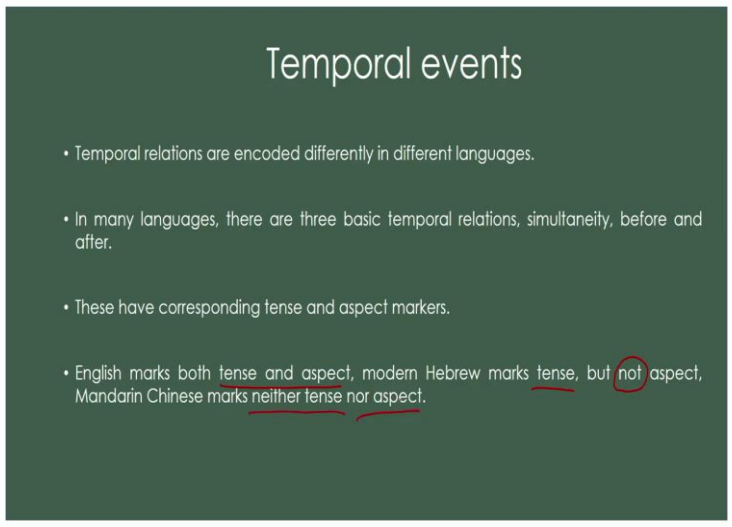**Bilingualism: A cognitive and psycholinguistic perspective**
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Module - 03
Part - 02
Lecture - 07
Bilingual cognition: continued

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So, we are looking at Bilingual Cognition. Bilingual cognition in terms of how different languages encode different concepts differently or sometimes same concepts differently. And we looked at how different concepts like gender, number and so on, have all the have affected language processing and sometimes non-linguistic cognition as well.

So, how basically how if a language has grammatical gender, how it might affect that person's performance in tasks that do not require him to use the grammatical information at all, in a non-linguistic task. But, that codification, that understanding of their concept as exemplified through the language makes the person behave in a certain way.

So, now we will move on to the idea of another grammatical component, which is called the temporal events. Temporal events primarily refer to the tense and aspect marker in a language. It is a grammatical property. Now, languages differ widely across the world's languages in terms of how they encode the information of time.

Many of you will already be familiar with the idea of Hopi language. In fact, in the heyday of linguistic determinism, this was one of the most commonly utilized examples, that Hopi language does not have the time marked on the verb phrase, in the same way as English does.

So, from looking at the verb, it is very difficult to know the time of the event. And this was taken as an example of, this was taken as a as a pointer or indicator of the Hopis not having a fine-tune understanding of time as the English would have. So, similar findings have been abound in this field. The so, various languages use different techniques to encode temporality in their grammatical structure.

So, for example, English marks both tense and aspect, Modern Hebrew marks only English marks both tense and aspect, Modern Hebrew marks only tense, but not aspect, right. So, languages may differ as to what is given a grammaticalized status. English gives that status to both tense and aspect. Hebrew marks only tense, but it does not mark aspect.

Mandarin Chinese marks neither tense nor aspect. So, basically, when we talk about temporality, there are two things. Now, English grammar tells us there are two ways of looking at time. One is the time of the action, whether it happened in the present, in the past or in it is going to happen in the future.

And even within that, there are things like there are ideas of simultaneity and before and continuity and so on and so forth. So, these are the various finer aspects within an event to understand it temporarily. So, English has these kinds of differences whereas, in Chinese it is optional. In Hebrew, aspect is not mentioned.

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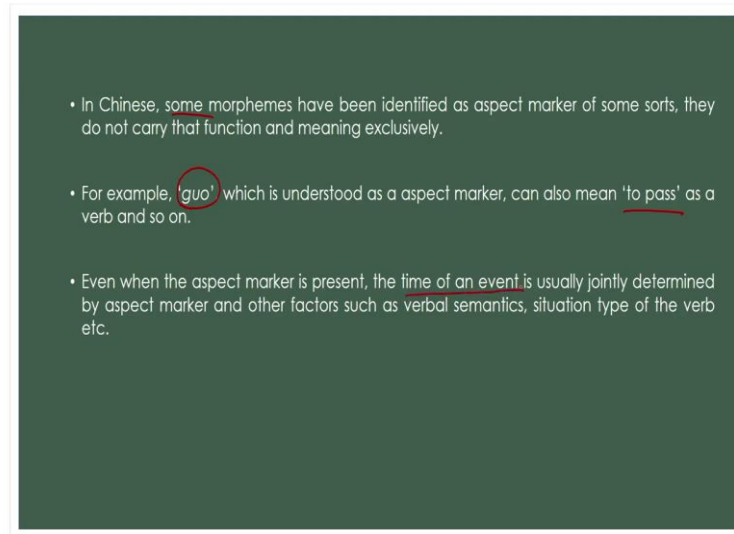
So, these are some of the differences. As a result of which Chinese language has been studied in extensively to look at how their non-linguistic performance actually works out. So, in Chinese some morphemes have been identified. One of them is the 'guo' morphemes, which sometimes is used as an aspect marker.

But interestingly, unlike English, English has dedicated markers for tense and aspect. That is not the case in Chinese. So, they have some morphemes like this, which can be used as aspect marker, but it also has other meaning, like 'to pass' as a verb and so on. And even when these kind of aspects markers are present, they would in the timing of the of an event would still be determined by the aspect marker and other factors, like verbal semantic, situation type and so on and so forth.

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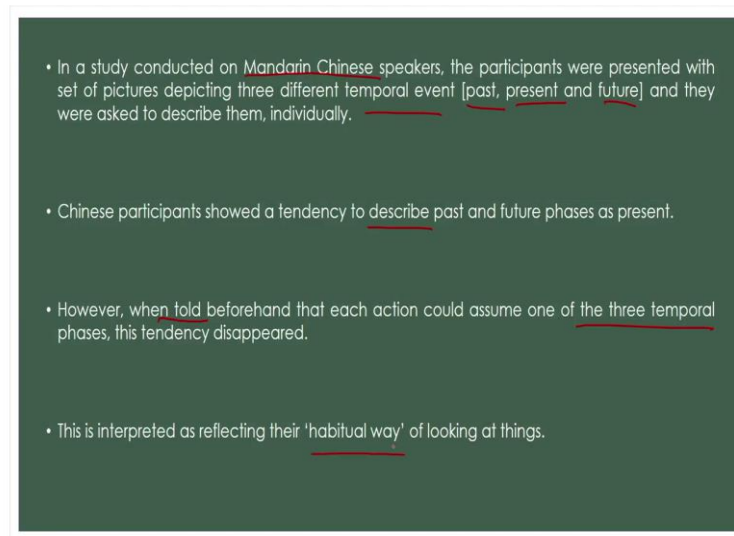
Now, this kind of background information has been utilized in many studies on man Chinese speakers. So, in one particular study this was on the Mandarin Chinese speakers. The participants were presented with a set of pictures. Now, these pictures, the manipulation was that the pictures were different on in terms of the temporality, as in when did the event happened.

So, either it is past tense, present tense or future tense. Looking at those pictures, the pictures can be described in English language as events that took place in the past, that is taking place in the present or that will take place in the future. And this, the task, when given to these Chinese speakers were to describe each of these pictures. Remember, the pictures were different.

They were not the same picture. They depicted events that would, for an in English speaker would be described in terms of past, present and future tense. But Chinese, for Chinese it is not mandatory to mention. And the study was to describe all of these pictures.
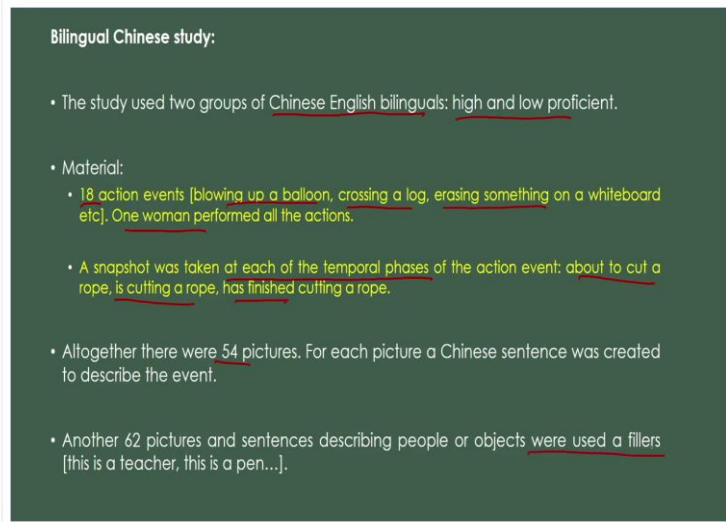
What happened was, when these Chinese, when the participants were not told, not given any explicit instruction, they tend to tended to use only one type of description for all. So, there was hardly any distinction between the present and the past and the future. However, when they were told that they were when they were informed beforehand, that

these pictures could assume different kinds of temporality, that there will be 3 temporal phases possibly, then this tendency disappeared.

Now, what does it tell us? It tells us what we have already discussed. There are 2 ways in which language and cognition in terms of bilingualism can get affected. One is the codification issue, and the other is the habitual thought issue. So, because Chinese does not typically code the temporality in the grammatical structure, they are typically also more prone to habitually ignore that.

So, this is what but, if you tell them that this will this is the case and you must keep this in mind, then there is a tendency. So, basically, this is taken as a good indicator of the habitual thought process in case of a language like this.

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Now, this kind of background studies worked as a starting point for Chinese-English bilingual studies. Similar kind of techniques were used in a particular well known study that it relies Chinese-English bilinguals. However, the interesting modification here was, manipulation was proficiency level.

So, these are participants who had Chinese as their L1, English as their L2. However, the proficiency level in their L2 differed. Some people some participants were low proficient, meaning their English was not good, too good. Some people were high proficient who had high proficient use of English language.

Similar kind of technique was used. So, 18 action events, right. So, basically, various kinds of event, various kinds of action, were depicted in the cards. So, blowing up a balloon, crossing a log, erasing something or writing something, various kinds of activities, basically various kinds of events, right. And all these events were shown to be performed by only one actor, which is only one woman.

