Fundamentals of language Acquisition

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Lecture 019

Lec 19: Blocking Hypothesis

Welcome back. We will start with Lecture 4 today. We are looking at morphological processes and how children acquire their morphology and, more precisely, inflectional morphology. And within that, we have looked at a few theories with respect to the nativist theory as well as the constructivist theory. So, taking this discussion forward, today we will discuss blocking hypothesis. Now, the blocking hypothesis is a very well-researched domain; there is a rich literature available on it.

But we will be focusing mostly on the primary notions within this blocking hypothesis, the fundamental ideas about what this is, and we will try to see the two opposing sides of the explanation regarding why the blocking happens, if at all it is a blocking, what is blocking, and if it is a blocking, and so on. So, we have seen that there are two types of predictions about the English past tense form when we talked about the past tense debate. While discussing, we talked about two different types of models: the word and rule model, and the connectionist model. So, now we will look at some of the connected notions concerning these two models.

We will come back to this when we discuss the single and dual route hypothesis, but first let us look at the blocking hypothesis as we just planned. Now, what is the blocking hypothesis? Remember we talked about how children tend to overgeneralize, so 'go' becomes 'goed,' and then learning the 'went' form takes a bit of time because of the overgeneralization. The idea from the nativist perspective is that they are able to apply the rules that are in place and tend to overgeneralize because they are simply using the rules with the new words that they learn. Now, this is where the idea of blocking comes in because there are certain cases where you cannot use certain kinds of words in favor of

others. They may be connected in terms of lexical entities, as in they are lexically similar by sharing the root, or they may not be sharing the root, but they are similar in terms of meaning.

First of all, what is blocking? So, the idea of blocking was based on the idea of irregular words that are listed lexically. That is what the word and rule hypothesis says: that in terms of discussing our past tense debate, we discussed the same thing: that 'go' to 'went' is part of the irregular form. So, 'went' is an irregular form, whereas 'walk' to 'walked' is part of the rule-based output. So, in terms of this theory, the irregular forms are part of one list, and the regular forms are part of another list. So, this is based on the same idea, and as a result, because we have two lists, lexically listed words can block those derived by rule.

That is where our blocking hypothesis comes from. So, the lexically listed words that are the irregular forms that are already listed as words themselves, even if they have a grammatical purpose of denoting the past tense, are still part of the lexical list. So, this is, if there are two forms, there is one lexical form and then there is one derived by the rule, so "go" becomes "goed" and "go" has "went" as the past tense; these are the two possible formulations, the possible past tense forms. Now, if that is the case, then the lexically listed words, which is "went," can block those derived by rule. So, this is how Aronoff, to whom this entire idea goes back, Aronoff 1976.

So, he says that the non-occurrence of one form due to the simple existence of another is blocking. So, certain forms, not only with respect to the past tense but also various others, as we will see shortly, indicate that there are two kinds of forms that are possible, but one seems to block the other. So, that is the idea of blocking. So, why does it happen? Just because another form already exists. So, you do not need to derive the other form by rule.

So, because 'went' exists, you do not need to create a 'goed'. That is the idea, simply put. Similarly, words and phrases also seem to interact with the blocking effect in place. So, Aronoff's idea was later discussed in Poser, 1992. So, there they talk not only about 'went' blocking 'goed', but also about 'smarter' blocking 'more smart'.

So, when you have to create the superlative or the comparative degree in the English language, the English language gives you an opportunity to use the suffix /-er/ for creating the comparative form. So, bright, brighter, smart, and smarter like that. So, you also have the structure where you use another lexical entity like "more." So, more beautiful, most beautiful, you do not say beautifuller or anything like that. So, this is another possibility.

So, in those cases, the lexical entity 'the smarter' will also block the phrasal entity which is 'more smart'. So, this is how Aronoff and Poser talked about the blocking hypothesis. So, the basic idea in terms of blocking, as far as these scholars are concerned, is based on the notion of competition. So, the competition could be between a word and a phrase or two different forms of words. Like we just saw, the "went" versus "goed" are two forms of the same word hypothetically.

Similarly, you have smarter versus more smart. So, these are the two different kinds. So, there is an underlying notion of competition between two possible entities that is there, and because of which one entity blocks the other entity, we have "smarter" more often than "more smart"; that is the idea. So, in terms of Poser, this is actually called Poser blocking; words win over phrases; that is his idea. So, if there are single-word entities, they will tend to win over phrases.

