

[SQUEAKING]

[RUSTLING]

[CLICKING]

NORVIN
RICHARDS:

Sorry. So here's syntax five. If you're wondering whether we're ever going to stop doing syntax, we are, but I'm not sure when. I think we have at least one or two more days of syntax. So if you're looking at the syllabus to try to figure out where we are, just don't do that. I'll try to update the syllabus soon to give you some idea of what's going to happen in the future.

Last time, we got started on something that I promised you at the beginning of the semester. Sorry. I'm just going to close this real quick. I said at the beginning of the semester that one of the kinds of things we were going to find out was that, although there were lots kinds of languages out there in the world and we were going to have a chance to look at some of them, that one of the things that we find as we study these-- I turned out not to be able to close that door--

Let me try that again. One of the things that we find as we study languages of the world is that, although there are many languages out there-- oh, well-- I've been defeated by a door. This is very sad. That although there are many languages out there, there are kinds of languages that are easy to imagine but that don't, in fact, exist.

And there's a hypothesis about what's going on, which is that part of being a human being is having the kind of mind that can construct language in some ways, but not others. That is, given a certain set of data, the human mind jumps to certain conclusions but not others about this system that's underlying those data.

And one of the things that we're trying to find out as we study linguistics is about what it is about human minds that makes them work this way. What are the rules that our minds are using to make sense of the limited data that we have? We ran very quickly through one argument of that kind last time because we were running low on time, and I thought, maybe we have time for this argument.

And probably, looking back, we probably didn't. If you are looking at the-- if you get a chance to look at the video of that, if anybody wants to, you should look at it on slowed down speed to see if you can get it to make sense. So I was going to go through that argument again and some other arguments a little more.

That's going to be a theme for today. I will show you some areas in which languages vary, and then we will imagine kinds of languages, and we'll discover that those kinds that are easy to imagine don't happen. So we're going to look at that. This is 24.900. If you go on and take more linguistics classes, you will see more phenomena of this kind and more theories about why languages behave this way.

But trying to understand why languages behave this way is one of the central occupations of linguistics, trying to understand basically what human minds are like. So last time I showed you the slide-- this was a slide for the question, "What will Mary write?" I was trying to convince you that, in a sentence like this where we think that "write" selects an object-- it has the option of being transitive-- you can say Mary is writing a novel.

And we thought that when you had a selection relation between the head and some phrase, that the phrase needed to be the sister to the head. At least, if there was only one thing that it was selecting. We spent a lot of happy time thinking about what happens when a head is selecting more than one thing.

And I promised you that we would talk more about that later. But that promise did not apply to today. So today, yeah. If a head is selecting only one thing, that thing needs to be the sister. And then we looked at questions like this, and I tried to convince you to be upset. So the word "what," which seems to be the thing that's being selected by "write," it seems to be the thing that's getting-- that is the object of "write"-- isn't anywhere near "write."

What I said was there is a standard way to deal with this problem, and we're going to gradually accumulate evidence for this idea. But for today, I'll just show you the idea. The idea is that, indeed, what does start off as the sister of "write" goes right where the projection principle says it should.

It's merged right away. As soon as "write" is introduced, first thing you merge "write" with is something that "write" is selecting-- its object. But then there is an operation that obscures that, destroys that relation, takes that thing which starts off as the sister of "write" and moves it to this higher position in the clause.

I said that it moved to the specifying of CP. That is that position that's there on the tree. So it becomes the daughter of the CP node. CP, maybe you remember, is the projection that's headed by words like "that" and "whether" in sentences like "I think that it is raining," talking about that as being the place where we would put words like that.

Does this all sound familiar and not terribly upsetting? Is there anything in any of this that makes any of you want to demand further explanation or even ask nicely for further explanation? Anything else like that? No? OK. So one of the-- so wh-movement. Cross-linguistically very common. Lots of languages out there that have this operation that takes these wh-words, these question words with meanings like "what" and "who" and "where" and "why" and puts them at the beginning of the sentence.

So hearing examples from English and Tagalog and Finnish. The language that you're working on could be a kind of thing that you could try to find out "How does it do its wh-questions?" Because there is cross-linguistic variation-- we said this last time too-- with respect to how you form the wh-question.

So there are languages, like English, which do wh-movement usually. We talked about special conversational circumstances under which you might leave a "wh" in-situ. So there are times when it's possible to say "Mary wrote what." But it specifically has to involve either not having heard you say exactly what Mary wrote or being amazed.

So you say, "Mary wrote an Estonian novel." And I say, "Mary wrote what? I didn't know she spoke Estonian." But except under those special circumstances, the normal thing to do with wh-words in English is to put them at the beginning of the sentence. There are other languages, like Mandarin or Bafut-- which is a language of Cameroon-- or Hopi-- which is a language of the American Southwest--

many, many languages which don't do that. They have what's called "wh in-situ." That is, the wh-phrases just stay where they would normally be in the language in question. So Chinese word order is not unlike English word order. You've got the subject and then the verb and then the object.

And the word for "what" there is sitting right where an object would normally be if you wanted to say "Zhangsan bought an Estonian novel" in Mandarin-- I have no idea how to say that. I don't speak Mandarin well at all. The words for "Estonian novel" would go right after "bought." It would go right where "what" is. Yep.

Same deal for Bafut and Hopi. Hopi word order is different. The verb is at the end of the sentence, but the generalization about all these languages is that the wh-phrase is just staying where it is. There is no WH-movement going on. And what I said last time-- and this is true-- is those seem to be the options, basically.

You either put your wh-phrase at the beginning of the sentence when you do wh-movement or you leave it where it is. You could imagine other things that you would do. You could imagine a language where the wh-phrase would move to the end of the sentence or a language where the wh-phrase would have to be in the middle of the sentence-- you'd count the words in the sentence and make sure it was evenly in the middle of the sentence.

There aren't any languages like that. Now, so here's an example. There are no languages in which the normal way to say "who has eaten the cookies" is "has eaten the cookies who?" where I've put in all these silly diacritics to emphasize the fact that I'm making this up. There are no languages like this. This is not a real language.

So I'm making up conlang. Yeah?

AUDIENCE: Are there any languages in which [? move ?] to the beginning of the sentence or just the in situ [INAUDIBLE] are they both [INAUDIBLE].

NORVIN Yes. Yes. Excellent question, and I should have said that. There are languages that allow you to do either one.

RICHARDS: French is a language like that, for example. And, in fact, it's not uncommon for languages like that to-- I mean, the first thing to say about them is that they have both options. It's not uncommon for one of the options to be more common or to be less restricted.

So French allows you to do wh-in-situ, but not always. There are restrictions on it, and people get very interested in the restrictions, trying to figure out when do you have to wh-move in French. But yes. The short version of the answer to your question is yes. Other questions about this?

OK. So I started this off by saying we're going to spend some time talking about languages that don't exist. Here's a language that doesn't exist. There aren't languages that take wh-phrases and move them to the end of the sentence. And if you're syntactician, you want to know, well, why? Why aren't there any languages like that? It's not hard to imagine them.