So that, these actions were different only in terms of the action or in the in terms of temporality. So, each of these actions had 3 possibilities, each of the temporal phases. So, basically, there is somebody is cutting a rope, has finished cutting a rope and is about to cut a rope. As you can see, so, there were 18 action events and each of those 18 action events had 3 different temporal phases, depicted in the cards. So, altogether you have 18 into 3, you have 54 pictures. Altogether, there are 54 pictures.

For each of these pictures, a Chinese sentence was created to describe, ok. Another 62 pictures and sentences describing other things and objects were also used. These kind of sentences are called fillers, which are not part of the actual study, but they are used for purposes of not letting the participant know what the exact design of the experiment is.

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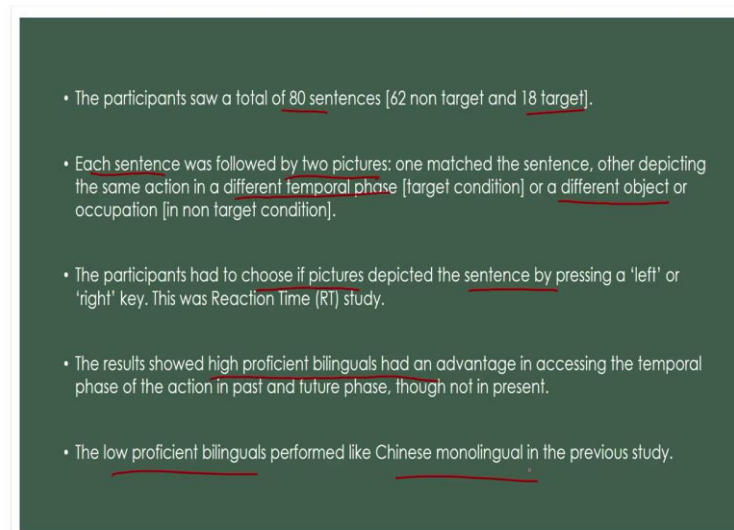
So, each participant saw a total of 80 sentences. So, all those 54 were not shown to all the participants. So, they have each of them saw only 18 target. Target as in those pictures that had those differences in terms of temporality of the same event. Now, the test was like this. So, each sentence had been followed by two pictures.

So, one sentence, one Chinese sentence were followed by two pictures. Now, one of those two, one matched the picture, the other depicting the same event, same action in different temporal phase or a different object, right. So, there was a sentence, which was followed by either a matching picture or another, which did not match. Now, in the mismatch condition, there were two possibilities.

One was difference in terms of temporality, another was difference in terms of different action depicted. So, the task for the participants was to choose if the pictures and the sentence match. So, in which case, what are the matches? What are the mismatches? So, if the picture and the sentence, first the, the sentence was given and then the picture came in. So, the task was to press yes or no, for if there is a match or there is a mismatch.

This was the reaction time study. Reaction time studies are those studies that look at the reaction time. So, onset of the stimulus and the onset of the response. The time between these two is called the reaction time, basically, the time that the subject takes to process that information.

Now, reaction times are an indicator of processing difficulty. If the process is easy, one takes less time. If the process is difficult, they take longer time. That is the primary logic of reaction time studies. Now, the results showed that high proficient bilinguals had an advantage.

What does it mean? High proficient bilinguals, they were Chinese-English bilinguals who were high proficient in English. Now, their judgment were closer to English judgment, because they were showing more fine-tuned differences in terms of the temporality of the event.

So, basically, if they said that the picture and the sentence did not match; that means, they took even temporality as a as an indicator, which did not happen with the low proficient bilinguals in this case. Low proficient bilinguals performed like Chinese monolinguals.

So, for them, the temporal difference were not an indicator of difference, but if the action depicted were different, that is what they considered as different. But high proficient bilinguals, they also took the temporality as a marker for difference.

So, this is one interesting study, but there are many others. In fact, there are studies by Boroditsky and et al (Refer Time: 11:45) on Indonesian English and many other such groups. More or less, the results show the same thing. If the language, if L1 lacks grammaticalized tense and aspect, and if they have English as their second language, high proficient bilinguals showed a better grip on the temporality as opposed to low proficient. Most studies in this domain show the same kind of result.

Yet another domain that has been studied in this area in order to see how the mentalized, the internalized concepts as represented through language, affect non-linguistic performance, that takes also motion-verbs as another domain. Motion-verbs are verbs of locomotion, movement. So, walk, run, jump, all of these in English language, they are motion-verbs. So, anything that denotes the verb, that denote movement from one place to another.

Typically, the human locomotion verbs are used. So, motion- verbs also is another domain where languages vary very significantly. Different languages have different ways of depicting movement. So, in English, you have a we have a large number of words, a rather rich vocabulary on of motion- verbs that depict the way the movement took place.

So, one can you know hop, one can skip, jump. There are various ways of the movement. Even walking, walk, slither, many, many, varieties of words, all of them mean the same

thing that one object move from one location to another location. However, a lot of other information is also present there.

So, depending on what are the primary factors that the motion verbs in a language depict, languages are of two types. So, typically, they look at the verb. Does the main verb, the root verb, encode the path information or it does not encode the path information? So, in motion verbs, the most important thing that is to be taken into account is the path information.

So, for example, in English, word 'exit' already tells us that the path information, that the object, whichever, whatever is moving is going away from the location. That is 'exit'. However, if you just say 'walk', it does not give us the path information, whether you are walking towards something or you are walking away from something, walking upward, walking downward, nothing. No information is given in terms of the path.

Now, in French, however, the information of path is there in the main root verb. So, is in terms of, for example, you see the French sentence here and the English sentence here. So, in French, this basically means the person, the man traversed the room, the street by running. So, this is basically an added information, right.

However, in this case, the main verb 'runs', this is the main verb here. It does not give us the path information. So, based on this, depending on where in the sentence, the path information is encoded, languages are divided into two categories. They are: verb-framed and satellite-framed.

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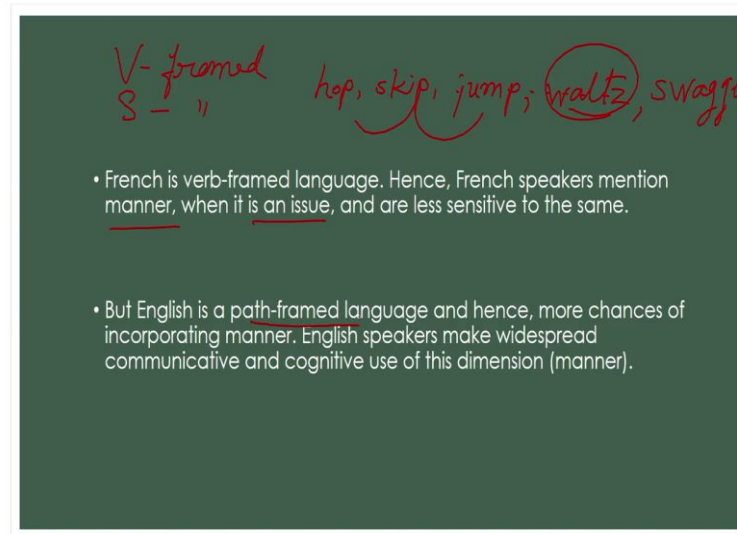
V for verb, S for satellite. Satellite as in, the path information can be in the, this is the path information in case of English language. So, this is not part of the main root verb, that is why we call it a satellite-framed language, right. So, this is the root verb and this is the root verb in French.

In case of French, you get the path information right there in the root verb, in case of English, you get the path information after the root verbs. That is what is called satellite. So, based on these, languages are of two types, verb-framed and satellite-framed. Now, when we say that some languages are verb-framed, some languages are satellite-framed, this has to be kept in mind that no language is entirely, 100 percent verb-framed or 100 percent satellite-framed.

It is quite possible. For example, I just showed you the words exit and walk. So, English has both possibilities of using a path, a verb-framed structure or a satellite-framed structure. But it is the pre-dominance of one structure above another that decides. Because in English, most cases it is a satellite-framed structure. English prefers satellite-framed structure whereas, French prefers verb-framed structure. So, that is why French is called a verb-framed language and English is called a satellite-framed language.

Now, this has far-reaching consequences. What consequence? For one, the languages like French or Spanish which have which are predominantly verb-framed language, the manner-information is an added information, right. For example, you see in the previous

sentence that 'by running' is optional, you may or may not use it. But in case of satellite-framed language, because the path-information is not there, manner-information is part of the main verb.

Hence, you have in English, you have works like you have a words like hop, you have skip, you have jump, can go on. There are many other such possibilities. Each of them depict movement, alright. There is no path-information. But they each of them differ from the other in terms of the manner in which the movement happened.

All satellite-framed languages typically will have a very rich vocabulary of manner verbs. Meaning, manner verbs are those low-motion verbs that are rich in manner information, right. English also has a beautiful word, 'waltz'. And these days there is a word that is very common among the youth, 'swag'. So, this actually comes from the word, 'swagger', right. So, all of these.

So, many various kinds of words, all of them, the moment you listen to this word, you actually have a mental picture of the person who is walking like this. So, this has a lot of extra, added information. Now, because French is a verb-framed language primarily, predominantly, French speakers mention manner when it is an issue, otherwise, no. When it is, when it is an important thing that has to be mentioned, they mention it, otherwise it is an optional thing.

But in English, because it is a path-framed language and more chances are there for incorporating manner. So, English speakers use a lot of, you know, the use say use of this particular property of the language, in case of communicative as well as cognitive use of the same.