So, that is why you use smarter more often than more smart. So, this idea has been followed by Kipersky as well. So, there are of course this idea is quite complicated and has been dealt with from multiple perspectives, but to simplify, we will look at the blocking hypothesis from the lexical relatedness and semantic relatedness perspectives. Because when we say that 'go' and 'goed' are semantically related, 'go' and 'goed' become ungrammatical, but this is where you use the /-ed/ inflection. So, that is one way.

Here, if you look at it that way, it is lexically related, but if you consider other kinds of forms, there can be semantic relatedness even when there is no lexical relation. For example, a thief and a stealer are kind of things that we will see eventually. So, the lexical connection, as well as the semantic connection, is what we will see. So, lexical relatedness is a case in which there exists the textbook definition of what we mean by this. So, a case in which the existence of one form prevents the appearance of another form whose existence should otherwise be expected, all other things being equal.

This is what basically lexical relatedness means. So, basically, in terms of semantics, if you look at it, the words need to have competing forms. They have, but they are forms of the same root. So, they might be sharing the root, and that is why they are lexically related, but if they share the meaning, then they will have competing forms. So, among the most famous cases, we again have to go back to Aronoff's work all the way to 1976.

So, there he discussed in detail this and he discussed the idea of blocking in terms of a relation between a bare form of the noun. A bare form of the noun means the root form, the one that has no affix attached to it. So, the bare form. So, "go" is the bare form for "going" like that. And then adjectives are formed from these nouns with the suffix /-ous/.

So, you can create, for example, from "glory" it becomes "glorious" like that. So, this is where you create an adjective from there and the possibility of further nominalizing the adjective with /-ity/ and /-ness/ by adding these two suffixes. Now, deriving this might be blocked. Where is it blocked, and why is it blocked? This is what Aronoff discussed. So, in English, we might question why this is the case, because in English, you have "curiosity" and "viscosity" as real words.

So, because this is there, it suggests that /-ity/ can attach to adjectives in /-ous/ form. So, curious and vicious like that, and create abstract nominal. So, this is possible. So, you can derive nouns from adjectives by using the /-ity/ or /-ness/. So, /-ity/ is, you know, attested by this kind of word.

So, as per Aronoff, if the /-ous/ adjectival form decomposes into an independent noun like "glory" and the affix /-ous/, then the /-ity/ form is blocked. So, this is the case where blocking will happen as far as this theory goes. So, for example, if a word has a bare form like "glory" and it also has /-ous/, then you cannot attach /-ity/ to it. In this case it will be blocked. However, on the other hand, if the /-ous/ adjective cannot be decomposed in this way, then the /-osity/ form is grammatical.

So basically, the absence of, let us say, in the case of the word "curiosity," the /-ity/ is allowed because this form does not have a bare noun, something like 'cury' So glory is there, glorious, and that is why gloriosity is not allowed. But curious cannot be further decomposed into a bare noun like curie or something of that hypothetical form, and thereby it allows curiosity. So that is how he explained why blocking happens. So, why is it that we cannot? So, this is a list from his work, a few lists of nouns. So, these are the cases where all of them have /-ous/ and then we have this nominal.

So, in this case, for example, tenacious does not have a bare form, and that is why tenacity is allowed, and tenaciousness is also possible. But in this case, there is a bare form like fallacy, and hence this cannot be allowed because it has a bare form, so it is not allowed. So this is how Aronoff describes the idea of which kind of derivation will be blocked and which will not be blocked, primarily based on whether it has a bare noun form or not. Now the argument is that less predictable forms like /-ity/ should be listed as nominals in the relevant categories. Like they are part of the list, the lexical list and blocking occur between lexical forms so that, for example, glory blocks gloriosity.

Why is it that if there is a bare form, it will block /-ity/ because both /-ity/ and the bare noun will be part of the list, as opposed to the grammatically rule-governed list? So, this and because you cannot have two nominals in the same list, hence glory will block the /-

ity/ format. So, technically glory occupies a slot. So, in Aranoff's theory, there are slots in the structure of the word. So, there is a bear form, there is this /-ios/ form, there is -ness, and then /-ity/, and so on. So, if there is a bare form, /-ity/ cannot take the position of the bare form of the listed domain; this is the slot.

