Fundamentals of language Acquisition

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Lecture 017

Lec 17: Theories

 Welcome back. We will start with lecture 2 now, where we are discussing the acquisition of morphology by children, first language acquisition, and how inflectional morphology is acquired by children through stages. Now, in the previous lecture we looked at, we discussed what inflectional morphology is, what the different types are, the different kinds of grammatical features that inflectional morphology reflects, as well as how they can be, how languages may differ, and how the structural properties might differ. Sometimes they might be in prefixes, suffixes, infixes, or other different kinds. And now we are at the stages of development by children of children, and with respect to those stages, we also have theories as to how this happens, what kind of errors children make, why they make those errors, and so on. So, to start with the errors, when we try to understand how children learn their inflections, the first thing that comes to mind is the errors that they make.

 There are various kinds of errors when they start off on this journey. They have been called omissions and commissions. Omission basically refers to the dropping of inflections. So, in the words, often only the bare words will be used, not the ones with the inflections, and this happens more with the newly acquired words as opposed to the older, previously learned words.

 So, the words that they are now familiar with, they know. So, they tend to use the correct ones, but often when they learn a new word, they do not use the inflectional marker. So, that is the case of omission in the acquisition of inflections. And then comes what is called the commission using regular inflections for irregular words, nouns, and verbs. So, some of the languages of the world have irregular nouns and irregular words.

So, English and Italian, for example, have irregular words, both nouns and verbs. So, which means that they do not take the regular general pattern of inflection to mark various kinds of grammatical properties, be it tense, be it number, or be it whatever. Different kinds of things might be numbers, might be reflected differently, but that is when they make mistakes because they use regular inflections with irregular words. So, this is also the domain of what we call overgeneralizations. Now, this is nothing new; it has been studied for a very long time.

Rousseau, in fact, in one of his texts, mentions that at first, children have, so to speak, a grammar suited to their age, a grammar whose syntax contains rules more general than ours. And if one pays close attention to their language, one is amazed at how they follow certain analogies. So, this is basically what we are arriving at: the use of regular markers for irregular words. So, this goes back all the way to Rousseau. Berko took it forward with the famous wug test.

In 1958, Berko carried out an experiment with children to see if they understood the metalinguistic property of using inflectional morphemes. But basically, do they know the rules? Have they figured it out? Have they figured out the rules? So, this was a very interesting study for the time. She showed children 5 to 7 years of age figures that look like birds and wanted to figure out if the inflections and their words could be used on the nonsense words by the children. So, if the children have understood inflections and if so, whether they use them with the nonce words. So, the test was like this: children were presented with small, unfamiliar pictures of bird-like creatures, and they were told.

So, there was a picture shown; I have the picture in the second. So, this is a wug. So, they will be shown a picture like this and they are told this is a wug, and then there will be pictures of two of them followed by a picture of two of them, and then they will say now there are two of them. There are two, and then the experiment will wait for the child to fill in the blanks. So, basically, the child is supposed to say that there are two wugs; that is what they were looking for.

So, this is how it went. And then that this was basically a test of morphological awareness in English. Results showed that 5- and 7-year-old children had productive knowledge of the inflections in this case. So, one wug, two wugs, so simple thing about. So, they say now the wug is something that does exist, but it kind of resembles a bird.

So, they wanted to see if they understood this property as a general rule and then applied it to a new word, a novel word which is actually not a word. But for them, it is a novel thing, and whether they are able to apply the grammatical rule or not, they found out that

they do. So, the idea was that the take-home lesson from this experiment was that children must have abstracted the rule by this time. By the time they are 5 or 7 years old, they must have abstracted the basic principle that applies in the case of numbers in the English language; that was the idea. So, based on these various findings, we have different   theories.

We will look at nativist theory first, and then we will talk about the constructivist theory. Nativist theory, as we all know, talks about the innateness hypothesis that language, the basic grammar, the universal grammar, is innate in all of us. So, the understanding of the fundamental grammatical properties will help children acquire the inflections as well because they have the fundamental root grammar already in place. So, this will be helpful even in the case of inflections. So, the innate grammar guides the child to know that language   may   use   inflection   to   mark   certain   grammatical   features.