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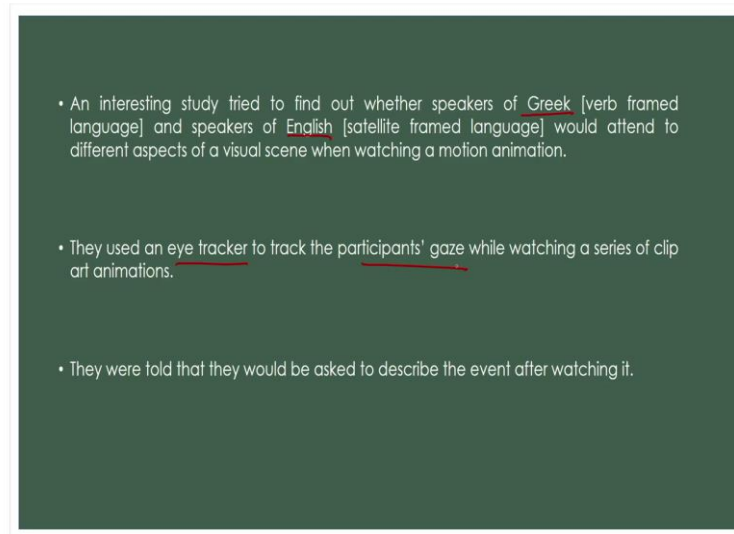
There are interesting differences. You will, if you can read French, you will see the same event in the newspapers will be depicted very differently in English and French newspapers. English will be far more spicy, in the sense that all kinds of possibilities of words to be used. French in that way will be very bland.

In any case, because of these differences, there are very interesting studies that have been carried out. So, one of them was on Greek language. Greek is also a verb-frame language. So, this study was on Greek and English speakers. English is a satellite-framed language, as we have just seen.

And the study wanted to look at if depending on the language, depending on the motion verb structure of a one's language, do people attend to the same visual display differently. So, this was the study. It was an eye-tracking study. What happens in an eye-tracking study is a machine called eye tracker is used.

It tracks the movement of one's eyes on a display as the display unfolds. Because eye movements are largely involuntary. We do not always think and look. By looking at an object more often than not, it is unconscious involuntary. So, and that is why it is taken as an indicator of the ongoing mental processes.

So, as you, whatever is going on in your brain, eyes, your eye movement will be a good indicator of that. So, that is the basic premise on which eye-tracking technology is based.

So, eye tracker, this in this study, they used eye tracker to track the participants' gaze while watching a series of clipart animations. And they were told before they were before the experiment started, they were told that they would be asked to describe the event after watching it, right.

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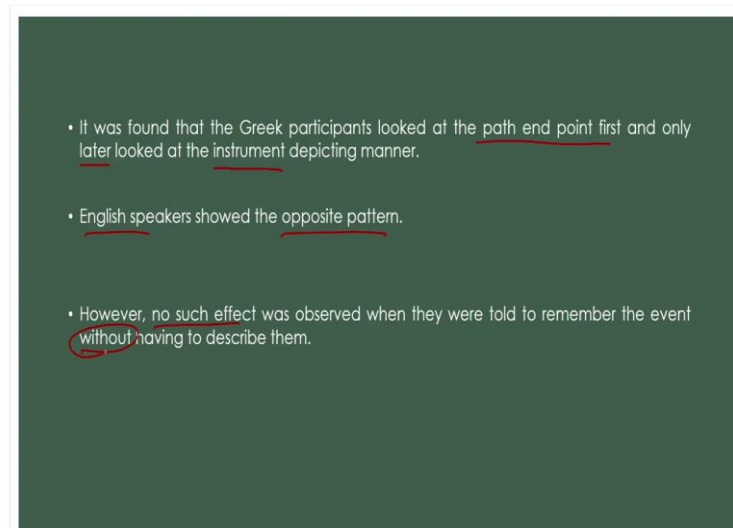
It was found that the Greek participants looked at the path end point. So, the same picture were given to both the Greek speakers and the English speakers. The Greek participants looked at the path end point first and only later looked at the instrument depicting manner.

Various kinds of manners were depicted, various kinds of events were depicted in the scene. So, in all the cases, Greek participants had a tendency to look at the path end. So, basically, path became the focus, manner became a secondary focus, in case of the Greek speakers.

But in case of English speakers, the more gaze was found on the instrument of manner than the path information. So, there are many other such studies. I have added them in the references. One can look up. So, basically, the idea is if your language makes you look at things differently. Basically, going back to the same idea we have been following till now, how language affects your cognition, nonverbal cognition. So, this is one example.

However, interestingly, in this study also, there was no such effects when they were told to remember the event without having to describe them. This is very crucial. In fact, this has been utilized to theorize on this. There is a theory called 'thinking for speaking'. So, you the, this kind of language specific way of looking at the world gets activated, if you have to speak. If you do not have to speak, then there are differences that have been observed.

Same thing was found here also, because they were told they will have to describe. Hence, automatically language mediated attention, took them to different places in case of the Greek and the English speakers.

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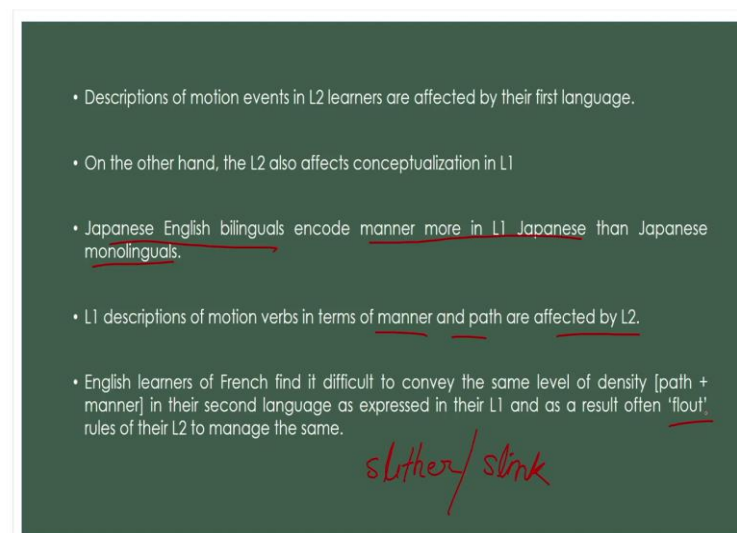
So, various studies have found that and the structure of motion events in L2 have affected people's understanding of the same in L1 and vice versa. Both ways, the impact works. In a very interesting Japanese-English study, the they have found that the Japanese bilinguals, who are high proficient bilinguals in English, Japanese is L1, English is L2, they incorporate more manner in L1 Japanese. Not in English, of course, English language is a manner dependent motion verb language.

But because this people are high proficient English speakers, so, they have incorporated that information in their first language. So, that also does happen. A lot more than Japanese monolinguals. This is the very crucial finding. L1 description of motion verbs

in terms of manner and path are quite often, not only in this study found to be affected by the L2.

On the other hand, English learners of French find it difficult to convey the same level of density, which is which is quite expected, because in English, it is possible to pack a punch in terms of information, manner information in each verb, each verb depicting movement.

So, for example, take this word 'slither' or another interesting word 'slink'. All you have to do in English language is to choose the perfect word and you are packing a lot of more information than your French counterparts will be able to. So, this is why the English who learn French find it very difficult to you know unpack their conceptual load into the word.

As a result, what they do, they often flout rules of French language. So, because French language simply does not allow that kind of a structure. English speakers routinely, quite often do not even follow the French language rules because in English, it is a lot more varied, a lot more information can be packed in.

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CONCEPTUAL TRANSFER

So, that was about these grammatical features and how they affected nonverbal cognition.

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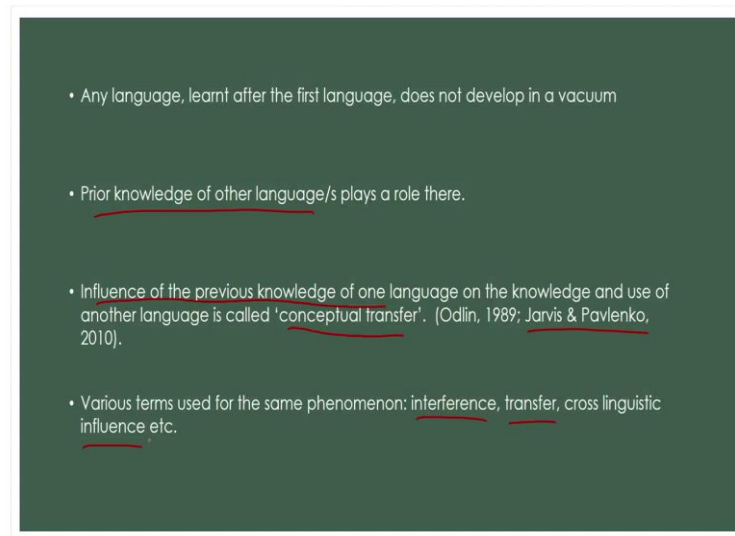
Another important domain of research within bilingualism, bilingual language processing, bilingual acquisition and so on, is the idea of conceptual transfer. Now, what is conceptual transfer? To put it very plainly, once when we learn a new language, after we have learnt already our mother tongue, whenever we learn another language, it does not develop in a vacuum.

So, there is already one language in place, it has the structure, grammatical structure, all the grammatical properties as well as the conceptual properties already in place. Now, whenever we learn another language after this, that is already a given system present, right. So, it is its not developing in a vacuum like the L1 develops.

Now, this has a very important role in case of second language. Second language be it, second language, third language, fourth language, whichever language comes after there is already a system in place. So, we will generalize it as a second language, but it is applicable for any language that is learnt after the first language.

So, what happens in this case is that, prior knowledge already exists and that will not sit quiet. It that prior knowledge will have an influence on the way the story goes ahead in terms of the second language, or third language acquisition. So, this is the influence of the previous knowledge of one language on the knowledge and acquisition of another language is basically what is conceptual transfer.

So, already the knowledge system, this knowledge as in in terms of concepts as well as in terms of structure, both. And thirdly, not which is also very important, the social aspect of using language. So, all these things are already in place, and all of them have an impact on the way the new language is learned, knowledge and use of the new language. So, that is basically what is called conceptual transfer.

Now, however, conceptual transfer, the term is quite new, it was it is attributed to Pavlenko. They coined it in 2010. However, there are many other terms also that have been used or the same phenomenon, some of them are interference, transfer, cross linguistic influence and so on.