So, technically, glory occupies a slot associated with this root. So, that slot cannot be occupied by an /-ity/ affixed form, but if there is no root form like "glory," as you do not have "cury," then you can have "curiosity"; that is how the arguments are provided by Aronoff. Now, these are the components he further breaks down into components; again, it is very sketchy—just the ideas I have added here. So, he gives four particular components, one of them is paradigmaticity. So, each lexical item is associated with a set of cells expressing different meanings for it.

So, it is something like, you know, the kind of grid. There are cells. So, you have multiple possibilities in that, somewhat like this, right? So, expressing different meanings for that lexical item is important. So, you have glory here. So, let us say you have the bare noun here, and then you have the /-ous/ form here, and then you have the /-ness/ form here, and so on.

But in some cases, if it is not there, then you have the /-ity/. So, basically, the idea is that there are these slots for each lexical item having different meanings. Now, depending on whether you have two forms, one will be blocking the other. So, each cell may be occupied by at most one phonological form. So, you cannot have two phonological forms in one particular slot.

That is the idea of paradigmaticity, a basic idea. Then the idea of lexical relatedness is where we started this entire discussion. So, the competition that results in blocking is between words that share the same root, which is the second notion, the second component of his idea. Third is irregularity; irregularity is, of course, very crucial to blocking only elements that are irregular in some respect must be listed in the lexicon; otherwise, they will not be. So, this is again the same kind of structure that we talked about in terms of word and rule.

So, irregular forms will be part of the word's structure. They are memorized; they are learned as lexical entities rather than derived by using the rules. So, they must be recorded in the paradigm slots; that is what we saw just now. And then the fourth component is wordhood. The objects that are entered into paradigm slots and thus compete with each other are words and block each other by virtue of that.

So, they are all words. So, they have to have what he calls "wordhood" in order for them

to be part of one. How do you look at it from a bigger perspective? These are words and not phrases, or they are not sentences; that is what he means. So, in order for them to be part of the same paradigmatic slot and in order to be able to block each other as a result, they have to be words. So, these are the four components of his theory. Now, if there are other theories that look at the same blocking hypothesis, the same blocking principle as to how it works, and if it can be explained in any different way.

So, the other side of the debate is the distributed morphology hypothesis, distributed morphology theory. This theory allows for competition over the phonological form of individual nodes. Now, distributed morphology is a syntactic understanding and a syntactic perspective. It is not based only on words. So, this is based on the process, the syntactic rule that applies to creating words and phrases and so on.

This is in the generative tradition; as far as this theory goes, there is no need to prevent the gloriosity kind of output through competition. They have a very different way of looking at it. So, the distribution of /-ity/ is what they are focusing on. As far as this theory goes, the distribution of /-ness/, /-ity/, or /-ous/, and so on and so forth, where they fall in the hierarchical pattern, how restricted their use is, and in what cases they can be used, these are the main ideas within this framework.

So, let us see how they actually go about it. This is one possible structure for, let us say, gloriosity. So, this is called a root nominalizing function. So, here we have a structure. So, the nominalizing head is attached to the root. So, this is the main word; the root word here is "glory," and then we have a nominalized noun, which is a little noun nominalizing head that is attached to the root.

Now, sometimes if it is, this 'n' may not have a phonological manifestation; there may not be anything there, but it is also possible to have /-osity/. So, /-ity/ is a listed property within this theory; they call it listed property, which is correlated with the presence of certain roots. Now, /-ity/ within this framework is a part that cannot attach to any kind of root. So, there are certain roots that allow the use of "-ity." Now, the root glory is just not there in that list in question.

So, that is how distributive morphology looks at it. So, glory as a noun does not have /-ity/ within its scope to be attached. Hence, the grammar will simply not create a word like gloriosity. That possibility does not exist. So, you are still following rules and not this here you do not need a competition between two different words. The idea here is that even a single word or two-word constructions, all of them are arrived at through syntactic processes.

So, certain processes are allowed, and certain processes are not allowed as per the rule. So, that is how you can justify the use of "glorious" and not "gloriosity." So, this is one. So, in this structure, this form simply does not allow attachment to the root glory. There is another way of looking at this within the same theory.

This is called an adjective, and this is added to an adjective. So this is the root combined with an adjective head. So this is where it comes from. So you have the root, and then you have the adjective head A. So, this is the structure at this level; with some heads, the n head defaults to the phonology /-ness/.