What they need to figure out is whether their language marks that grammatical property or not. So, for example, if their language marks tense, So, in an innate grammar, we will have the information that languages may use inflection. And the tense, let us say, is an important criterion to be marked. They simply have to figure out whether their language uses it or not. And then if it does, then how? So, once this knowledge is acquired, children   can   generalize   across   words.

So, once they have understood that yes, this language does use the property of tense marking through an inflection, then they will be able to generalize across all the words. However, there are errors that children make in inflection marking for quite some time; it is not that they get it immediately. For the innateness hypothesis, the idea is that all children are born with an underlying grammar. So, they should not be making mistakes. So, in that case, the idea that they figured out the whole thing immediately does not really work   because   there   are   errors.

So, here comes the idea of maturation. So, within the nativist approach, the idea of maturation is one important concept that has been proposed, and there are many approaches within the maturation theory. But we will look at one of them, which is called the agreement-tense-omission model, or in short, ATOM. This is a model within the maturational hypothesis, which again is part of the innateness hypothesis. So, this model basically suggests that errors occur due to competition between two different constraints in   a   child's   grammar.

The grammar is already in place that we must remember because it is innate. So, there are two different constraints that are kind of opposing each other, and because of these two constraints, children make errors. So, the baseline is like this: if grammar is innate,

and children automatically have access to it, then they should not make mistakes. However, mistakes they do make, and now how do you account for those mistakes if there are constraints? What are the constraints? Let us see, constraint number 1 is that tense and agreement inflections must be applied. So, this is constraint number 1: the tense and agreement must be marked in the language because these are important criteria.

So, this constraint basically guides the child because the innate grammar is already there. It guides the child to understand that he must apply inflections in sentences, specifically in the case of, let us say, tense and agreement markers. Now, simultaneously, there is another constraint, which is constraint number 2, the unique checking constraint (UCC). This prohibits the child from checking items against more than one category. So, with this stops basically this prohibits the child from checking those categories like the infection   marking.

So, this results in the child obeying one constraint or the other resulting in errors. So, two constraints are working at the same time in the child's mind. Sometimes the child obeys constant number 1, and sometimes they obey constant number 2, resulting in a kind of error. So, that is why sometimes they do not mark the inflections correctly. So, if they are not marking, it is because sometimes they tend to use only the bare form.

So, if they are using the bare form, that means they are now obeying constraint number 2. If they are using the morphemes correctly, then it is obeying rule number 1, constraint number 1. So, of course, every theory has some evidence in favor of it and some evidence not in favor. Let us look at the evidence in favor of it first. This theory explains why children tend to use bare forms and the infinitives in English and German.

This is a very common feature in the initial stages of language acquisition among children when they are beginning to use short sentences, using bare forms or sometimes infinitives only. So, this has been reported in English, in German, and so on. So, according to this theory, it is very easy to explain why it happens. So, the errors occur because they obey the UCC and thereby omit the tense and the agreement marking. Therefore, they are sticking to the infinitives or the base forms of the words.

Secondly, this theory also explains why children may produce both correctly inflected words and errors, because when they are making errors, it is often reported in the literature that their errors are not consistent across the board. Sometimes they may use the inflections correctly; sometimes they may make errors. So, how can both happen at the same time? This is a serious question for theorists to answer. So, it seems that this theory can answer that as well. So, the correctly inflected form appears when the child obeys the apply tense and agreement rule, and errors occur when the same child obeys the do not

apply   constraint   of   the   UCC.

So, if they are obeying the wrong constraint given the scenario, then it is possible. If they are obeying the correct constraints given a scenario, they will get it correct. If they are obeying the wrong thing, then they will make a mistake. So both of these, because both possibilities exist in this theory, so both kinds of output are possible at the same time. Now this happens before they have figured out the entire pattern of the language.

Finally, this also explains the error of case marking. This is a kind of slightly roundabout way of explaining, but they have explained it this way: that case markings are connected to the subject-verb agreement. Now, if agreement marking is missing or agreement marking errors are still present in the child's particular developmental stage. Then, automatically, case marking errors will also appear. So, this theory seems to take into account the bigger problems of children using inflection in the very beginning in the initial   stages.