So, the idea has been around for some time. The term that is used now is called cross-linguistic conceptual transfer.

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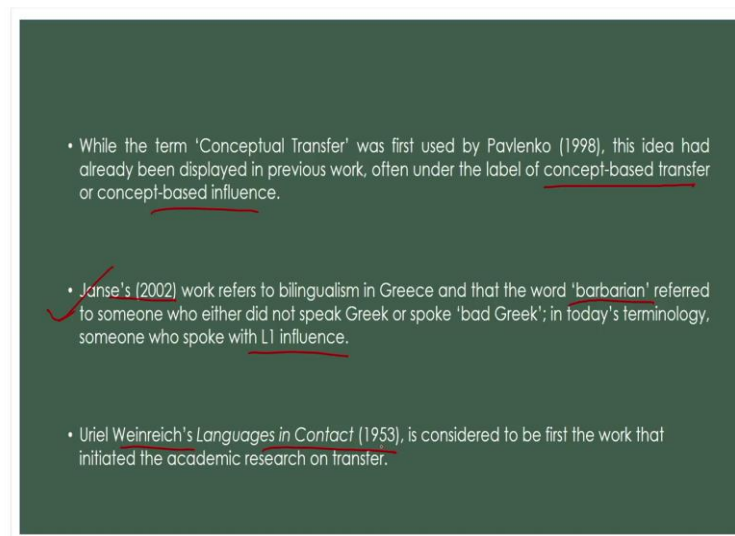
This goes back to quite a quite a long time, there are basically this they came under the level of concept based transfer or concept based influence, right. So, one of the oldest references to this kind of influence of the first language on the second is can be derived from Janse's 2002 work, where he describes how that bilingualism in Greek in Greece was quite common.

In the Roman Empire, in the Greeco-Roman Empire, the elite where often the often bilinguals and so much so that knowledge of Greek was considered a status symbol. So,
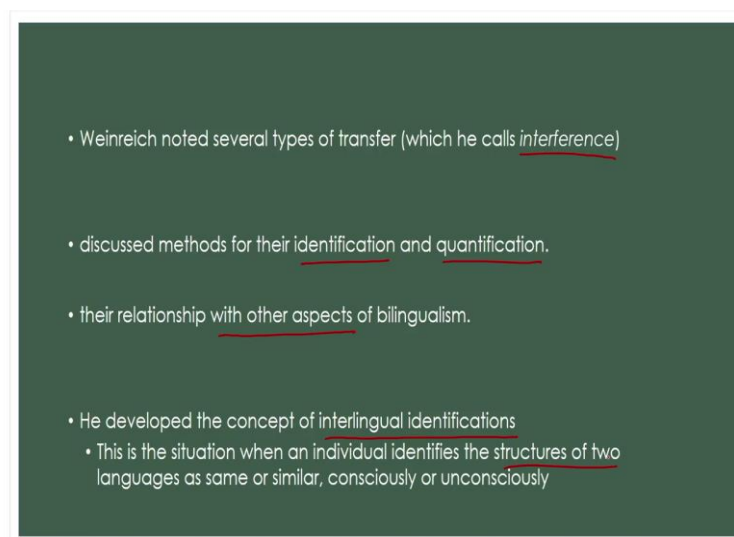
the elites almost always spoke Greek and the knew Greek philosophy. And not knowing Greek was considered a heinous, quite almost like a crime. We have talked about this before. So, the word 'barbarian' comes from there.

So, 'barbarian' in Greek referred to somebody who did not know Greek language or even if they knew they spoke it pretty badly. So, anyone who does not speak Greek or speaks bad Greek was a barbarian. So, bad Greek in today's terminology will be someone who spoke with L1 reference. This is what we get to know from Janse's work 2002. So, this is as old as the notion of cross linguistic influence has been around.

We all know somebody you know often we when we are learning a new language, we create interesting structures which do not exist in the target language. So, this which is no wonder that the Greeks as they were very proud of their heritage and, rightly so, had actually a word for people who did not know enough Greek.

In any case, so, one of the oldest studies academic studies on the matter goes back to Weinreich, Uriel Weinreich, all a linguistics students will be familiar with his work. So, his 1953 seminal work on 'Languages in Contact', this is where he first he is among the first ones to academically academic research was initiated by his work and he referred to this kind of transfers. He called them interference.

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So, transfer from one language to another was called Interference by Weinreich. And not only he had a theory on this this kind of he had a structured name, he had a and the idea put forward, but he also had the detailed discussion on the topic. So, he also discussed methods for the identification and quantification of the differences or quantification of the interference.

He calls them interference in the in learning of a second language. So, how much L1 interferes with the L2, he had theories for the identification of the same as well as quantification. Not only that, he even talked about other aspects of bilingualism. How, not only the structural properties of one language, but also the other aspects of bilingualism can have a role to play there. Very detailed study there by him. So, he developed the concept of what is called interlingual identification.

This is a situation where one individual identifies the structures of two languages as same or similar. It can be conscious or even unconscious. So, all of us when we learn a new language, it is automatically it activates our knowledge, we kind of compare it with our L1 and see ok, this is something similar and this is something different. So, that bit is that is done almost unconsciously by everybody who learns a new language.

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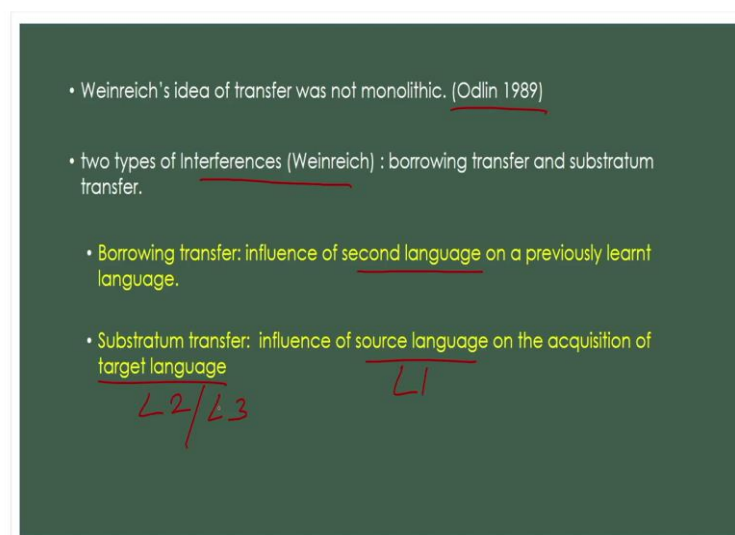
So, Weinreich had a detailed discussion on this. Not only that, his idea of the he was not talking about a one-way traffic in terms of interference. So, interference he was very

aware, he was quite clear on this, that the influence works both ways, right. So, this has been mentioned by Odlin in his book, in his publication.

So, two types of interferences that Weinreich mentions, one is called 'borrowing transfer' and the other is called 'substratum transfer'. Borrowing transfer is the influence of second language on a previously learnt language. In today's terms, it will be the influence of L2 on L1 and substratum transfer is the influence of source language, which is basically L1, on the acquisition of target language which is L2, right, ok like this.

So, second language, so, as far back as in 1953, Weinreich discussed two kinds of influences that can work in a in case of a bilingual. When the person is learning a second language, there are two ways of interferences that are possible.
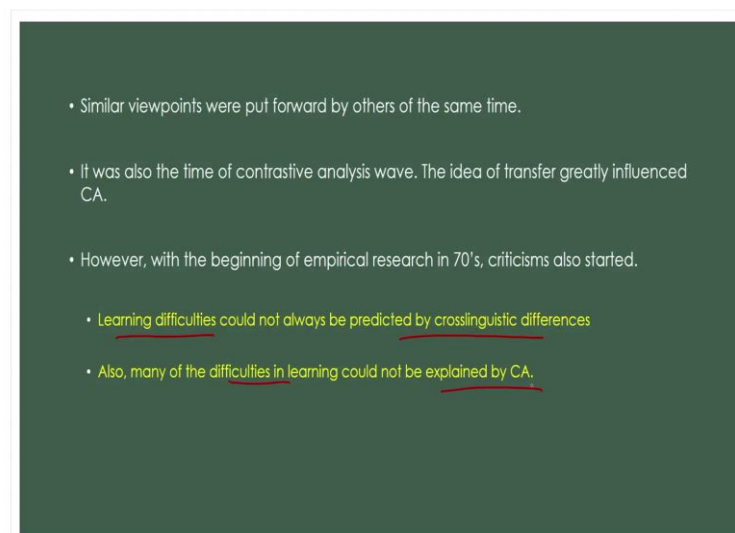
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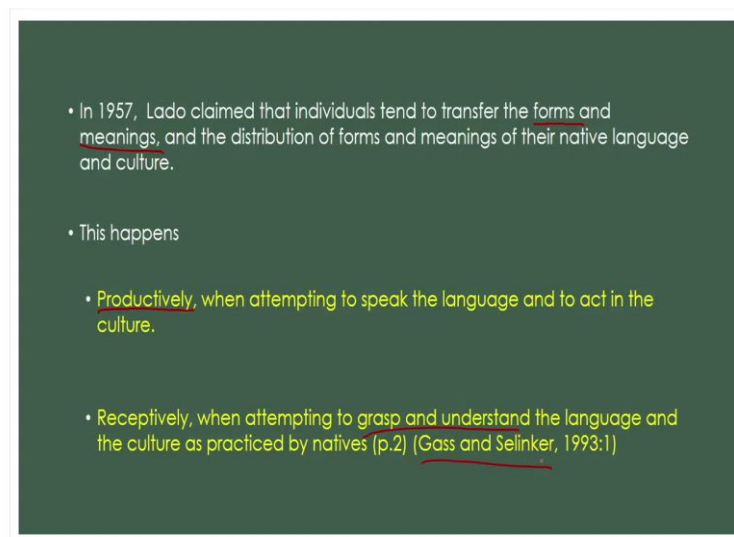
After this 1957, Lado claimed that individuals tend to transfer forms and meanings and the distribution of that forms and meanings. So, now, we will see how different researchers have pointed out different aspects of that transfer mechanism. That, there is a transfer is of course, already given, everybody, it was already well known.