So, this is also dependent on what can attach to whom. So, with some heads, there are the n heads that default to the phonology /-ness/ and not to the phonology of /-ity/. Hence, there is no reason to expect to find /-ity/ in this case, either. So, whether you look at it from this kind of structural form or from the previous one, there are two possibilities following certain theoretical positions. So, there this simply is not allowed. In this kind of situation, /-ness/ will be allowed in if you follow this route; /-ness/ will be allowed, not /-ity/.

So, the grammar will simply not create the /-ity/ structure. Thus, distributed morphology argues that either way, whether you follow the first or the second pattern, the grammar of English provides no reason for speakers to suppose that gloriosity will exist. It simply will not exist because, within the grammar of English, this is not allowed as far as distributed morphology is concerned. So that is about the lexical aspect. Now, there is another aspect of it that is called synonymy blocking. This refers to the idea that competing forms simply have to mean the same thing.

So, they do not have to share a root; they simply can mean the same thing, and still, you will see the blocking effect. So, for example, the word "stealer" versus "thief": a stealer is somebody who steals, and a thief is also somebody who steals. So, they do not share the root, but they mean roughly the same thing. So, this is a notion of blocking based on meaning, independent of lexical relatedness. So, this is very important because in synonymy blocking, we are looking at words that are not built on the same root.

They are built; they are simple; they just share the meaning. They are independent of lexical relatedness. The problem here is the sharing of semantic space. The idea here is that of a semantic space. Hence, it is not the ungrammaticality or non-existence of a form that is the reason for blocking.

It is the idea of a shared space. So, the space is taken by a thief; then you do not need a stealer to be used there. So, from steal to stealer, you do not need to go there because the

word thief is already occupying that semantic space. Now, semantic space is a very important concept in children's language acquisition because often the acquisition of words is based on the notion of uniqueness of entities. So, you learn a new word when it refers to a new entity, a unique entity, not the one that you have already learned before.

So, as a result, we have discussed this in another module. So, I am not getting into the details here. So, the idea of semantic space is very important as far as child language acquisition is concerned. So, you cannot have too many words competing in that space. So, that is why it is important: uniqueness is crucial. Hence, it is semantic, as a result of which semantic blocking appears to be a plausible situation.

Now the arguments against this idea also come from the same theoretical position of distributed morphology. So here the idea is that, for example, there is of course a lot of literature available, but one very important one. They talk about pairs like horse to horsess, as in prince to princess. So why can't we have horse becoming horsess in the feminine form but we have mare? So here why is there is this a case of blocking. Because the idea here is that the word "mare" exists, it blocks the creation of the word "horses"; that is how it is.

So, it becomes redundant because a mare exists; horses become redundant. However, the idea that similarly turtless cannot exist is a deviant form. Independent of the other, the distributed morphology argues that words like "turtless" or "horsess," this kind of words, are deviant, even if there is or is not an existing word for a female turtle or a female horse. So, turtless we do not have like for horse there is mare, but for turtle I am not sure whether there is a word for that, but even let us say it is not there even then turtless is not a good choice that is what they say. Similarly, if we stick to the same semantic domain of, let us say, lioness, we have leopardess and tigress; however, we do not have jaguaress and pantheress.

So, the leopardess exists and the jaguaress does not. So, what is happening here? So, the same semantic domain, same club of animals, but we do not have some forms that are allowed and some forms that are not allowed. So, now let us look at how distributed morphology tackles this. So, they consider that the interaction between smarter and more smart does not involve blocking and that there is no competition at all. So, we are back with our older example of "smart" and "more smart." Here, the idea is that a single system is responsible, as I have already talked about; a single system is responsible for the generation of all objects, whether they are one word or two words.

So, based on that, we have this kind of structure that we have just seen. So, similarly, we look at, let us say now, the case of a thief and a stealer. So, following this idea, there are

two processes; this is again what we talk about, and this is called root nominalization. So, in the case of a thief, the structure will look like this. So, this is the root thief, and we have this n here, but there is no phonological component.

So, this is why we have marked it as null. So, this is a null phonological component, and "thief" is a root word. On the other hand, in the case of "stealer," we have "steal" in the root, and there is this little "n" that creates a noun from the root word "steal." So, stealer is a possibility, and then thief will look like this. So, "stealer" and "thief" both share the semantic space, and whereas "thief" is fine, "stealer" is not fine, but both of them can be expressed using this kind of structural form. Now, if the need arises for a word to describe this idea of somebody who steals for a living against the law.

