

Fundamentals of language Acquisition

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Lecture 030

Lec 30: Complex syntactic structures

Welcome back. We will start with Lecture 5 now. By lecture 4, we have looked at the beginning of the first structures of the sentence, sentence structure, and the first syntactic structure that children tend to learn. So we looked at the functional categories, content categories, and the basic syntactic structure, how the hierarchy works, and all that. So, now we will move on to slightly more complex structures with respect to their acquisition in childhood. So, starting with questions, questions as in interrogative sentences, in the case of English, question formation is not easy.

The reason we are talking about English is that, because of the initial studies, a lot of the studies focused only on English, and this is easy to follow for us as well. So that we look at the basic structure, since we are looking at the basic structures and the basic movements, and so on. So, we will stick to English for now. So, in English, question formation is not easy.

What it means is that it involves inverting the subject and the auxiliary verb. So, for example, from a sentence like "you can see it" to "can you see it?" the "can" comes first and the "you" follows it. So there is an inversion happening between the auxiliary and the subject. So this is an important thing that is part of English. So, this goes here, and this goes here.

So, this is the important part of creating a question. And then there is the, so this is, this is

a yes or no question, but then if you have a wh question in the case of English, then it is a slightly more complex kind of structure. So, this involves, what does that complexity involve? This involves the additional job of using interrogative words like who, what, when, and where. So, this is why we call them "wh" questions. So, the questions that start with a wh word, like who, 'who stole the book?' 'where did you go?' and 'what do you like?' are the kind of things we ask.

So, wherever we have a wh-question, we have the wh word at the beginning followed by the rest of the sentence. So, there is fronting of a wh-word that is also part of creating this kind of interrogative sentences in the English language. Now, the wh word is not always of only one kind; there can be the bare wh word as well as a full wh phrase that the English language uses. So, bare word we have already seen who, what, etc. Similarly, you can also have 'which one of the babies?' So, this is a full phrase, a full wh phrase.

So, 'which one of the babies is wearing a white or red shirt?' let us say So this is what will go in front. So the entire phrase will be fronted, and then the rest of the sentence will follow. And there is a, so as far as generative theory is concerned, when it moves, there is a noun phrase or a gap that is in another position. So 'what do you think "is in the box?" means is that there is a gap here. So let us say something, x, is in the box.

So, that x has moved here in the form of a wh-word, and hence there is a gap here. So, when there is a fronting of a wh-word, there is also a gap in the sentence in another position. Now, complex wh-questions involve both a main clause and a complement clause. So, in these questions, the wh word or wh phrase appears at the front of the main clause, and the gap can be either in the subject position or in the object position of the complement clause. So, this becomes a slightly more complicated matter.

So, this takes us to the domain of complex wh-questions, not simple wh-questions. An example of a simple wh-question would be, "What did you eat?" For instance, "What do you like?" and "Where did you go?" It is simple, but a complex sentence will be, for example, "What do you think happened?" and then there can be a relative clause, for example. So, those positions can be either the subject or the object position in the complement clause. So, the generative and the usage-based perspectives on these question formations are slightly different. So, generative linguistics typically postulates that the wh word has been extracted, as we just saw, from the gap and moved from there to the front of the question.

So, we have just seen that it was here, and then because it has moved, it creates a gap here, and then it goes to the front position. So, that is what it means by extraction. So, there is a

movement of the word from its previous position to the new position. Such questions are referred to in the generative tradition as long distance wh-questions or long distance dependencies. This has been studied extensively in the generative format.

Since long-distance dependency constructions are complex and children tend to get them right quite early in life, this has been taken as an example as proof of nativist theory. These are complex structures; "who do you think killed the tiger?" let us say. So, this kind of structure is not very simple, and because it goes through all these kinds of, you know, movements and various kinds of permutations and combinations, the fact that children tend to get them right quite early in life is proof of the nativist theory. However, on the other hand, usage-based theory postulates a slightly different understanding of how questions are formed and how wh-sentences are formed. They talk about a juxtaposition analysis, with juxtaposition meaning that children are probably using two questions and putting them together one after another; that is juxtaposition.

Because sometimes children's productions of LDD, which is long distance dependency, create questions with a wh-word at the beginning of both the main clause and the subordinate clause. So, for example, "what do you think what is in the box?" So, this gap—what do you think is in the box? This gap is often not mentioned; sometimes children use both of them. So, there are two questions put together, and thereby we have this. So, this has led scholars to propose the juxtaposition analysis. For example, they sometimes use this.

So, "what way do you think how he put out the fire?" So, this was not necessary. "What way do you think he put out the fire?" would have been fine, but sometimes children do use this kind of structure. Hence, the usage-based theory says that there is probably a juxtaposition that they are doing rather than depending on a movement. So, there are two different questions that they put together; that is the idea. So, this can be produced by simply juxtaposing two independent questions: "What do you think?" plus "What is in the box?" or an independent question and an indirect question.