Now, what are the mechanisms, what gets transferred in what way, there have been various takes on this. So, starting from Weinreich, moving on to Lado he talked about both forms and meanings. Not only that, but also the distributive structure of the same, that gets transferred.

How? And it happens in both ways, not only productively, but also receptively. Production and reception basically means the while you were speaking or versus while one understands, comprehends. This transfer happens productively when one person speaks in a second language and acts in that culture.

So, by speaking English and you know behaving like an English speaker that change and that transfer happens and also that transfer is possible when somebody is a receptive user of the language. Receptive user, as in when somebody is trying to understand, comprehend; grasp and understand the language and culture as practiced by the natives. This is what has been pointed out by Gass and Selinker, 1993.

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- Similar viewpoints were put forward by others of the same time.

- It was also the time of contrastive analysis wave. The idea of transfer greatly influenced CA.

- However, with the beginning of empirical research in 70's, criticisms also started.

  - Learning difficulties could not always be predicted by crosslinguistic differences

  - Also, many of the difficulties in learning could not be explained by CA.

Similar viewpoints were put forward by many others of the same time. In fact, transfer from one language to another in case of a bilingual, were a rather important area of research in the 50s. And this is also the time when contrastive analysis. Remember, we talked about applied linguistic take on language learning and applied linguistics takes on language learning, were heavily dependent on contrastive analysis.

What was contrastive analysis? Let us a quick recap here. Contrastive analysis looked at how language 1 and language 2 differed, what are the points of difference. And it was it was proposed that those whenever there are differences, the subjects, the learners will find it difficult to learn those concepts.
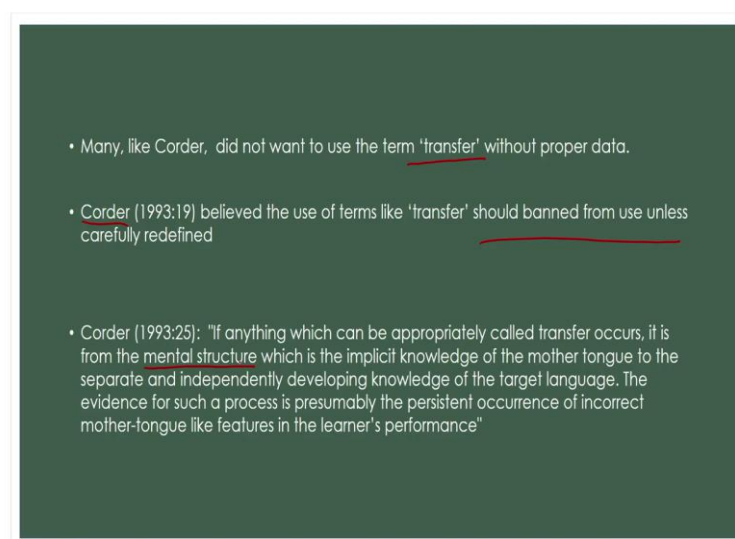
So, contrastive analysis was a very important indicator of language acquisition. So, this contrastive analysis as in the differences points of differences between two languages and combined with conceptual, combined with the transfer cross linguistic influence, they helped each other and these two ideas helped each other and together they contributed a lot towards second language acquisition, understanding second language acquisition.

However, the as times changed, by 70s, the more empirical methods took place in took the place of contrastive analysis and hence, a lot of criticisms also surfaced. So, some of the criticisms that I have noted here is that one of them was that learning difficulties could not always be predicted by cross linguistic differences.

Meaning that language learning difficulties are not only limited to cross linguistic differences, there will be differences, but that is not the only reason why somebody finds it difficult to learn a second language. There are many other factors. Those factors were being were beginning to get noticed around this time.

And also, many of the difficulties in learning could not be explained by contrastive analysis. So, this was a this was the situation after some in the 70's onwards. So, this was a very active field of research as you see.

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- Many, like Corder, did not want to use the term 'transfer' without proper data.

- Corder (1993:19) believed the use of terms like 'transfer' should banned from use unless carefully redefined

- Corder (1993:25): "If anything which can be appropriately called transfer occurs, it is from the mental structure which is the implicit knowledge of the mother tongue to the separate and independently developing knowledge of the target language. The evidence for such a process is presumably the persistent occurrence of incorrect mother-tongue like features in the learner's performance"
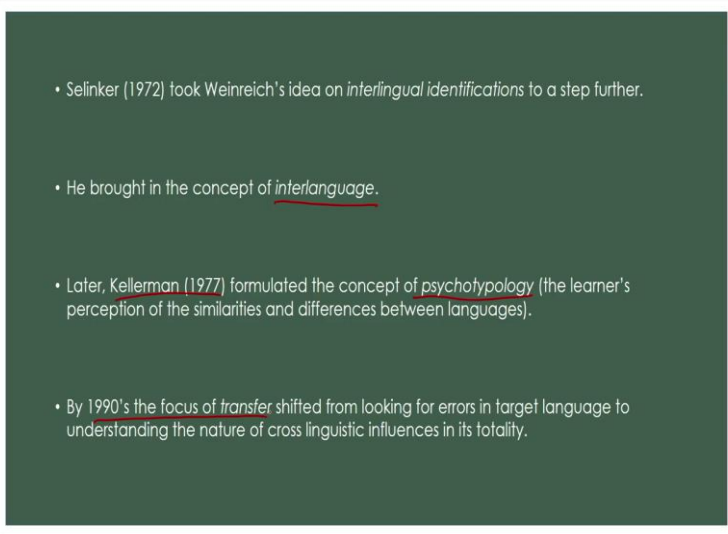
So, in the initial stages, yes, lot of cooperation between these two ideas and that helped understanding language learning, language second language acquisition, SLA, the field of SLA. However, new with new advent of new theories and advent of empirical methods, experimental methods, it was thought that it was mandatory, it became mandatory to prove and understand transfer far more clearly.

One cannot, could not really throw the word around anymore. So much so that Corder actually said that, he did not want to use the word 'transfer' just like that. He In fact, even says that it should be banned from use unless carefully redefined. What do you mean by transfer? There are so many aspects of it. There are lexical aspects, structural, various kinds of structural aspect, but that is not where language ends.

There are many other at conceptual level also, there are many layers of understanding. So, what exactly gets transferred and what does not? So, until and unless one gives a thorough refined idea about this, this should not be used was the opinion of Corder. In fact, he famously say that if anything which can be appropriately called transfer occurs, it is from the mental structure.

So, you see, we are going from linguistic structure to mental structure. By 90's, it was already a mental structure that they were talking about. Mental structure is implicit knowledge of the mother tongue, and that is what gets in transferred to the new language. But however, one needs to even look at the finer aspects of that.

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- Selinker (1972) took Weinreich's idea on *interlingual identifications* to a step further.

- He brought in the concept of *interlanguage.*

- Later, Kellerman (1977) formulated the concept of *psychotypology* (the learner's perception of the similarities and differences between languages).

- By 1990's the focus of *transfer* shifted from looking for errors in target language to understanding the nature of cross linguistic influences in its totality.
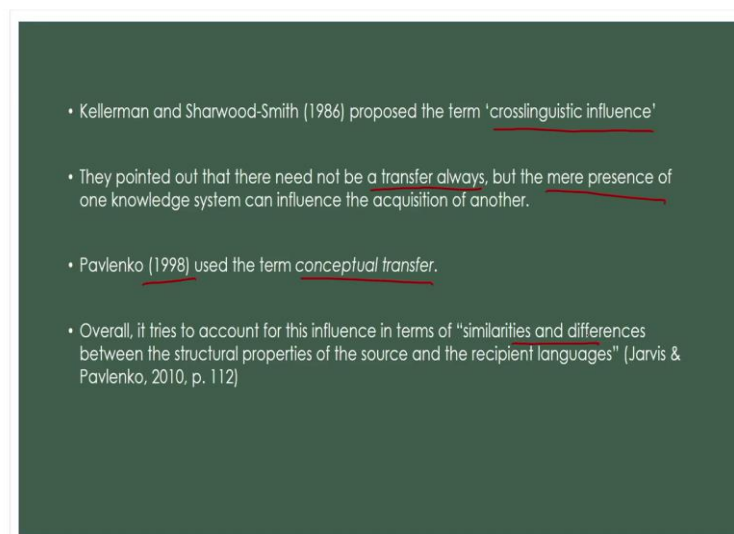
Now, Selinker in 1970's took Weinreich's ideas of inter-lingual identification and he brought in the idea of inter-language. The idea of inter language was heavily used by in in applied linguistics in second language acquisition, SLA, where when a person is learning a new language, there are stages of inter-languages. So, the person before, he gains proficiency in the second language, there is a stage called inter-language where he is. So, that is exactly what Selinker was talking about.

And then others followed. So, Kellerman formulated the idea of psychotypology, where the learner themselves, they have a perception of the similarities and dissimilarities of the different languages, differences between the languages. Now, so, by 90s, the focus shifted from looking at errors.

So, contrastive analysis was focused more on errors. The kind of errors the learner made while learning a new language because of the differences between the source language structure and the target language structure. So, error analysis was also a very important aspect of contrastive analysis at that time.

But however, as we have seen that over a period of time, newer ideas came in and the focus shifted or you can also say, that the focus became wider. So, the wider focus now took into account; the all the possible impacts that one language can have on another. Not necessarily only the errors, but any other kind of impact, right.

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- Kellerman and Sharwood-Smith (1986) proposed the term 'crosslinguistic influence'

- They pointed out that there need not be a transfer always, but the mere presence of one knowledge system can influence the acquisition of another.

- Pavlenko (1998) used the term *conceptual transfer*.

- Overall, it tries to account for this influence in terms of "similarities and differences between the structural properties of the source and the recipient languages" (Jarvis & Pavlenko, 2010, p. 112)

So, given all of these terms also change. So, this is called cross linguistic influence. This is to incorporate the both side of the story. So, influencing from one language A to language B, as well as language B to language A. Even Sharwood-Smith's work pointed out that even if there is no overt transfer always, but the very fact that the mere presence of one knowledge system can affect the acquisition of the other language.