Now, when I am trapped on an airplane and the person next to me wants to talk to me, and, for some reason, they want to continue to talk to me after I tell them that I'm a theoretical syntactician. If I tell them this, if I tell them about this kind of contrast, they sometimes respond by saying-- sometimes they say, "Oh, yes. That's very interesting...." And then they start reading their novel.

But sometimes they respond by saying, yeah, but look. In a wh-question, the wh-word is the important thing. So maybe it's just-- if you ask, why aren't there any languages like this, maybe it's just if it's important, then you want it to be first, something like that. The theory doesn't usually get any more sophisticated than that.

So if you're going to do anything with a wh-phrase, maybe it's not so surprising that it's first. And so I actually want to show you a kind of apparent counterexample to what I've just claimed. Because the fact is that there are languages that arrange for the wh-word to be at the end of the sentence, it's just that they are always wh-in-situ languages.

Let me explain to you what I mean by that. So in order to tell you what I mean by that, I first have to tell you another point of variation between languages. There are languages in which the normal way to form wh-questions is it involves what's sometimes called a cleft.

It's as though you have to say in these languages "What is the one that you bought?" or "What is the thing that you bought?" Some of the languages that are like this only do this for some of their kinds of wh-questions. Some of them do it for all other kinds of wh-questions. So these are languages in which you can't literally say "What did you buy?" You have to do this more complicated structure.

I'm not going to try to give you a tree for this more complicated structure. But something like this. Something that involves more than one clause, basically. So you have a "what" at the beginning of the sentence. But inside that sentence, there's this other clause "that you bought." That's a CP. Look, there's a C at the beginning of it-- that.

In English, we can ask questions like, "What is the one that you bought?" But in Tagalog, for example, you have to. So you can't just say, "What did you buy?" in Tagalog. You have to say, [TAGALOG] where the [TAGALOG] is literally something like "the (___) you bought." So that [TAGALOG] is the kind of thing that only ever goes before noun phrases.

So this is the Tagalog for "What was the thing that you bought?" or "the one that you bought." And Tagalog, the word for "one," the word for "thing" is null. It's not pronounced. I think I got asked last time. Are there ever things in trees that are not pronounced. And here's an example. The Tagalog word for "one" is such a thing.

AUDIENCE: Question. So there are [? a ?] type of sentences which is more like, if you didn't hear something, you want to clarify. For example, you want to say the question of, what?

NORVIN Yes. Yeah.

RICHARDS:

AUDIENCE: And I see that there's slightly different structure. It's very [INAUDIBLE] to say, [INAUDIBLE] or something.

NORVIN Yeah.

RICHARDS:

AUDIENCE: But how does that fit with the fact that wh [INAUDIBLE].

NORVIN Is never to the right? Yeah, so that's a really nice example. The fact about questions like that is that the wh-word is sitting where it would normally be. It's not moving at all, because it doesn't have to be at the end of the sentence. If I say, "Mary bought an Estonian novel in Paris," your response to that could be, "Mary bought what in Paris?"

So the word for "what" isn't going at the end of the sentence. In fact, it can't. It's not the natural way to-- that's the natural way to respond to that. You don't say, "Mary bought in Paris what?" So the word "what" isn't going at the end of-- it happens to be at the end of the sentence in your example, but what it's really doing is just not moving. It's just staying where it is.

That's a really nice point, which I was planning to make later, but thank you for making it now, that we have to draw this distinction between just sitting there and moving to the right. Yeah, so in those kinds of questions, it's not moving to the right. Nice, nice example. Does that answer your question?

Yeah. Yeah, no questions? OK. OK, so this is the setup for this point. There are no languages that move wh-words to the right, but I'm going to show you a weird wiggle that obscures that fact sometimes.

So first, there are languages like Tagalog in which you can't ask, "What did you buy?" You have to say something like, "What was the thing that you bought?" And I just have to ask you to trust me that that's the best analysis of this Tagalog question.

I work on Tagalog. I'm happy to talk about this at great length. Talking about Tagalog is one of my favorite things to do. So don't ask me any questions about this Tagalog question. That's very dangerous. If you want to learn anything else today, we have to get away from this slide, OK?

All right, now, imagine-- so Tagalog is a language that has these clefts. It has these bi-clausal ways of asking questions, wh-questions. And it has obligatory wh-movement. So the Tagalog wh-words, they're just like the English wh-words. They have to go at the beginning of the sentence.

Yeah, now imagine what a language would be like, though, if it had clefting and it had wh-in-situ. Well, then, it would have questions like this. It would say things like, "The one that you bought was what?" Or, "The one that ate the meat was who? That is, you'd have that embedded clause, the embedded clause of the cleft, and then the wh-word-- which is kind of the predicate, the thing that's being described as the thing that this embedded clause applies to-- would end up at the end of the sentence-- or at least it could, if that's where predicates went in the language in question-- but not because the wh moved there, just because it was in situ.

It would be like Vlada's example of a second ago, right? So Vlada was saying, here's an example where the wh-word is at the end of a sentence. And I was saying, yes, but it's by accident. It's really just staying in situ. It's not moving to the end of the sentence. Does that make sense?

I'm saying all this because there are languages like this-- languages where the wh-word is at the end of the sentence, not because it's move to the right, but because, well, the language has clefts, and the wh-word always ends up at the end of the sentence not because it moves there, but because it's in situ. Kabardian is a language like this.

And if you thought I was going to pronounce this Kabardian example for you, you have another think coming. I have no hope of pronouncing this Kabardian example. But this is how you say "Who ate the meat?" in Kabardian-- the only thing I know how to say in Kabardian where I don't in fact know how to say it. I only know what it looks like. I can't pronounce it. And it is literally, "The one who ate the meat is who?" Like that's how you say that in Kabardian.

So there actually are languages that put their wh-words at the ends of sentences. Kabardian is one. But the structure never involves wh-movement to the right. It's always clefting with the wh-in-situ.

The conversation with the person in the airplane is always over by this point. But if they would listen to me, this is what I would tell them. It's yeah, you don't want a story that says, wh-words-- it's natural for wh-words to be at the beginning of the sentence. First of all, you then have to tell me what the heck you mean by that. But there actually are languages in which the wh-word always ends up at the end of the sentence. It's just that it doesn't move there. It's always in situ when it's there. Faith?

AUDIENCE: So I'm thinking about in Spanish, how a direct object pronoun can go before or after a verb.

NORVIN Yeah.

RICHARDS:

AUDIENCE: But there's always, like, leftward wh-movement, because you could say, look, "Lo quiero decir" or "Quiero decirlo," but it's always going to be "¿Qué quieres decir?" Is there a reason for that?

NORVIN So Spanish is a language that has been described as having wh-movement. Usually, there's supposed to be contexts in which it's OK to say the Spanish equivalent of "and you bought what?" where the wh-word ends up at the end of the sentence. And those are supposed to not be exactly like the English cases of being astonished.

RICHARDS:

What you really wanted to know about was the pronoun-- like why can you say, in Spanish, either "He wants to say it," or "It he wants to say," Right? So Spanish has these words-- they're called "clitics" in the literature. It's common for pronouns to be like this in a lot of languages where they have special rules about where they go in the sentence.