So, if stealing is your profession, then you are a thief; that is the meaning of the word thief. Now, if somebody wants to express this idea, they already have the word "thief." So, it makes the creation of a novel root nominalization unnecessary; that is the idea here. So, the process through which a stealer is kind of disregarded is that they already have the word thief. So, you do not need to create such a complex structure to arrive at "stealer" because you already have "thief"; hence, it would make the analysis of "stealer" in terms of root nominalization unlikely.

Only when the speaker is convinced that the meaning of "stealer" is not entirely taken care of by "thief," then this form would be used. Now, let me add a disclaimer here: this is a slightly debatable idea. These days, the term "stealer" was not a very commonly used word some time back, but now you can actually find it if you search the web; there are password stealers, base stealers, and this kind of terminology does exist. So, probably why it is happening is that the meaning may not be entirely overlapping, and that is when you have the word "stealer"; that is one of the arguments given in literature.

The other format we have seen before is also called deverbal agentive nominal. This is again so steal here, and then we have this V here, so this is the node here, and then it goes up in the when you have to create a noun out of this; this is how the process will be. So, in this case, the stealer is a deverbal agentive /-er/ nominal in which a root and a verbalizing head combine, and then this combines, and then at the next level, it gets nominalized by an n. So, this analysis now requires that for this kind of structure to hold, there has to be an object that the person steals. So, stealing is necessary even in a case where, you know, when you are not using the object itself, it is already understood that there has to be an object.

But if it is not mentioned, then the usage of the word is odd. So, the analysis requires an object to be present that is not there. So, as a result, there is something odd about the

structure 'stealer' in some contexts. That is why it is not used. So, basically, what distributed morphology talks about is that by looking at the structure and the process that underlies arriving at those structures, one can justify and explain why certain forms are not used.

You do not need a competition between lexical entities for the idea of blocking to emerge. So the competition is not for grammaticality; rather, the effect in this case has to do with what a root nominalization stealer could be used for and where you will use it. So, in order to use it, you need an object to steal. So this is how you can explain it. Similarly, there is another idea called ill-formedness, an important issue that again relates to the idea of blocking.

This refers to cases like breaker and stealer again. So, these are also called ill-formed structures. So, in the case of the breaker, there is no listed form that the speakers prefer. The still breaker sounds odd.

For example, in "stealer," you have "thief." So, you do not need it. So, the idea that because there is a thief, you do not need to go through all that complex system to arrive at a stealer. You already have something you can use. But the breaker does not have anything like that, a listed item, a lexical item. So, we still do not use the breaker. So, we could, however, use that right, but there are some general domains where they could fit; however, it is simply not used.

What do we have at hand? To sum up, this idea of blocking has been extensively debated within the lexicalist and non-lexicalist theories. So lexicalist theory is a theory that we talked about in the beginning, where we discuss two different words, whether they are lexically connected or semantically connected like synonyms. They can, if there is one word already existing, then there is a competition in terms of the paradigmatic slots and so on. That is one. The non-lexicalist hypothesis is from the perspective of generative syntax, so distributed morphology discusses the structure and explains why certain forms are not used while others are.

So, the lexical approach and lexicalist approaches to blocking are the important names; I have quoted them, and I will also add the references. I could not because we do not have time, so we cannot add all of their contributions. So, these are among the most important names from the lexicalist approach, and of course, we have not discussed all of their positions here. But the main argument against the lexicalist hypothesis is that they might appear plausible in certain cases. However, the predictive power is less from the lexicalist position as far as the use of this kind of morphology is concerned.

So, arriving at the conclusion that the predictive power of the lexicalist hypothesis is weaker as opposed to the distributed morphology hypothesis. So, on the other hand, the generative approach to grammar, as formalized within distributed morphology, gives an analysis that seem to explain the phenomenon better because the same structural properties can hold for various kinds of structures and various kinds of words in their analysis. So, it has a better predictive power as far as blocking is concerned. So, this is roughly what blocking is all about. In the next lecture, we will take up the other ideas of the dual and single route hypotheses, and we will conclude with some more examples of the production of inflection by children. Thank you.