And cut to 1998, the term conceptual transfer comes into existence. So, starting from interferences of Weinreich, going through various kinds of names and shift in focus of this entire practice, through cross linguistic influence and so on, finally, we come to conceptual transfer.

So, basically the idea looks at, accounts for, the influence in terms of similarities as well as differences between the structural properties of the source and the target language or as they call it recipient language.

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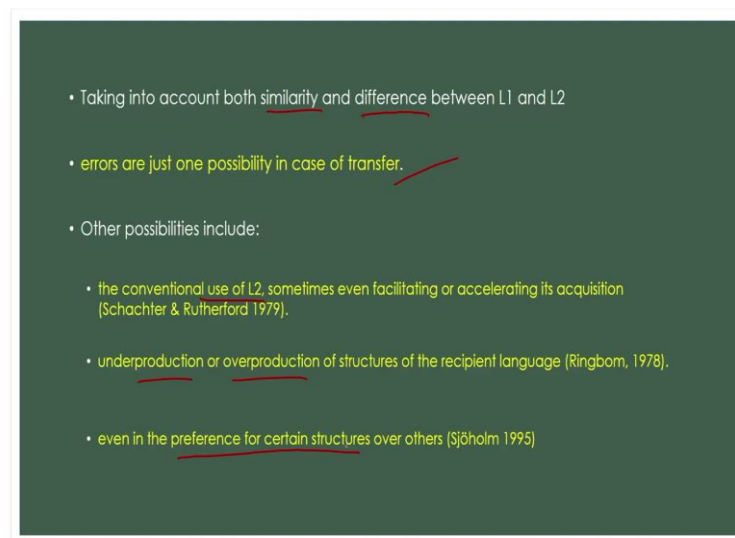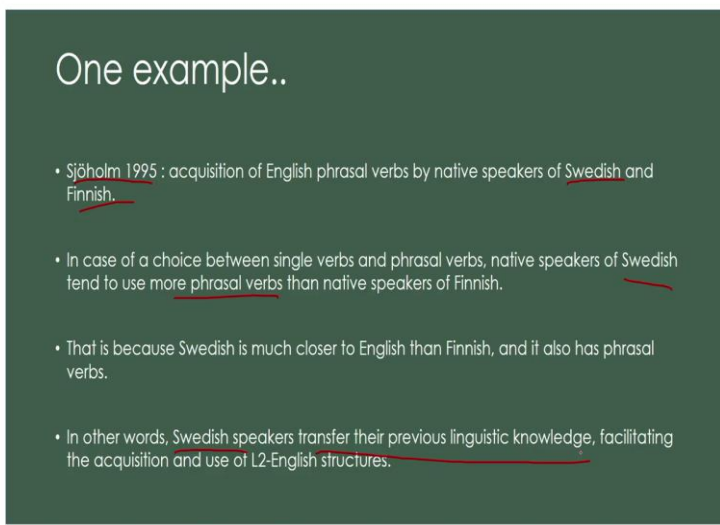
So, taking into account both the similarity and the difference, because it is not only differences, as we have seen, that sometimes the differences were focused, sometimes similarities were also talked about. So, today as things stand today, both similarities and differences between languages are of importance between L1 and L2. So, if you when you take that as a possibility, when you when you widen your focus.

There are many outcomes possible, errors are just one such possibility. So, errors of course, exist, even today they exist. But other possibilities are also there. One is the conventional use of L2, sometimes even there are facilitation, acceleration. So, help L1 also helps learning the L2 in some cases, when there are similarities, when languages L1 and L2 are similar, it might be helpful.

Sometimes there are other things like underproduction or overproduction. So, errors are part of production. When one speaks, there are there are errors that are made. But there could be underproduction as well, underproduction or avoidance when being conscious of the errors that one might make, the participants, the learners do not produce sentences, they will they that is the underproduction. Sometimes also overproduction. So, I mean all these possibilities exist, right. And sometime there is a preference for certain structure over others. Various kinds of possibilities have been put forward by researchers.

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So, for example, this particular study, this was on acquisition of English phrasal verbs by native speakers of Swedish and Finnish. Now, Swedish and Finnish are both are Scandinavian languages, but their structures are different, in terms of their similarity to English. So, in case of Swedish, this is this has more use of phrasal verbs. Finnish, however, does not use that much of phrasal verbs.

Now, the choice between if these people have to use, both Swedish and Finnish L1 speakers, when they speak in English, there has been a finding that Swedish people,

Swedish speakers, L1 Swedish speakers tend to use more of phrasal verbs than simple verbs, as opposed to the speakers of Finnish.

The reason being, Swedish both Swedish and English have phrasal verbs, whereas, Finnish has less of phrasal verbs, right. So, as a result of which, Swedish is closer to English in that sense. And that is why Swedish speakers are understood to be transferring their previous linguistic knowledge, right?

So, this in turn facilitates their learning of phrasal verbs in English language and use them more often as opposed to the Finnish. So, in case of Finnish, because their language does not use that much of phrasal verbs, they tend to use of them less, even in their L2. So, this is an example of how this works.

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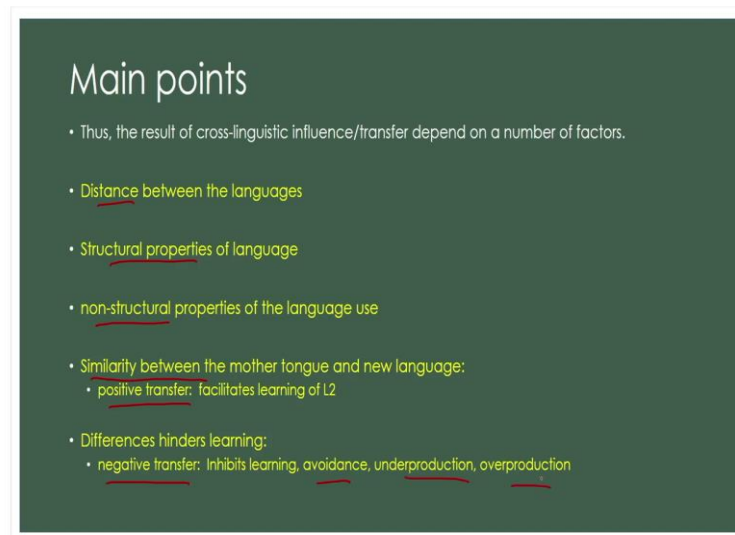
So, the main points, thus we have arrived at within this conceptual transfer. What are the main points that have to be taken note of? One is the distance between the languages, as in how similar or how dissimilar the languages are. Secondly, of course, the structural properties of the languages and non-structural properties. As I said, as I mentioned before, languages have a structural property, grammatical property, but at the same time, there are many other factors in case of a language.

So, the society, the individual and various things about the individual and the society, they are all integral part of any language. That also has to be taken into account every

time we look at, or we are thinking of comparing L1 and L2, and L2 acquisition processes in terms of conceptual structure, right.

So, similarity has been typically found to be a facilitator. So, if the languages are similar, it is easier to learn the L2. If they are different, it is slightly more difficult. As a result, there has been two different names given. So, in case when there are similarities between the languages, this is called, there are positive transfers, right.

So, transfers can be of two types. If the languages are similar, it helps in learning the L2 and hence, it is called, it is understood to be a case of positive transfer. But if the languages are different, hence, there is a hindrance in learning the new structures and this is where it is called a negative transfer. Negative transfer typically would be visible in terms of avoidance, underproduction, overproduction as well as errors, ok.

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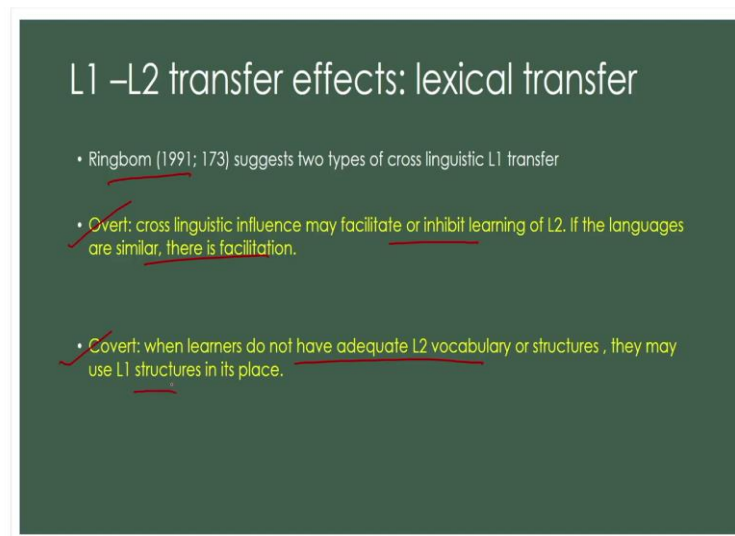
So, there are different kinds of transfers. So, most commonly we look at, we often we talk about, we study lexical transfers, lexical transfers as in transfer of words. So, Ringbom study in 1991 have talked about two kinds of transfer. One is the overt transfer, another is covert transfer. Over transfer is cross linguistic influence may facilitate or inhibit learning if the languages are similar, there is facilitation, something that we have already seen. So, based on all the studies, we have come to the few points.

And on the other hand, when the learners do not have adequate vocabulary, they may use L1 structure in its place. So, on the one hand, there are differences or similarities. If the differences are there, it will be difficult to learn. If they are similar, there will be facilitation.

On the other hand, sometimes there is the L2 vocabulary is not even adequate. So, in that case, L1 structures will take place, will take their place in the L2. So, these are the two things that Ringbom talks about.

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Similarly, there are two other types of transfer, lexical transfer and lexical borrowing. So, both will be coming under cross linguistic influence within the lexical domain. So, there are various names given by different researchers, most commonly utilized are lexical transfer and lexical borrowing.