I have only shown you one kind of movement, wh-movement, but what you're pointing out is that there are other kinds. So Spanish is a language that more or less has to move its wh-phrases, but its clitics have special conditions on where they go that are distinct from its-- from a--

It's important for your example that it involves an infinitive, I think-- that if you wanted to say, whatever, "he said it," that you would say-- what would you say-- "it"?-- "Lo dijo." yeah. So you wouldn't say "Dijo lo."

AUDIENCE: Yeah, I think that is a thing in Castilian Spanish from the 1600s, is the [INAUDIBLE].

NORVIN It's a point of variation between Romance languages. So there are Romance languages-- and languages, generally. There are Romance-- so these are languages in which the clitic wants to attach to the verb, and whether it goes before or after the verb often depends on whether the verb is an infinitival verb or not. And for Spanish, I think, the rules are it goes before tensed verbs and after infinitival verbs.

RICHARDS:

So your first example had both an infinitive and a tensed verb in it, and the clitic had two options as to where it could go. If we were developing a complete theory of clitics-- which, just to be clear, we are not-- we'd want to have an account of that, figuring that out. The Phenomenon is called "clitic climbing." The clitic that belongs to the embedded verb gets to climb up and attach to the first verb.

Was there another hand? I thought all of you had hands, but I guess they're all sitting peacefully. OK, cool.

OK, so language universal, there is no true wh-movement to the right. There is Kabardian, so wh-in-situ combined with the obligatory clefting, with the consequence that the wh is at the end of the sentence. But there's never a wh-movement to the right.

If you're a syntactician, you look at this fact about the world, and you think, well, why? Why is wh-movement, why is the specifier of CP the-- we go back to the tree over here, this tree-- that wh-movement that lands in the specifier of CP that makes the noun phrase, what, a daughter of CP? Why does that daughter of CP always precede C-bar? Why can't it follow C-bar? There's no language anywhere on Earth where it follows C-bar, and it would be nice to know why. So there's syntactic work on why, which I will not try to show you. If you would like to know more, take more linguistics classes.

OK, all right. And then, yep-- and then, and this is the part that I went through too fast last time. And so I'm going to go through it a little more slowly this time. I don't know. We'll see.

That kind of generalization about languages not being completely varied, it's not the case. There-- there's a phenomenon, wh-movement, and there are-- there's more than one kind of language. There are languages that do wh-movement like English, and there are languages that leave the wh-in-situ, like Mandarin or Kabardian, but that's it. Those are all the kinds that there are. And there are imaginable kinds, like the mirror image of English, where the wh-phrase goes at the end, which don't exist. And we'd like to know why.

I want to show you another example of the same kind. I showed you this last time, but I'll show it to you again. There's also variation with respect to how you do multiple wh-questions, So wh-questions where there's more than one wh-word in the sentence. First of all, there are languages that just ban them. That's one kind of language.

So Irish doesn't allow them. Italian, at least until-- apparently, young Italians are beginning to develop multiple-wh questions.

[LAUGHTER]

But older Italians don't have them. Kids today and their multiple-wh questions! And then, so for languages that do have them, they're languages like English in which the rule is, English has wh-movement, as we know, and if you have more than one wh-word, the rule for English is that you move one of them.

So you ask questions like, "What did you give to whom?" Or "What did you give to whom when?" If you have three wh-phrases, you're only going to move one of them. That's the generalization about English.

And then-- I told you this last time-- there are languages like Bulgarian and Mohawk in which all of the wh-words move. So in Bulgarian, you must say, "What to whom did he give?" That's that second question. Or in Mohawk, you say things like, "Tell me who what bought." You can't leave either of the wh-phrases in situ.

And so here's the place where I promised you, there's more than one kind of language, but there isn't every imaginable kind of language. So there are languages like English that move one wh-phrase. There are languages like Mandarin that don't move any. And there are languages like Bulgarian and Mohawk that move all of them. But 0 and 1 and "all" are all of the options for moving wh-phrases in multiple wh-questions.

And you all know more math than I do. You know of numbers besides 0 and 1 and, well, "all," which I guess isn't a number. So you could imagine a language where the rule is, move any number of wh-phrases up to a maximum of 2, right? Or move any number of wh-phrases, I don't know, as long as it's prime, or whatever-- as long as it's one of the first 10 digits of pi.

All kinds of imaginable languages that you could imagine, and none of them exist, right? So there aren't languages out there in which you say "Who gave a book to Mary?" and you say "Who what gave to Mary?" but when you get to three, you have to say "Who what gave to whom?"

That language doesn't exist. It's not hard to imagine. You could write a grammar for it. It doesn't exist. You don't find it.

And then, this is where I gave you the parable of the function, which was meant to be a parable about what life is like when you are a baby. So imagine, I said, that you are a Bulgarian baby, and you're hearing your parents utter multiple wh-questions. There's some limit on the amount of data that you get-- not just if you're a Bulgarian baby listening to multiple wh-questions, but in life, right? There is some-- it may not have seemed like it at the time, but there is some maximum amount of stuff that your parents said to you when you were growing up, and the stuff that you heard-- not just your parents, but the other people that were talking to you when you were growing up and acquiring your native language. There is some body of data-- maybe it was fairly large-- of things that people said to you.

Maybe fairly large, but it was finite, so there was some maximum number of wh-words in the questions that you heard growing up. And the thing about finite data-- so the point of the parable of the function-- is here, I am giving you finite data. The function returns 1 for 1, and 2 for 2, and 3 for 3, and 4 for 4, and you have no idea at all what it should return for 5.

Given what I've given you so far, you might hope that you're living in just and merciful universe where people, data work the way they should. But they're just-- as a matter of logic or a matter of math, there are no restrictions at all on what the consequence of giving this function 5 could be. So I showed you one example, one function for which the output would be 29, and I could multiply that first thing, the thing that comes right after the equals sign, I could multiply that by any number at all. The consequence of f of 5 could just be anything.

And life is kind of like that. This is sometimes called the problem of induction when people talk about it in the context of science. So you're going to make some number of observations of the world, and you'll maybe see the same thing over and over again. You'll see that, as you drop a weight, that the weight falls down, and not sideways or up. And you see that over, and over, and over again. And eventually, you start to hypothesize that down is the direction that they're going to fall, that every crow you see is going to be black, that every swan you see is going to be white, because you keep seeing that over and over and over again.

But it's kind of like concluding that f of 5 is going to be 5. It should work that way given everything that you've seen, but it might not. Maybe the next weight you drop will fall upwards. And so part of science is saying, we're going to draw these laws. Given the inevitably finite data that we've got, we're going to sketch these laws about what we think is going to happen. And then we go on doing science and refining our laws. Raquel, are you-- yeah?

AUDIENCE: The thought that I am thinking is something along the lines of like, is it possible that part of being human is developing languages that are kinder than giving you "f of 5 is 29," and that maybe it's like you could give languages a weird difficulty coefficient, and then the coefficient, if it's really low, tells you that it'll probably be something intuitive like five. If it's really high, then you can't rely on the language to be nice to you when it could be 29?