However, there is some evidence that does not support that as well. There are some problems; for example, there are some errors that this theory cannot explain. For example, subject-verb agreement errors involve incorrect verb inflection in terms of the subject. So, they are using the inflection; it is not as if they are not using it. So, the theory talks   about   either   using   it   or   not   using   it.

But they do not talk about the wrong usage of the inflection. So, in the case of the third person. It should not be "the dog is barking"; it should be dog, only dog, but in singular form. In this case, they are using it, but if this is how they are using it, then this is an ungrammatical   construction.

This is also possible for children to use. So, they are using inflection, but they are using it in the wrong way with respect to the subject in this case. So, according to this theory, if agreement and tense are applied, they appear in the correct form according to universal grammar, which underlies innate grammar. If they appear, they appear in the correct form. If they do not appear, it is because of the UCC. But if they appear in the wrong way,   then   this   theory   does   not   really   seem   to   have   an   answer.

So, examples of such errors have been reported by many scholars; for example, this 1998 study reports on errors from various languages of the world. Now, there are debates about whether such errors occur before the child understands which morpheme to use because of the cross-linguistic validation of this kind of problem, resulting in errors where they use inflections but in the wrong way. Now, because of this data coming in, the person who proposed the ATOM theory has said that these errors probably happen because the

child has not yet understood which morpheme. They understand that inflections have to be there, but they have not yet figured out which morphemes to use.

So, that is one way to answer this problem. The others have talked about whether it is prevalent, even after they have started using the correct inflections in some cases. So, you need more different kinds of answers for that. So, one answer is, of course, that this is probably because they have not figured it out, but the other case is that it is prevalent even after they have started using current inflections in some cases. So, this has been reported by Rubino and Pine. So, they report this finding from a particular 3-year-old child   learning   Brazilian   Portuguese.

For this child, the case was very interesting because he has understood inflections and is able to use them correctly in most cases. So, the overall agreement error rate was very low at 3 percent. However, in one particular case, that is of the plural verb inflections, the errors were very high at 28 percent. Now, this cannot be answered by the ATOM theory because, again, as I said, either they have understood or they have not understood. So, they either constrain 1 or constrain 2, but how can they do so if the error rate is only 3 percent? That means they have already figured out what morpheme goes where.

But, in only one particular case that involves plural verb inflection, they are not able to get it all correct all the time. So, a 28 percent error is quite a high error rate. Also, sometimes infinitive errors do not follow the predicted patterns. As per ATOM, for example, correct or incorrect use of inflections does not depend on the verbs per se, as we just saw. So, inflections, if you get the inflections correct, you will get them correct everywhere.

Similarly, certain verbs, if you have understood the verb inflections, will be applicable to all verbs. It should not depend on the type of verbs that you are using. So, we do find evidence that the children make mistakes with specific verbs and do not make mistakes with another set of specific verbs. So, there are reports of some verbs accruing more errors compared to others; this is also evident. For example, in Russian, Dutch, and French,   errors   are   more   common   in   eventive   verbs   than   in   static   verbs.

So, these are the two different categories of verbs; children tend to make more mistakes in eventive verbs as opposed to static verbs. This is also a problematic case when we are discussing and trying to understand inflectional morphology through atom theory. Then Wilson and Pine also reported that English children are likely to produce correct inflections in pronouns more than in nouns. So, if it is about pronouns, they are more likely to use the proper forms, like "he eats," "she eats," "they eat," and so on. But in the case   of   the   noun   "the   dog   eats,"   there   are   more   mistakes.

So, that is another domain. So, whether it is a verb, different kinds of verbs, or different kinds of nouns and pronouns, the error rate might differ. These are the situations that the theory cannot take into account. Similarly, there is cross-linguistic variation as well. So, ATOM predicts an all-or-nothing sort of approach to error. So, if the constraints are properly in place, you will get it right.

If they do not, then you will not get it right. But it does not say that some languages will have more problems than other languages. So, that is another domain. So, some languages may show more errors while others might show fewer. Some examples have been provided in the literature. So, English and Swedish attract a lot of errors, whereas Dutch, French, and German have a moderate rate of errors, and then Spanish and Italian have very few errors.