So, lexical transfers means that learners assume identity of the semantic structure between the words of L1 and L2, right. So, what happens is sometimes, it is there is an semantic over extension. So, there are two words for a good example would be in the use of, in case of English speaking, L2 output of Malayali speakers. So, in Malayalam, the word for washing your hair, so, is the word for the translation equivalent of this in Malayalam. So, basically, it literally means head bath, bath of the head.

So, when they use English, in English produced by many Malayali speakers, rather than saying they had, they would wash their hair or they will shampoo their hair, they will use the word 'head bath'. Now, in English, there is no such construction. However, this is the semantic structure of the both the words are understood to be similar. And that is why this there is an extension of the L1 structure into the L2.

This is an example. Again, a lot of Malayalam speakers will not use, we in English, we say wear, saree is you know 'we wear a saree' for example. It is, however, 'wearing' is possible for various things. You know, clothes are worn, for example. So, you wear a dress, right? You wear a, one can wear a kurta. You can also wear a saree.

For, in absence of a better word, we often use the word, the word, 'wear' even with a saree. But it is very common for Malayalam speakers to say 'tie the saree'. This is again a semantic extension of the Malayalam counterpart into English language. So, you do not say wear, you say tie. However, there is yet another word that is also possible, that is called 'drape', right.

So, these are some examples of lexical transfer. Lexical borrowing' on the other hand' is more straightforward. This refers to the use of L1 word in L2 discourse. This is quite common in low-profession bilinguals. When they do not have the adequate vocabulary in L2, they will use the L1 word in its place. It is quite common. In fact, this is something you see in very often in Hindi movies, Bollywood Hindi movies, when the depict either Gujarati or a Bengali speaking in Hindi, this is exactly what they show them doing. So, they do not know the word. So, they will use the native L1 words into Hindi sentences. So, that is a clear cut, straightforward case of borrowing, lexical borrowing.

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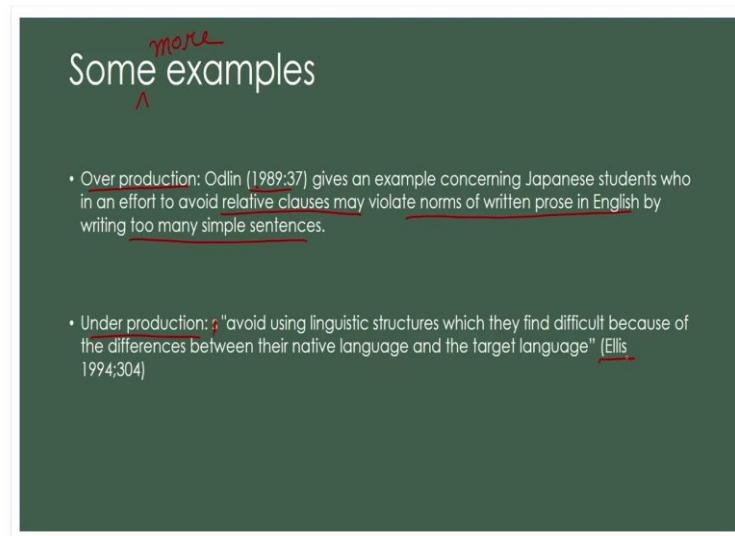
Other examples, some more examples of this kind of transfer is, as we have mentioned before, overproduction and underproduction. Overproduction has been, this has this is from Odlin's reference. He gives an example concerning Japanese students, who in an effort to avoid relative clauses, may violate terms of the written prose in English, because relative clauses are usually not used very often in Japanese language.

So, English language on the other hand has a extensive use of relative clause. So, they do not because they find it difficult, they find there are many errors in these domain. So, but they do is in order to in order to make up for that, they write too many simple sentences. In English, a relative clause can take care of let us say 3 simple sentences. But in case of Japanese English bilinguals, this is what we see. Overproduction of one type, because there is an avoidance of another type of grammatical structure, right.

On the other hand, you have underproduction as well. Underproduction is when, this has this has been talked about by Nick Ellis. So, avoid using linguistic structures, which they find difficult, because same thing, the difference between native language and the target language.

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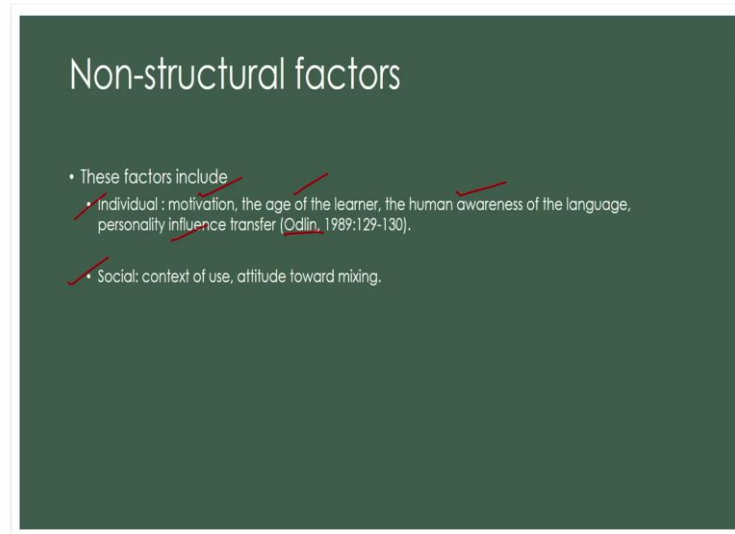
So, overproduction of an irrelevant structure and underproduction of the relevant structure, both are examples of influence of native structure on the new language, when there are differences. When there are facilitation, of course, we saw the Swedish case, because Swedish uses phrasal verb. It is very easy for them to use phrasal verb, learn phrasal verb and use them in English language, in when English is their L2, right.

Now, we come to the non-structural factors. Non-structural, as in non-structural factors of language. So, in this case, we have two levels, two layers of non-structural factors. One is the individual level, the other is of course, the social level. In case of individual level, there are, we have talked about this before, the age factor. In fact, in terms of language, second language learning, age has been a very important parameter to study.

So, in case of individual learners, motivation also has been, in second language, all of these are of course, relevant for second language learning. First language learning, in first language learning, these are already taken care of. So, motivation does not really matter. Second language, because one is learning it after, later on, for various purposes, so, motivation is an important factor.

In fact, in second language learning, literature in the applied domain or in the social linguistic domain, these are studied to a great extent. So, motivation of the individual learner, age of the learner, the human awareness of the language and the personality and

so on and so forth, all of these will affect the transfer. So, how much of transfer happens depends on many things here.

So, this is again from Odlin. And social, of course, the context of use, right? How the, for example, the language is a social phenomenon, this we use language in different contexts. Now, the kind of mixing that is allowed in a context may not be the same in another context.

For example, if you are in a formal scenario, in a formal social context, one cannot be, one is not allowed to or let us say, one is discouraged from using too much of mixing from L1 to L2. One has to try and stick to the only one language structure. However, in an informal setup, more mixing can be allowed. So, context of use plays a very important role as to how much of transfer we get to see in a L1, from in an L2 output, right.

And also attitude towards mixing, attitude of the society. Even in informal setting, the attitude might be a very important marker. Typically, informal settings will allow more of mixing, more freedom in usage of the language. So, whenever there is a lack of you know adequate vocabulary, one can use other methods.

But if the society is not very open about such mixing, even in informal setting, it will not be seen. So, all these factors are also crucial. Not only the linguistic factor, not only the grammatical factor, but also the social factor, non-structural factors like individual and social factors.

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So, there are few studies that we want to check. There is one study in 2016, by Turker. So, they show the effect of L1 conceptual transfer on L2 comprehension of figurative expression. Figurative expressions include metaphors, figurative way of speech, right. So, the participants in this were Native American English speakers were studying Korean, in a formal. So, English is the L1 here and Korean is the L2, ok.

So, the task was to provide L1 equivalents of 54 Korean metaphorical expression for various emotions like anger, happiness and sadness. So, these concepts had 3 different task. Task 1 was a decontextualized, out of context, just the metaphor was given. Only the isolated metaphoric expressions were given. Another was metaphoric expressions within a dialogue. So, some amount of context. And another was an elaborate context, metaphoric expression in an essay.

So, these are the 3 kinds of context that were given. And they were to, they had to give equivalents of these equivalence of various conceptual metaphorical expressions.
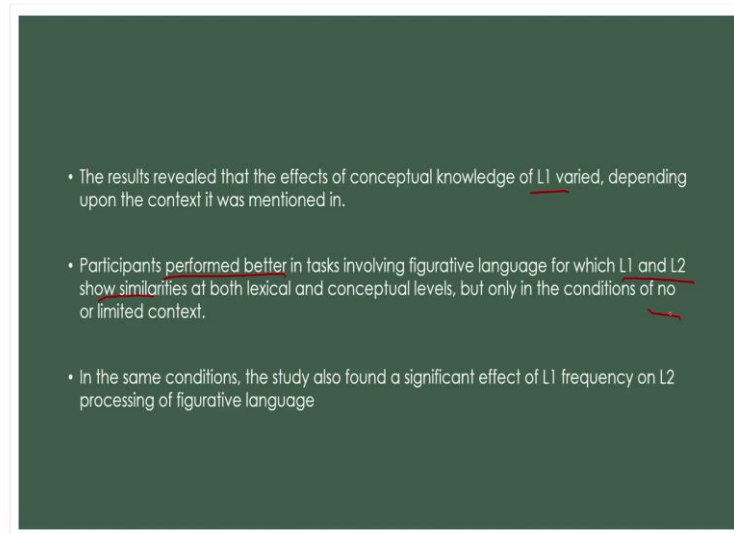
So, the results reveal that the effect of conceptual knowledge of L1 varied depending upon the context. So, how much of L1 conceptual clarity you had in terms of those metaphor also were dependent on the number of on the proficiency level. So, participants performed better in task involving figurative language in which L1 and L2 had similarities both at conceptual as well as lexical levels.

So, those kind of metaphors, which basically it means that those metaphors which were present in both L1 and L2, they did better, but only in the conditions of no or limited context. In the same conditions, the study also found a significant effect of L1 frequency on L2 processing. The same study, they found that frequency of L1 affected the L2 processing of figurative language, right.