NORVIN
RICHARDS: Yeah, that's-- you're saying it very well. Maybe another way to say it, to repeat what you just said, is yeah, human minds are set up in such a way that f of 5 is 5. Human minds are set up in such a way that multiple wh-questions, there are only a few options. Maybe I'm learning Italian and multiple wh-questions are just banned. Maybe I'm learning Mandarin and wh-phrases all stay in situ. Maybe I'm learning English and one of them moves. Maybe I'm learning Bulgarian and all of them move.

And that's it. Those are the only options there are. Which means if you're a Bulgarian child, and you're growing up, and you're hearing your parents ask multiple wh-questions, there's some maximum number of wh-words you ever heard them say at any point in their life. And that number-- suppose that's the most inquisitive your parents ever got in your life, it was a two-wh-word question.

I can say, incidentally, multiple-wh questions-- I wrote my dissertation about multiple-wh questions. They're extremely interesting, but they're not common. If you spend some time listening, you'll spend a long time before you hear somebody say this in the wild. It's not a common kind of question to ask.

I happen to know, for example, that there are no multiple wh-questions in the Bible. So I have this project--

[LAUGHTER]

--that involves going through the Bible verses. So there's a language called Wampanoag, which is a language that's spoken around here traditionally. The Wampanoag are trying to revive their language, and one of the texts that they have is a complete Bible translation. It was the first Bible published in this hemisphere. It was a Wampanoag Bible that was published here in Boston in the 1600s-- 1635.

And so I have been reading the Bible very slowly and carefully, trying to put the grammar of Wampanoag back together and writing a dictionary. And so I really wish that there were multiple-wh questions in the Bible. It would answer certain questions about Wampanoag. I would really like Jesus Christ to turn to the disciples and ask them "Who bought what?" It would be great.

[LAUGHTER]

But he never does, never. I have checked. There are no multiple-wh questions in the Bible. And the Bible is quite large, right? There's lots and lots of texts. I know this because I've been reading it. It's taken me years.

So these are not common. It's not at all-- it wouldn't be at all surprising if the largest multiple-wh question you ever heard your parents say had two wh-phrases in it-- something like "Who bought what?" or "What did he give to whom?" Maybe you heard your parents at some point say, "Who gave what to whom, when, why?" It's not likely.

And so I think I said this last time. You might have expected if children had to consider all of the imaginable grammars that are consistent with the data that they have, you might have imagined that Bulgarian children would have-- Bulgarian adults would have different grammars, that there would be Bulgarians who guessed that the grammar was move your wh-phrases up to a maximum of two, or move your wh-phrases up to a maximum of three, or move your wh-phrases up to a maximum of four.

But that's not what we find. So any Bulgarian that you ask, as you ratchet up the number of wh-words in the question, they just always move them all. The only choice they all made was all. Yeah, so here's a case where the data that anybody is exposed to are necessarily limited in a way that means that there are literally infinitely many possible grammars that are compatible with the data that they have. And yet, they all converge on the same answer.

So this is a case of what Raquel was just talking about. It's as though being a human being means having the kind of mind that considers some possibilities but not others. So you consider all, but you don't consider up to a maximum of two. That's not a kind of grammar you think about. That's apparently what we're finding.

Raising questions like, well, why? So what is it about the human mind that makes it like that? That's one of the kinds of things linguists think about.

OK, similarly-- and this is echoing a point that Vlada made a second ago-- if you're learning Chinese, if you're growing up learning Chinese, you may hear your parents say something like this at some point. And if you are considering all of the logically possible grammars that are consistent with this, you might have to spend some time thinking, well, am I learning a language that moves its wh-phrases to the right, or am I learning a language that leaves its wh-phrases in situ? And so you might expect that there would be a stage in the life of Mandarin children where they entertained the possibility that wh-phrases move to the right.

It would be a cute kid thing to do. Oh, our child is so cute. When she was three, she thought wh-phrases moved to the right. She was saying things like--

AUDIENCE: Aww.

NORVIN Aww, yeah.

RICHARDS:

[LAUGHTER]

But no, I mean, Chinese babies are cute like babies everywhere, but they do not make that particular cute mistake. If you've ever been around small children, you know children do make mistakes. They take guesses that are wrong about how the adult language works, and they spend some time making adorable mistakes. But the children do not make that particular adorable mistake because they are human beings, and they know that there are on some level-- their heads are structured in such a way that they cannot entertain grammars where wh-phrases move to the right. There aren't any of those.

Part of our job as linguists is to come up with a theory that explains that. And when I say it's part of our job as linguists, I do not mean that I'm now about to tell you the theory. That's an active topic of research, people trying to figure out why grammar works that way.

OK so yeah, if you are a Chinese baby and you hear that sentence, you know that you are hearing a wh-in-situ language. You don't have to entertain possibilities like a language in which the wh-phrase moves to the right, or, a language in which the wh-phrase is the third word in the sentence. Those are both grammars that would generate that question, but you don't spend any time entertaining those possibilities. Yeah?

AUDIENCE: OK, well, this is going to be probably a bit like what if.

NORVIN Yeah.

RICHARDS:

AUDIENCE: Probably never encounter it.

NORVIN Yeah.

RICHARDS:

AUDIENCE: Because you'd think that nowhere does [INAUDIBLE] Chinese babies say, or like, think, I must move word to end.

NORVIN Yeah.

RICHARDS:

AUDIENCE: What if, hypothetically, a baby speaking in an English-- a baby in an English-speaking environment never heard an in-situ--

NORVIN wh, mm-hmm.

RICHARDS:

AUDIENCE: OK, often-- OK, how do I phrase it. What if the only-- all the questions the baby hears is like, "Who did this," "Who did that," "What happened?"

NORVIN "What happened," yeah.

RICHARDS:

AUDIENCE: Where it could plausibly--

NORVIN Be in situ.

RICHARDS:

AUDIENCE: Be in situ.

NORVIN Yeah.

RICHARDS:

AUDIENCE: Could they potentially realize, or like think maybe it's not in situ.

NORVIN Nice question. So everything I've told you so far makes it sound like you could fool babies, in theory, in that way.

RICHARDS: Like you say, it's hard to test because, in fact, I mean you probably can't recruit parents to agree never to ask questions like "What do you want for lunch?" But you're absolutely right that you could imagine children going through, probably, a pretty brief stage where they thought that was a viable option.

In a way, your question gets at something else that I said, which is languages-- so I've said there are different kinds of languages. There are wh-in-situ languages, there are wh-moving languages, and-- this was Faith's question-- there are languages that allow either option. That's also a kind of language. And that's all I said about that right.

You could now ask, does that just mean that if I want to learn English, I must learn it's a wh-movement language? Or does the fact that it's a wh-movement language have anything to do with anything else about English? Is that just a parameter we have to state about English, or does it follow from other stuff about English? And that's also an active research question, is whether we can get away without having to just state those parameters, or whether we can connect that to other facts about English. That would mean that an English-speaking baby would have other sources of information, possibly, besides just actually hearing wh-questions.