So, "what way do you think? plus "how put out the fire?" So, this is what the juxtaposition analysis of question formation is. So, juxtaposition analysis comes from the usage-based theory; on the other hand, the idea of movement comes from the nativist theory. These are the two ways of looking at them. So, one of the most important scholars in this domain is Thornton, and some of his examples I have quoted here. So, "what do you think what's in here?? This is by a child named Pieter, who is two years and ten months old.

"What do you think what babies drink to grow big?" So, these are the things; these are

some of the examples that come from his data. So, Umbridge and Lieven remarked that wh-questions like the above could be produced as "What do you think?" plus "What is in here?" So, however, this theory has not been accepted very widely because of the fact that children do not generally create questions like "What do you think what does Cookie Monster like?" So, whereas this is not very uncommon, this is not typically common. So, what is happening here is that the subject position or the object position in the clause is what the problem is here. So, in the examples before, 'what do you think what is in the box' versus 'what do you think what Cookie Master likes?' So, there are structural differences, and while the first one is kind of more common among children, the second one is not. So, based on that, could medial wh-questions with object extraction, such as the previous example, be composed using an independent question and an indirect question? So, what do you think? "Do you know what Cookie Monster likes?" Can it be like this? So, what do you think? Do you know what the Cookie Monster likes? Is it this kind of structure? But this argument also has problems.

The main problem here is that the difference between the subject and the object position is that it is not convincing to analyze children's medial WH questions involving extraction from subject position in one way and from object position in a different way. why is it different here, because the do form has to be accounted for if we have to make two questions out there. So, in the case of the subject form and subject position, you need a different analysis for object position, a different analysis that does not seem to really work very well. So, it has not been very widely accepted. So, those are the two different positions with respect to forming the question sentences, the wh-questions, and wh-sentences.

Then comes our negative sentences, another slightly complex process. Again, we will stick to English examples. The syntax of English for forming negative sentences is also quite complex. It requires the use of auxiliary verbs, like the question formation that we just saw. So, you have to come in somewhere, and then the auxiliary inversion, and so on.

So, the negation, negator must not follow the first auxiliary verb, and it is often contracted onto it. So, I am eating; I am not eating. So, it cannot be "I am not eating"; here it is, this is coming after this, right? So, similar to questions, if the positive sentence does not have any auxiliary, the negative sentence will need one. It is not necessary for the positive sentence to have an auxiliary, but even if it does not in the negative, there has to be an auxiliary. So, go away; this thing gets inserted.

So, 'do not go away'. So, you cannot simply say 'not go away'. The auxiliary has to come into play. The only exception, however, is when the sentence has a simple copula, in which case the negator follows the copula. So, 'Rani is nice'; 'Rani is not nice'. 'I was happy', 'I was not happy' right? so this is the only exception in case of English, before acquiring

auxiliaries children have negative sentences like this.

So, you do not have the auxiliary is not yet here. So, it should be that 'Kavya does not like broccoli', but before they have understood, they have acquired the auxiliary, this kind of structure. So, there will be no, just a no there before the main verb. So, 'no like broccoli', he not little; he is not little like that

So, this is quite common, as well. Auxiliaries appear between the ages of 2 and 3 years. The comprehension of complex negative structures is acquired late, from 4 years onwards; that is what some scholars have reported. Then comes our passives. The nativist approach to passive is governed again by movement because that is one of the fundamental aspects of syntactic operations that is what movement is in the various kinds of processes. So, even passives are created through movement.

For example, 'the rock star is being chased by a fan'. So, the fan is chasing and is being chased. So, you have a movement out there again, which is one of the basic building blocks, and on the other hand, the usage-based approach, of course, understands it slightly differently than with the previous structures as well. So, as far as the usage-based theory is concerned, if you recall, usage-based theory accounts for the fact that children go from simple structures to complex structures. Because the idea is that once they have mastered the simple structure based on more and more input, they are able to create the complex structure.

On the other hand, the nativist approach says that the entire structure is in place from the very beginning. All the problems that the children might exhibit are due to other reasons, but not to linguistic reasons. Anyway, as per usage-based theory, this is how the stages probably are. So, beginning with a simple adjectival passive, 'it is broken'. And then gradually they will be accruing lexically specific formulas like "the x was broken.

" So, first it is broken that it is broken or was broken; then they will gradually create the structure by the y. So, x was broken by the y and finally incorporating the more abstract constructions. So remember we talked about this: starting with some simpler parts, eventually getting more and more complex, and after a period of time, they understand they are no longer dependent on the lexical entries but grasp the abstract notions. So this is when the abstraction happens, and this is how they get the formula in their heads. So 'X BE get verb by Y'; this is the formula.