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Now, we see another study on L2 to L1 influence there have been many. So, even though the literature is predominantly focused on L1 to L2 transfer, from 1950's onward even till now, the majority of studies have focused on how L1 affects L2. There are many reasons for this. For one, most of these researches focus on early stages of language acquisition. So, at this stage, influence is typically from L1 to L2, early stages of acquisition in the second language.

So, when one is beginning to learn, in the beginner stages or intermediate stages, by the time one reaches high-proficient stage, of course, L1's effect on L2 is very less. So, because most of the studies were focused on early stages, hence, more focus was on L1 to L2 transfer.

Secondly, a large number of these studies were on the, were focused on the immigrant communities. Migrant communities typically who have migrated to various western countries, most typically US. So, the focus here again was on how the communities can be helped in order to achieve their proficiency level into the host language and cultures.

So, the focus was entirely on helping them have high proficiency in L2. As a result, L2 was the focus. And whenever there was an influence of L1 to L2, it was noticed more easily, because L1 was not even being studied. So, even if there was an impact of L2 to L1, this was not, this was totally ignored.

And third was that the first, third is the belief that first language is more stable and robust. In fact, that idea has been around for a very long time. It is only recently that new findings have suggested that one can actually have better proficiency and more stable use of L2 in certain cases, but that is a very recent phenomenon, very recent finding.

Over in the historically, historically in the 1950s to till a decade back, the idea was that L1 is more stable and more strong. The stronger language, the more robust language. And hence, no, nothing will affect it. However, L2 because it comes in later, it will show more impact of the previous language. So, these are the reasons why we see less work on impact of L2 to L1, ok.

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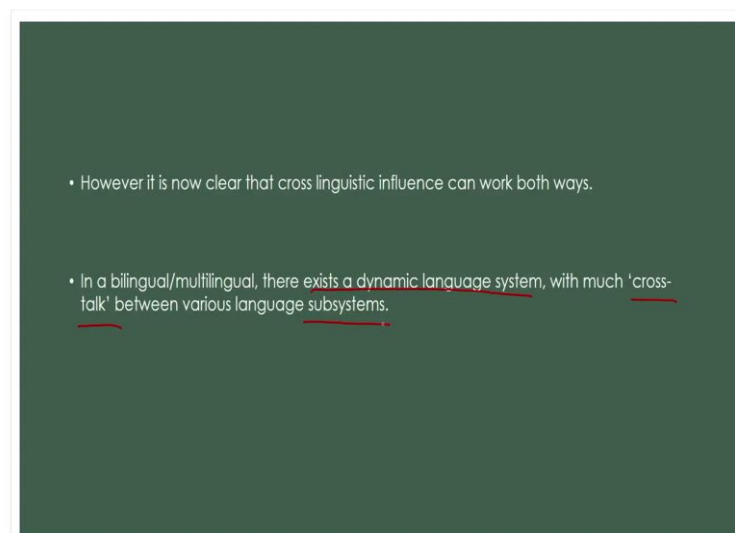
However, this this effect does exist and more and more evidence of it are now coming out. So, as a result, we now know that there is a dynamic language system. So, when a person achieves a certain amount of proficiency in L2, it becomes a very dynamic system. There is a there is a lot of give and take between the two languages and at various levels, which we will, of course, see in the course of these in the next modules.

So, and that give and take happens across, as somebody has said, this is there is a lot of 'cross talk' between various language subsystems. It is not no language, is an unitary, monolithic system. There are many subsystems and the give and take differs depending on the subsystem.

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So, keeping that in mind, there is a rather very well-known study by Pavlenko and Malt. So, they looked at this impact of L2 and L1. So, this was study or naming of common household objects in the in Russian and the speakers were Russian-English bilinguals. So, Russian was L1, English was L2, right. And they were bilinguals.

These bilinguals were divided into 3 groups. So, early bilinguals, childhood bilinguals and late bilinguals. Early bilinguals, who arrived in US at a very early age, from 1 to 6. Childhood bilinguals, they arrived a little late, 8 to 15 years of age. And late bilinguals arrived rather late between 19 to 27.

As you can expect, depending on when they arrived in the US, their exposure to English language has been different. So, somebody who arrived in early childhood of course, had a lot of time because they grew up grew up in the US. So, they spoke Russian at home and English outside all the time.

So, these are the 3 types of Russian English bilinguals they studied and the task was to name objects in their first language. Not in their second language, but in their first language. And then the objects were 60 images of drinking containers, glass, cup and various other things like this.

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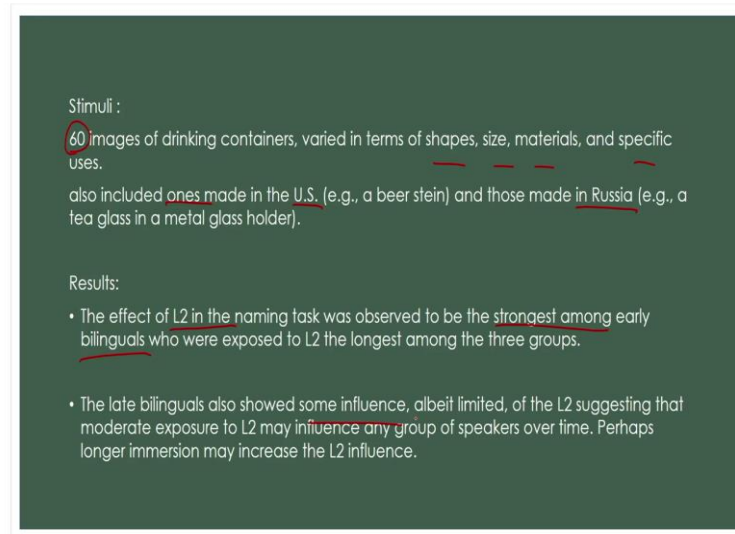
And these containers were different in terms of shape, size, material and specific use. In fact, there have been a lot of studies in terms of bilingual cognition, in object classification. So, what is called cup in one language, could be called glass in another language.

And a good example is the use of paper cups that we nowadays are rampant in all the tea shops, coffee shops, tea shops you find those little small paper cups. So, they are called cup, but if you look at the shape and they are actually glass, small glasses. And in fact, some languages actually call them glasses rather than cups.

So, the languages differ in terms of what is taken into account while naming it. While categorizing it as a glass or a cup for example, shape is one, size is another, material is another and also the usage pattern. So, depending on all these factors, objects are categorized and that is why they have used these kind of words and images.

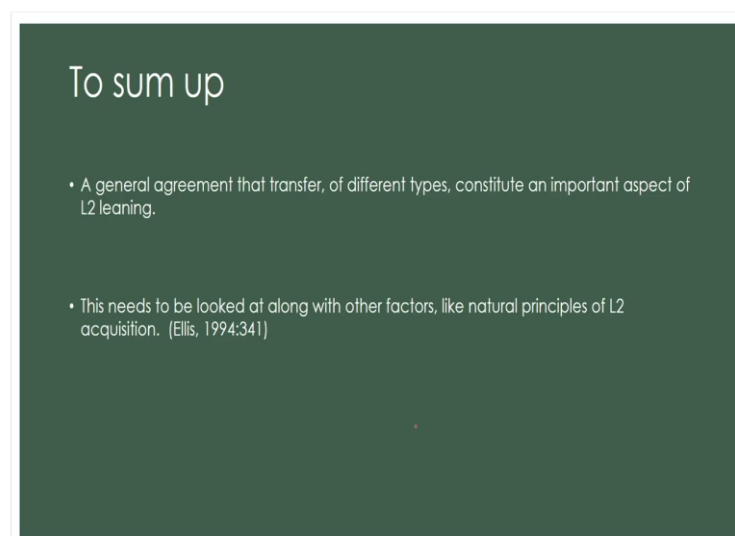And then they also included objects that are made in US as well as those made in Russia. Things that are typical of US versus things that are typical of Russia. This together they had 60 images. The results they found that effect of L2 in the naming task was observed to be the strongest among early bilinguals. So, early bilinguals are those bilinguals, those Russians who came to US at a very early age from age 1 to age 6.

So, those people because their exposure to English language, American English language has been rather long. So, it was expected that they will have an influence of their English language on the Russian. Remember the task was to name those objects in Russian, not in English. All of them were naming them in Russian. So, while they were naming them in Russian, they had a strong impact of the L2.

For example, calling the glass as cup, which is as cups because the paper cups are called cups in English. Late bilinguals showed also showed some influence, but comparatively less. So, this is an example of L2, second language affecting the first language. So, transfer happens both ways, right. Transfer happens from L1 to L2, also L2 to L1.

Because here in this case, in the Russian case, they were very high proficient bilinguals in English language, specifically, the early bilinguals are the ones who have had the largest amount of exposure. So, they have the highest amount of impact from the L2 to their L1.

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To sum up

• A general agreement that transfer, of different types, constitute an important aspect of L2 leaning.

• This needs to be looked at along with other factors, like natural principles of L2 acquisition. (Ellis, 1994:341)

So, to sum up in this segment, the general generally researchers agree that transfer exists. Transfer exists, however, it is not a monolithic sort of a thing. There are transfers that can happen both ways from L1 to L2, versus L2 to L1. However, it is it remains as a given. So, it is a very important aspect of L2 learning, second language learning. However, it needs to be looked at from different perspectives.

So, along with other, you know this needs to be looked at, not only structural properties, for structural properties, but also from the perspective of non-structural properties. Like the Russian English study, they looked at the non-linguistic factors, as in, how long they have lived in US and so on.

And while doing so, while we are at it, while looking at a conceptual transfer, other factors for language learning, other principles of language learning, language second language acquisition also need to be looked at. And together, they will give us the entire picture of second language acquisition.

Now, till here, things have, we have already noticed that we are moving slowly from structural properties of language, in terms of cognition, towards mental representation of the same. So, in the next segment, we will take up mental representation in terms of bilingual memory, and where we will discuss various theories about the same.