So just to make it more specific what I mean, so here's something which is not true. If it turned out that every language in which the subject comes before the verb is a language with wh-movement-- now, that's false. So Mandarin is a language where subject comes before the verb, and it has wh-in-situ. But imagine that it turned out that every language where the subject comes before the verb is a language with wh-movement. , Then an English-speaking baby wouldn't have to hear any wh-questions at all. They'd just have to hear that the subject comes before the verb, and then they would be like, oh, it must be a wh-movement language.

So if it were possible to connect the fact that English has wh-movement to some other fact about English, then babies would have other sources of data. Now, like I say, that theory that I just offered as a toy theory, that's not the right theory. So we have to work harder to find the right theory. But that's the kind of theory that would give you more data, yeah Yeah?

AUDIENCE: So you said babies never consider that it could be [INAUDIBLE] oh, a maximum of two--

NORVIN Yeah.

RICHARDS:

AUDIENCE: --that move to the left. But how do we know that it's not just like-- that's not the data that the baby would get? A baby that has spent eight or nine months just taking in sound.

NORVIN Data?

RICHARDS:

AUDIENCE: And before they even speak a sound.

NORVIN Yeah.

RICHARDS:

AUDIENCE: So how do we know that it's just like, oh, this was not part of what was presented as data to the baby?

NORVIN So I don't know if this is going to address your question or not, but let me try. No matter how long we let the baby spend learning Bulgarian, no matter how much Bulgarian they hear, there's some maximum number of words they heard in a wh-question. It might not be two-- it might be three, it might be four-- but it's some number.

And so you might have expected that there would be variation among Bulgarians because any number, whatever the number is, it doesn't uniquely pick out a grammar. There's always, actually, infinitely many possible grammars. So if the number that they heard was n , if that's the maximum number, then it could be "Move them all." It could be "Move them all, up to a maximum of n ." It could be "Move them all up to a maximum of n plus 1," or n plus 2, or plus 3.

Yeah, it could be, again, infinitely many possible grammars. And so you might have hoped, you might have expected, that there would be lots of different adult Bulgarian grammars. But there aren't; there's only one. It's "move them all." Is that getting at your question?

AUDIENCE: Probably, yeah.

NORVIN
RICHARDS: So it just doesn't matter how much data the babies have. It's never enough to uniquely determine what the grammar ought to be. It's got to be the data plus something in the baby's head that says, the only options are don't move any of them, move one of them, or move them all. Those three are the only options because no matter how much data they have, they'll never uniquely determine the right data, the right grammar. Yeah?

AUDIENCE: I don't know a lot about this topic, but isn't there some merit in studying constructed languages and the wh-movements that exist there? Because then you have a lot of liberty and get to put it wherever you want, I would imagine?

NORVIN Yeah.

RICHARDS:

AUDIENCE: And so you could ask, is that consistent with the order in any [INAUDIBLE].

NORVIN
RICHARDS: So I don't know if this is getting at your question either, and you should stop me if it doesn't. No, you should just let me ramble on, and then you should tell me afterwards whether it did or not. That's what you should do.

There are experiments in which people try to find out-- in which people ask people to learn languages. So they'll give people languages, and they'll find out things like, if I give you a language that is a possible human language, are you faster at learning that kind of language than you would be if I give you a language that's not a possible human language? So if I give you a language in which the rule is, move all your wh-phrases, how are you at learning that as opposed to a language in which the rule is, move all your wh-phrases up to a maximum of two?

And I don't know whether that kind of experiment has been done for this particular problem. But what we would hope is that, yeah, it's harder to learn the languages where it's up to a maximum of two, the languages-- people do do this kind of experiment. The other kind of natural experiment that's been done-- this is a lot more anecdotal-- there's, what are people like this called now?

There's a savant, so someone whose mental processes are mostly very slow. He needs a lot help with daily life. I think he does live by himself, but he has caregivers who come and help him out. But he's a genius at learning languages. And so I don't know his real name, but his name in the literature is Christopher. He's British. And Christopher loves learning languages, does it for fun. You can give him grammars, and he will learn languages immediately. It takes him a day, and suddenly, he can read and write.

And he's not good at speaking the languages partly because he learns by reading books but he can learn to read and write languages extremely quickly. And they have done some experiments like this with Christopher where you give Christopher languages that are not possible languages to learn, and he can't do that, it turns out. So he can learn languages as long as they are languages that the rules of universal grammar allow.

Now, again, I don't know if they've tried "Move all your wh-phrases up to a maximum of two" with Christopher. But that's another kind of experiment that's been done. Yeah?

AUDIENCE: How many languages will Christopher have learned by the time [INAUDIBLE]? Because there's maybe a possibility that Christopher unconsciously figured it out that it has to be none, one, or all. That's not from Christopher's experience--

NORVIN
RICHARDS: His wide experience with previous languages? So all I can say is that they have given him languages-- they have worried about this. So they have given him languages-- thank you for figuring out the doors. [LAUGHS] They have given him languages that differ from the languages he's learned in some regard.

Most of the languages he's learned are various languages of Europe. He's done like 20 or 30 by now. And so they have given him languages that differ from the languages that he's known to find out whether he can learn them just as quickly as languages that-- because they also get, when they do these experiments, they'll give him a language that does obey some rule of universal grammar and another language that doesn't. But you're absolutely right, that's something they have to watch out for. And all I know is that they have been careful about that. Whether they've been careful enough, I can't swear. Yeah, that's a good point.

Christopher loves doing this, by the way. This is not a hardship they're imposing on Christopher. This is one of his big joys in life, is learning languages.

Yeah, OK. [? Let me ?] back in? Yes. Yeah, questions about this?

OK, all right. All right, so that's it for wh-questions, at least for now. Are there any wh-question questions before we put that aside and go on to something else? OK.

We have spent a lot of time talking about the projection principle-- this idea that if you have a head, and it selects something, that thing needs to be its sister. Then, I've incautiously put the verb "put" in this example where, I don't know, it needs two sisters, or we need to say something else. Anyway, there are strict locality restrictions on the relationship between the head and the thing that it selects.

So we have lexical entries for verbs like "devour," and, "put," and "faint," that say things like "'devour' needs a sister that's a noun phrase"-- and "'put' needs to combine with a noun phrase and also with a prepositional phrase," and "'faint' is intransitive." It had better not combine with anything at all. Yeah, those are all things that we've been saying.

And what we've been saying is, if you have a head that doesn't select for a sister, well, then, it doesn't have a sister-- the end. So "he fainted," "faint," it's an intransitive verb. Doesn't need a sister, doesn't get one, and that's the end, OK? Unless you add an adjunct, but it doesn't get an argument.

But there's nothing comparable in subject position. So when we talk about verbs being transitive or intransitive, we're talking about objects. So people have been talking about transitive and intransitive verbs, literally, for centuries. It's an old observation that there are verbs that need objects and verbs that don't need objects. But there's nothing comparable in subject position. That is, people don't talk about verbs that need subjects and verbs that don't need subjects. Verbs just always have subjects.

So and sometimes, the subjects are a little sketchy. I mean, so we say things like "It rained," and it's not too clear what "it" is supposed to be. You can't be anything else. You don't get to say, "the sky rained," or "God rained," or whatever. It sort of needs to be "it."