Now, once they have gotten the abstraction, they can create an unlimited number of constructions like this. So there was a very well-known study in which they had elicited this; this is an elicited production study, not spontaneous speech. Elicited speech reported full actional passives with by-phrases by the majority of the children under study. So, in this data, they had 32 English-speaking children who took part in the experiment; out of them, 29 could produce the by-structure in the case of an actional passive. So, for example, the horse is seen by Donald Duck, and the horse is heard by Donald Duck.

However, other kinds of passives are less common among children under 5 years old. So, actional passives are learned before the others. Relative clause, then, is a modifier that expresses a proposition about the noun phrase it modifies. So, 'the boy fed the elephant that blessed the locals'. So, this is a very common sight in some of the Indian states, be it Assam or Kerala, where elephants are seen blessing the local people.

So, the boy fed the elephant that blessed the locals. So, this is the relative clause for us. The nativist account anticipates the early emergence of relative clause structures both in comprehension and in production. The reason is that they are understood to be again because the structure is already embedded among them. So the boy fed the elephant that blessed the locals; again, we have the gap here, so the elephant blessed the locals because, by this account, all varieties of relative clauses involve syntactic operations.

That is what we have been seeing since the previous examples, including movement. So this is what the boy fed the elephant again; there is a gap, and there was a component here which has been replaced by this is how the structure goes: this is the nativist account. Children even younger than 3 years old produce sentences with relative clauses. We have data in the domain; actually, this is a domain that is very rich in data. The one reason why I have not added all that is because it will make things a little more lengthy.

So, in order to stick to the timeline, we are not using too much data, but I will add some of it in the appendix; I will add some supplementary information. Because these are things that have been studied widely and there is a lot of literature on each of these, I am just giving you the basic ideas, the fundamentals of it. So, using an elicited production technique that was proposed by Hamburger and Crain, this other group elicited relative clauses from 20 Italian-speaking children ranging in age from 2.

8 to 3.11 years. Nine out of 20 children produced relative clauses in all the trials, and almost all of them produced at least a few such clauses, if not all, throughout the trials, but at least in many of those trials. So, that means even the youngest children in this group, who are

2.8 years of age, could produce quite a good number of relative clauses. So, not only the children on the other side, let us say 3 years, 3 and a half years old children, but even the youngest of the group could produce a good number of relative clauses. So, naturally, this provides proof of the nativist theories, which is how it is understood.

However, again we are also looking at the usage-based account here. So, contrary to nativist claims, children's comprehension of relative clauses is not met with equal success across all varieties of relative clauses because there are different kinds of relative clause structures. So, the usage-based account points out that children's comprehension is not always similar in all of those. So, some studies control for task demands and have better results; what happens sometimes in the experimental paradigm is that the task demands might have an impact on the results that you get. So, the children not having adequate comprehension of relative clauses may not be due to the relative clauses, but because of the task demands, due to the kind of task within which this was embedded.

So, that was controlled by many follow-up studies, and then they found better results with respect to comprehension. Still, children under 5 years did not display adult-like performance; why are we talking about adult-like performance? Because this is what the nativist theory says, that children actually have the entire structure already, they understand the movements, they understand the syntactic operations, and hence they have the adult-like capability already. So, on the other hand, we also have some data pointing out that five years ago they may not have had an equal amount of output. So, overall, the nativist account anticipates that children should be equally adept at understanding or producing all types of relative clauses. In fact, early comprehension studies reveal that children do have more difficulty with some types of relative clauses than others.

So, data takes us to that part, as well. Usage-based approach answers this through a proposal for the gradual development of different kinds of relative clause constructions. So, the nativist account anticipates that they will understand and produce all kinds of relative clauses from the very beginning. However, we do have some proof that this is not the case; some of the structures appear before. So, there is some more difficulty with some types of relative clauses compared to others. So, the usage-based account, like many other domains, has tried to answer this through gradual development.

So, the main point of the usage-based account is the gradual development of relative clause constructions, like many other constructions. So, starting with simpler ones and gradually going to the more complex ones. So, that is how they have been developed; they have analyzed it. So, based on the properties of the input, they go from simpler to more complex structures, but that is the gist. But largely, the larger amount of data typically shows that children are actually capable of comprehending and producing many of these complex

structures; of course, there are contradictory examples.

But at the same time, we do have a lot of data from various groups studying that children do master various complex constructions pretty early. So, to sum up what we looked at in this module, we discussed, in brief, that this is just one module devoted to syntactic structure acquisition among children. So, we discussed everything briefly. So, we looked at various theories and many different theses regarding the acquisition of syntax; we looked at the stages of development from one word to two words and then to more complex structures, and we also saw some of the constraints.

So, this is where we will end this module. As I said, some of the supplementary data will be added when you get the supplementary material as well. So, that I will add some data from different languages around the world on some of these mechanisms as well as some of the movements and operations as well. So, this is where we end this module. Thank you.