Now, this is another problem, which is the cross-linguistic variation that again has issues with the theory. Then comes the nativist theory of parameter setting. So, first, both are nativist theories; the first one is the ATOM theory, and now we are talking about another theory, which is that of parameter setting. Parameter setting comes from the principles and parameters of Universal Grammar. So, universal grammar has two important components: one is called principle, and the other is called parameter.

Principles; children are equipped with both. So, when you are equipped with your innate grammar, that means you are equipped with both principles and parameters. So, principles are basically the set of rules that are universal and apply to every language. For example, you might say that every language has nouns and every language has verbs; these will be the basic principles. Now, parameters will be those that are language specific properties.

So, these are the values that are set for language. So, let us say you can turn certain things on and off. For example, language X has classifiers, while language Y does not have classifiers. So, for language Y, the classifier parameter is switched off; let us say something of the sort. So, parameters are language-specific, which is based on the child's input. So, the kind of input that he or she gets, and then they set the underlying grammar to that parameter.

So, that is the understanding of this in a very brief and watered-down definition of principles and parameters. So, this is where we are going with respect to the parameter settings of inflectional morphology. Since languages differ in terms of inflections, some theories propose that there might be something called an inflection parameter. So, the different kinds of parameters can include inflection parameters, as languages differ and

have various structures with respect to how they reflect them; therefore, there might be a different parameter. So, for example, Mandarin does not use inflection to mark tense, but English   does.

So, we consider this kind of a universal thing, but Mandarin does not mark tense with an inflection, whereas English does. So, English speakers set the parameter to the on mode. So, this understanding of tense and that aspect of the property of having this marked on the verb will be switched on in the case of English, but in the case of Chinese, that is in the case of Mandarin, the Chinese speakers will switch it off. And thus, English children making errors can be explained as them setting this parameter to the off position. So, if English children are making a mistake, it is because if you are taking the idea of inflection and putting it, you know, in the category of parameters, then there is a possibility that you can wrongly switch on or off one of the parameters; that is the idea here.

So, if you consider inflections also as part of the parameters, then English speakers might mistakenly switch it off. And thereby, they can have errors with respect to tense marking. Now, why should that happen? This might happen because this is a position before they have gained adequate input in order to set the parameters in a language-specific way. So, English-speaking children will know after adequate input has been gained by them that this language requires the tense marking to be present in the verb. So, before they arrive at that conclusion, in the meantime, they might switch off the inflection parameter.

But there are, of course, problems with this theory that it might not really work because children make errors in some cases and do not make errors in other cases. So, it is not like if you have switched on the parameter, then you use this everywhere, and if you switch it off, then it will be nowhere. But then, children do make mistakes in some cases, and in some cases they do not, as we have seen before as well. So, this is where the new theory and new model come in within the parameter setting group in the parameter setting theory. This is called the variational learning model proposed in 2002 and again in 2007.

So, this idea is that the children start with the principles as per the universal grammar underlying innate grammar. So, that is where the principles and parameters are set on or off based on the language, but most importantly, the contribution of this model is that each parameter is associated with a probability. Now these are all parameters; the principles are already set. There are parameters that are also there, but this parameter setting is based on what they call a probability. Probability changes adaptively; that is the most important part of this theory: this probability changes adaptively in response to the linguistic   data   in   the   environment.

So, when the child hears a language, she sets the parameter on, let us say, on. She hears a language and then she already has the parameters there in the universal grammar, in the innate grammar, and then she sets it in position and tries to analyze the sentence with this grammar, the resultant grammar that will emerge out of the setting. And then, if this analysis is successful and it matches, this grammar will be used again next time. If the grammar fails to analyze the sentence, this will not be used the next time; this is how the variational theory variational proposition is given. But then, needless to say, this theory also has some evidence in support, but also many against it.

So, this is where we will conclude this lecture. So, in this lecture, we looked at the different kinds of errors that children make and how nativist theory applies primarily in two domains. We have talked about the ATOM theory and also the variational parameter setting theory. So, both are within the nativist paradigm and the nativist understanding of inflectional morphology and its acquisition by children. In ATOM theory, we have discussed the data from both supporting data and how the cases where the atom theory does not really analyze and explain the problems and errors that children make.

And then we looked at the parameter-setting theory as well. And in the next lecture, we will look at some of the data with respect to the supporting data for the parameter setting theory, as well as some data that do not support it. Thank you.