And there are other kinds of examples like that, too. So "It seems that John has died," if I say that to you, you're not going to say, "What seems that John has died? What is 'it'? What do you mean by 'it' there?"

I don't mean anything at all. "It" is just there-- it's as though it's there so that the sentence can have a subject, even though the subject doesn't contribute anything to the meaning of the sentence. So yeah, if you compare-- here's a short, kind of sad story.

So "It squeezed John, and it seems that John has died." Is anybody here named John? Good!

[LAUGHTER]

So I should probably have warned you about this early on. Example sentences in linguistics, I mean, they vary. Often, you need a name, and John is one of the classics. Mary is another one.

So the first time I ever taught intro to linguistics, there was a John and a Mary in the class. It was very confining. So since there's no John, I can just let these example sentences rip.

"It squeezed John. It seems that John has died." These two "it"s seem to have a different status. So with the first one, if I say, "It squeezed John," if I say that out of the blue, you're entitled to wonder, "What squeezed John?" That's a reasonable question.

So it's some machine, or a snake, or something. Something squeezed John. But if I say, "it seems that John has died," even if you don't care about John at all, your question is not going to be, "What seems that John has died?" That question doesn't make any sense.

So these two "it"s seem to have a different status. There's a classic way of handling this kind of fact, which is to offer what's called the Extended Projection Principle, which-- yeah, so the Extended Projection Principle. So you know the Projection Principle, which says that heads, when they select, they need to select things that are their sisters, or they need their things they select to be close to them. The Extended Projection Principle says, there needs to be something here. So TP needs to have a specifier. You can't have a sentence that doesn't have a subject in it.

Calling it the Extended Projection Principle, this was Noam Chomsky's idea. And so I feel secure in telling you that it's an obvious hack. The Extended Projection Principle has nothing to do with the Projection Principle. He really just called it that, I think, in order to paint a big red target on it. He's like, why the heck does it work this way, that there has to be something in the specifier of TP? Linguists, go and try to figure out what the heck is going on there.

So the Extended Projection Principle says the specifier of TP-- this is a word I've used before, and I hope I've defined it, but if I haven't, let me define it for you-- the specifier of TP, there has to be something in the specifier of TP. What's the specifier of TP? It's a daughter of TP-- so a daughter of the maximum projection-- that doesn't have the label T-- so it's that thing that the red arrow is pointing to-- and it's not selected, or at least it doesn't have to be selected, by anything.

So here's another place where there has to be something. If you have a transitive verb, the transitive verb has to have a sister, an object. If you have a verb that selects for something else, like "depends" selects for a prepositional phrase headed by "on", and it has to have that prepositional phrase.

Here's another position. It doesn't seem to have anything to do with selection. It doesn't matter what the verb is. There just has to be something in subject position. So it's called the Extended Projection Principle. Calling it a principle is dignifying it too much.

And what we're seeing is that in sentences where there isn't anything else to satisfy the Extended Projection Principle with, then you insert "it." You can insert "it." That's what you're doing in "It seems that John has died."

That is, you have this subject position. There needs to be something there, and so you put this meaningless "it" there. This is why you can't ask questions like, "What seems that John has died?" Because there's nothing meaningful there.

That meaningless version of "it" is called an expletive. There are other names for it, but that's what we usually call it. So it doesn't mean anything. It's just there to satisfy the EPP, the Extended Projection Principle.

I think I may say this on a later slide. Yeah, we've just gone through saying languages vary in various ways. This is a place where languages vary. English has the Extended Projection Principle. There are other languages. French has the Extended Projection principle There are some others. But there are many languages-- in fact, maybe most languages-- that don't have this. So there's languages that are perfectly happy to start the sentence with the verb.

So if you're working on a language, yeah, if you speak Spanish, then you're thinking to yourself, wait, it's fine to say things like, "Seems that John has died" in lots of languages of the world. So yeah, here's another point of cross-linguistic variation. There are languages like English that have this interesting restriction.

OK, now here's another-- I'm telling you about the Extended Protection Principle because I want to introduce you to another kind of movement. So we've talked about movement, and I want to show you another kind. Here's another kind.

We can say things like "The snake squeezed John," or "I put the kumquats in a bowl." And then, so let's concentrate on "The snake squeezed John."

"Squeeze" looks like it's a transitive verb, or at least it has a life as a transitive verb. "John" is being selected by "squeeze." It's the thing that's getting squeezed. Or similarly, in "I put the kumquats in the bowl," "put" is a verb that selects for an object. It also selects for a prepositional phrase. That's what we've been saying.

But then, there are these other forms, these passives-- "John was squeezed," and "The kumquats were put in a bowl." And here, we're in a similar situation to the situation we were in when I first showed you "What did Mary write?" where I was trying to say "What did Mary put in the bowl?"

So with "What did Mary put in the bowl?" I was saying, yeah, "put," we think "put" has to combine with a noun phrase. It's a transitive verb. You can't say, "Mary put in the bowl." That's not a sentence.

Why is it OK to have "put" with no noun phrase after it here? Well, it's because "what" started out here and moved over to there. For "the kumquats were put in a bowl," we're going to say something similar. "Put" is selecting for an object. In this case, it's the kumquats, and the kumquats are moving out of that position into another position.

What's the position they're moving to? Well, they're not wh-moving. They're not wh-words. This isn't a question. This is another kind of movement. So the same reasoning that prompted this to posit wh-movement in order to save our beliefs about how selection works leads us to suspect that there's movement going on here as well.

So we'll start off with "Was squeezed John" or "Were put kumquats in the bowl." And then, the EPP is going to say, oh, there's no subject. So what happens with the passive is that you get rid of the subject. "Was squeezed John," you've gotten rid of the snake that was squeezing John. Or "Were put in the bowl," "Were put the kumquats in the bowl," you've gotten rid of Mary who was putting the kumquats in the bowl.

And then, the EPP says, oh, no, wait, we need something in subject position. And so we move-- in this case "John," or in the other case, "the kumquats"-- into subject positions. So there can be a subject. So the EPP can be satisfied. It's a way of talking about these kinds of examples.

So this is a new kind of movement driven by the EPP. It's called-- sometimes called NP-movement. It's been called other things, but I'll call it NP-movement. It always seems to be movement of NPs.

So you take an NP like "John," and you move it, in this case, out of the position as the sister of "squeeze," where it was selected, into subject position so that the sentence can have a subject, so that TP can have a specifier. It seems to be what's happening.

Let me give you some reasons to take that analysis seriously. But first, is the analysis clear? That's what we think is happening.

Oh, sorry. First, let me show you another kind of NP-movement. So those first ones were passives. Here's another one.

So in "It seems that John is sick," there's an "it" at the beginning of the sentence which is the expletive kind of "it." So it's the kind of "it" that doesn't mean anything. I think it was one of the first kinds of expletives that I showed you. Can't say things like, "What seems that John is sick?" So that "q" doesn't mean anything. It's just there so that TP can have a specifier.

"John" is starting off as the subject of "be sick." And in the first sentence, "John" is staying there in subject position for "be sick." But in the second sentence, "John" appears to be moving.

