntactic representations are common, it kind of makes it easier to process the sentence or produce the sentence and this can be manifested in phenomena, like syntactic priming. If syntactic representations are shared, then producing or comprehending once you know, syntactic structure in l1, might facilitate creating a similar syntactic structure in l2. So, suppose I'm asking you to elicit sentences in your l2 that are in Spanish, but I'm, kind of giving you, some Prime's in you know, l1 having similar word order, this will already facilitate your creation of sentences in l2, even though I am, using sentences of a different language. But, the word order is common and that is leading to this, facilitation.

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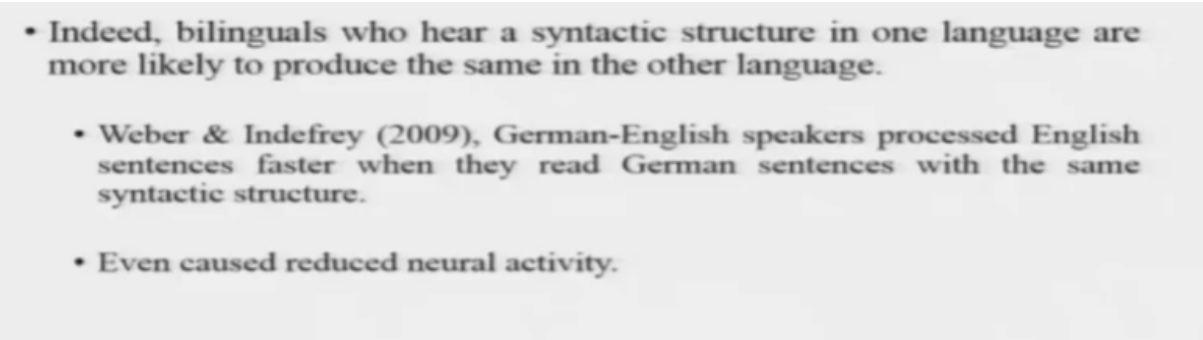

Indeed say for example, bilingual so here a syntactic structure in one language, are more likely to produce the same syntactic structure in the other language as well. And Weber and Indefrey did this study in 2009 and they found a German English speakers, process English sentences faster, when they read German sentences, having the same kind of syntactic structure. It also, kind of reflected in the brain, with reduced neural activity.

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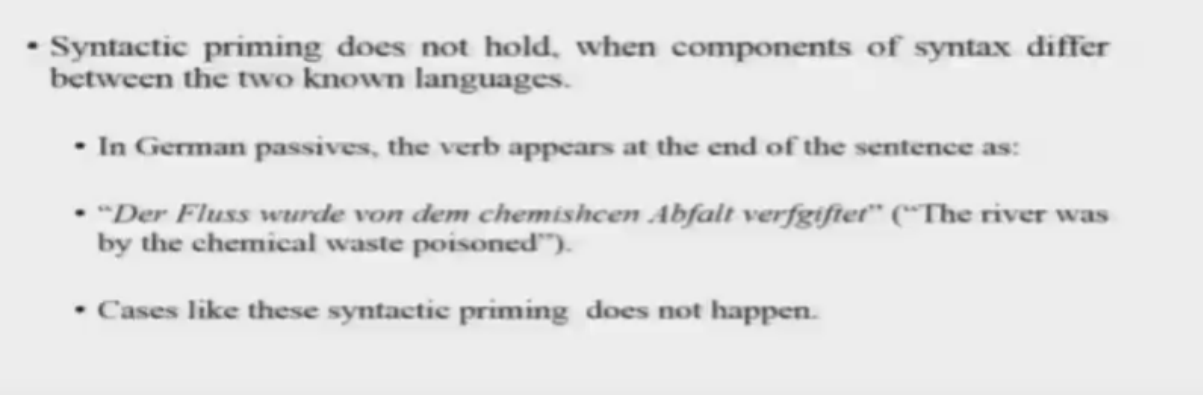

Syntactic priming however, does not hold when the two languages do not; share a lot of syntactic structure. Say for example in case of German passives and the verb, appears at the end of the sentence as opposed to in English where it appears in the middle of the sentence. So, in cases like this, syntactic priming does not happen and it says that okay. The degree of co activation will kind of depend, on the degree of overlap or Sheerness or you know, shared syntax, between the two languages. So that is all from me about,

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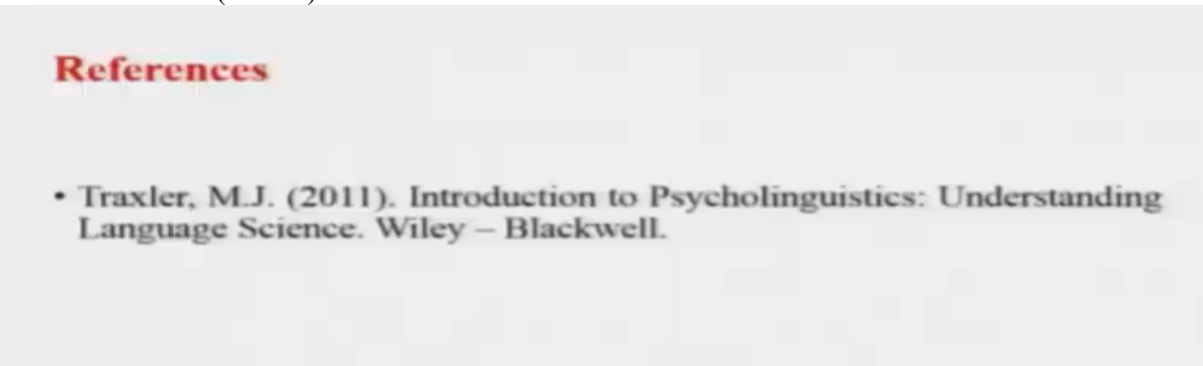

the co activation and simultaneous activation, of the two languages, what kind of consequences it has for bilingualism.
Thank you.