So it's an analysis, and I'm going to give you some reasons to take this analysis seriously in a second. We're going to say, yeah, "John" is still the subject of "be sick" in the second example. But then, he moves to satisfy the EPP in the higher clause. So the higher verb needs to have a subject, and here, for some reason, we've elected not to merge an expletive. And so instead, we're moving "John" so that "John" can satisfy the EPP upstairs.

Now, let me give you some reasons to take this analysis seriously. So here is an argument for the existence of NP-movement, and it involves idioms. So let's talk for a second about idioms. Idioms are always fun to talk about.

Idioms are combinations of words that don't have to mean what they appear to literally mean. So "kick the bucket" and "buy the farm" are both idioms that mean "die." So if you say "John bought the farm"-- continuing to pick on John, since there are no Johns here-- if you say "John bought the farm," that could mean John purchased a farm. It has its literal meaning. But it can also mean, "John died."

Or, "John kicked the bucket" can literally mean, you know, John kicked a bucket. Yeah, but it can also mean that John died. Do people have these idioms? Are these things that you can say?

AUDIENCE: I've never heard "buy the farm."

NORVIN You've never heard "buy the farm"? Has anybody heard "buy the farm"? OK, all right. So I'm not just making this up. That's good to know. I just have to check for these things.

RICHARDS:

There are many, many idioms that mean "die." "Kick the bucket" and "buy the farm" are two of them. "Spill the beans," just to get things slightly less violent, "spill the beans" means to reveal a secret. "Yawn in Technicolor," is that an idiom you guys know? "Yawn in Technicolor?" No?

I got this one from a book of UCLA slang. There was a period there-- I hope they still do this. I'm not sure they do. The UCLA linguistics department had an undergrad class where the undergrads would compile a dictionary of undergrad slang, and they sold the dictionary. And you could buy the dictionary in the university bookstore. I bought a copy.

There were many, many-- the *UCLA Slang Dictionary* is an interesting document. There are lots and lots of idioms that have to do with being drunk or high. All the idioms, the MIT idioms that I have to do with having too much work to do.

[LAUGHTER]

So I don't know if that's true, but I get that feeling. So yeah, the MIT slang dictionary, if there were an undergrad class like that here, I think it would be a less entertaining read. But I could be wrong. Anyway, that's where I learned this one.

I once talked about this idiom in front of some Australians, and they were all like, oh, yeah, that's an Australian idiom. So it's possible that that's where it came to UCLA, that there were Australian students who were talking about that. Anyway, "yawn in Technicolor"-- impress your friends. Add this to your vocabulary, if it ever comes up.

There are many, many idioms. So yeah, people are clear on what idioms are? So these are strings of words or structures that have literal meanings, I guess-- "yawn in Technicolor," maybe not so much-- but also have these non-literal meanings. And the non-literal meanings are quite-- what? Fragile, I guess.

So "kick the bucket" means die. It also has a literal meaning where you punt a pail. But you can't change "kick" or "bucket" with a synonym and still mean "die."

So if he "punts the bucket," that doesn't mean he died. It just means he literally kicked the bucket, right? Or if he "kicks a pail," if he "kicked the pail," that doesn't mean he died. So it has to be these words to have it have its idiomatic meaning. Idioms are fun. If you get a chance, you can ask your language consultant whether they can think of any idioms that you can think about.

Now, here's the thing. There are a zillion idioms like these where the idiom consists of a verb and some phrase that the verb combines with. So a verb and its object, like in the first three examples, or a verb in prepositional phrase like in the last example-- lots and lots of idioms like that.

So to say that that's the idiom is to say that if you have this idiom in a sentence-- so if you say something like, "John kicked the bucket," the idiomatic part of that sentence is "kick the bucket," right? "John" is not part of the idiom. Anybody can kick the bucket. In fact, all of us will someday.

[LAUGHTER]

Sorry, not to be depressing or anything. So the subject can be anything at all. It's the verb and the object that make the whole thing an idiom, yeah? And then there's the non-idiomatic part that you add to the idiom to make a sentence. Does that make sense?

So idioms are typically parts of sentences that combine with other things to make complete sentences, not other non-idiomatic stuff. But here's the thing-- there are restrictions on idioms. There are no idioms that consist of a subject and a verb where the object can be anything.

So I'm just giving this as an example. It's always hard to exemplify this because, of course, most strings of words are not idioms. But the last slide showed you, there are a zillion idioms where the verb and the object are an idiom-- "kick the bucket," "buy the farm"-- but there are no idioms where it's the subject and the verb.

So here's an example of a non-idiom. There isn't an idiom, "the armadillo bit (blank)." So you can imagine an idiom where if I said, "The armadillo bit John yesterday," it meant "John was very busy yesterday" or something. Or, "The armadillo bit me this morning" means I have a headache, or something. You can imagine it meaning something like that.

But that is not an idiom. And more importantly, there are no idioms like that. Yes?

AUDIENCE: What about like "The cat got your tongue"?

NORVIN RICHARDS: Well, that's a nice example. Notice, though, that the object is part of the idiom, right? So actually, "Cat got (blank)'s tongue." Actually, can the possessor of the tongue be anyone at all? Can I say, "The cat got John's tongue?" Meaning John had a hard time thinking of what to say?

I think the easiest way for me to use this idiom is to ask someone, "Cat got your tongue?" If I have a hard time coming up with something to say, can I say "The cat got my tongue?" So there may or may not be a blank here. Maybe there should be "or" here. But anyway, the subject is indeed part of the idiom, but so is the object. So this is a nice-- you're making me refine what I just said, which is important.

It's not the idioms can't contain the subject. They can. This is a nice example. But they also have to contain the object. Yes?

What if [INAUDIBLE] something like "his tongue."

The cat got his tongue-- can you say that?

AUDIENCE: [INAUDIBLE].

AUDIENCE: [INAUDIBLE].

AUDIENCE: Yeah.

NORVIN Yeah, my son--

RICHARDS:

AUDIENCE: That's when he's like, what's wrong with this?

NORVIN Cat got his tongue. My son, who's 11, is shy, and he's having a hard time saying anything in front of people he

RICHARDS: doesn't know. And I say, "Oh, the cat got his tongue."

AUDIENCE: [INAUDIBLE].

NORVIN Maybe, yeah, yeah, yeah. So and this is why I waffled about whether there was a blank here. The fact that there

RICHARDS: can be a blank here is interesting. But the point is-- there are several points to make. But one is, look, "tongue" is also part of this idiom.

So the object is part of the idiom. You're absolutely right that you might have some options about what to put here. Raquel?

AUDIENCE: I feel like if you just have a, quote, "idiom," it's just like a verb.

NORVIN Yep.

RICHARDS:

AUDIENCE: And then, if you just say that that's an alternative meaning, or like a slang meaning of that verb, like "flame," like, get really angry--

NORVIN Flame.

RICHARDS:

AUDIENCE: --or something like that. Yeah, people don't call it an idiom. They just say, oh, yeah, "flame" is just [INAUDIBLE].

NORVIN That's a nice example. So maybe this is a way to think about this. If you're thinking about a tree here-- we'll put a

RICHARDS: tree here. So what we're seeing is there are idioms-- I started by saying there idioms like this where this whole thing is the idiom-- the verb and a noun phrase after it like, "buy the farm." Raquel is raising the possibility that there could be idioms that are just this size, although, as you say, that's not usually what you call them.

So maybe "flame," where the subject and the object are not part of that idiom. So I can flame you, you can flame me, anyone can flame anyone. Those are not part of the idiom. The idiom is just the verb, "flame." Yeah, so yeah, we could call that an idiom or not.

And then, earlier pointed out, "cat got your tongue," there are bigger idioms where the subject and the verb and the object are all part of the idiom. And then, there's questions about how do you get a possessor into here? I'm trying to think about that.

So a way to talk about this, then, is to say, yeah, idioms-- but the point that I'm making-- attempting to make-- is there aren't any idioms that are just this. I wish I had colored chalk or something. There aren't any idioms that are just the subject and the verb, and the object can be anything at all.

There's no "The armadillo bit John." There's no "The kumquats have fooled Mary," right? Where "The kumquats have fooled Mary" means Mary is daydreaming. There aren't idioms like that. Yeah?

AUDIENCE: So is it basically like it has to be [INAUDIBLE]?

NORVIN
RICHARDS: It's looking like it, right? Yeah, something like that. Although, how you're going to get "his" or "your" here in "the cat got your tongue," that's an interesting question, because that's presumably part of this noun phrase. But sweeping that potential problem under the rug, yeah, it's just, [? those ?] idioms have to be constituents, yeah.

Yeah? OK? I'm pausing here because here I am boldly asserting there is no-- of course, there is no idiom, "the armadillo bit." But if you pick any random verb and noun, it's probably not an idiom. So there also isn't an idiom, "bit the armadillo," right? That could have been an idiom, but it isn't.

So "John bit the armadillo last night" that doesn't mean "John worked hard last night." Yeah, it could have, but it doesn't. So claims of this kind are always a little weird. You should all go home and try to think, annoy your friends, and your relatives, and your roommates trying to come up with idioms that have this shape. But there don't seem to be any.

Yeah? OK, good. I'm going to move quickly to the next slide before somebody comes up with one.

[LAUGHTER]

This isn't because the subject can't be part of the idiom. This has already come up. So "The cat got your tongue," "The cat is out of the bag," "The shit will hit the fan," there are lots of idioms. So "The shit will hit the fan" has a literal meaning.

[LAUGHTER]

But it also has a figurative meaning, like the situation will get dramatically worse quickly, or something like that. That's what it means. "The cat is out of the bag," yeah, there could be a literal cat in a literal bag, or it could mean the secret is out. That's the other thing it can mean. There are many idioms about cats for some reason.

So yeah, there are idioms like "John will buy the farm." There are idioms like "The shit will hit the fan." Yeah, that's what we've seen. And there are no idioms like "The armadillo will bite John." Good.

Maybe it's as though idioms must be constituents. Yeah, nicely, nicely pointed out. So OK, good, now we know something about idioms. So "The shit hit the fan," it's a fine idiom. "The shit seemed to hit the fan," "The shit seemed to be likely to hit the fan," these are all fine, and they all have idiomatic readings.

But the things that I have circled are surely not constituents, right? So "The shit hit the fan" is a constituent, but "The shit seemed to hit the fan"-- "seem to" is not part of the idiom. These sentences are OK, and they have their idiomatic meanings. "Everything was fine all day until suddenly, at 12:35, the shit seemed to hit the fan"-- fine. Sad, of course, but grammatical.

But "seem to" is not part of the idiom. It's like John in "John bought the farm." The idiom is, "The shit hit the fan." Or "The shit hit the fan" in "The shit seemed to be likely to hit the fan." So "I walked into the office, and everything seemed very precarious. Tempers were high. The shit seemed to be likely to hit the fan at any minute"-- yeah, perfectly fine. Has the idiomatic reading. But these things are quite far apart from each other.

But if we believe in NP-movement, then we have a story. The story goes like this. How do you say, "The shit seemed to hit the fan"? Well, yeah, "the shit" and "hit the fan" are far apart from each other when you're done, but you start off with "seemed, the shit to hit the fan," and then "the shit" moved into the specifier of TP in the higher clause. That subject moves up to become the subject of the higher thing because of the EPP. The EPP wants there to be a subject up there.

Another option would be to put an expletive there and say, "It seemed that the shit had hit the fan," or whatever-- to put an "it" there. But if you're not going to do that, you need to move the subject of the lower clause up into the higher clause. The consequence of that is that by the time you're done, "The shit hit the fan" is no longer a constituent. But it was once, and apparently, that's what matters. It needs to start as a constituent.

Maybe one way to think about it would be, the idiom is a really big and complicated lexical item. If you're going to merge it, you need to merge it all at once. It's one way to think about it, anyway. Yeah?

AUDIENCE: Yeah, question.

NORVIN Yeah.

RICHARDS:

AUDIENCE: So first of all, what would happen if you wanted to say, "The shit was going to hit the fan?"

NORVIN Oh, good question. So "The shit hit the fan." "The shit--" very nice point. "The shit will hit the fan." "The shit might hit the fan." "The shit is going to hit the fan" Yeah, there are lots of things you can put in here.

RICHARDS:

There is-- that a very nice point. There is a classic response to this point, which is to say, yeah, what you've discovered is there's even more NP-movement than we thought. So if I-- let me get a fresh board down here. How are we doing for time? Yeah, this would be a good place to stop, probably.

The way I have been drawing trees for you, I've been drawing trees like, "John will eat the kumquats." I've been drawing trees like this, yeah? Does this look familiar? Does anybody have any questions about this tree?

This should be painless at this point. If it's painful, then you should stop me. Is this OK?

So we've got a verb phrase that consists of a verb and an object, "eat the kumquats." "Eat" is selecting for the object. And then we've said that words like "will" are instances of T, tense, and that T is the phrase, whose specifier, the subjects it's in-- actually, we have a name now for the fact that the subject sits there. That's the Extended Projection Principle.

AUDIENCE: Yeah.

NORVIN
RICHARDS: And we've said there is some force that demands that there be something here. That's part of why John was here. Your point, which is a very well-taken one, is that if I say, "The shit will hit the fan--" remind me to erase this before we leave-- I've been going quickly partly in the hope that nobody would notice this, but yes, problem. This and this seemed to be the constituent, the idiom, but "will" is not part of the idiom.

And there's a classic way of dealing with this problem. This is one of the classic arguments for something that is now widely believed, which is that the subject, although it is in the specifier of TP, it doesn't actually start there. I've been drawing trees where it starts there, but it actually starts lower. It starts inside the verb phrase, and it moves up to here.

AUDIENCE: [INAUDIBLE]?

NORVIN
RICHARDS: Yeah, so that the real derivation for this-- this is what I've been concealing from you-- but the real derivation from this starts with the subject inside the verb phrase-- I would say it's a specifier of the verb phrase-- and it is raising to the specifier of TP always.

So I've been talking so far as though the specifier of TP-- we've talked now about some cases where something moves into the specifier of TP. But from the earlier kinds of trees I was drawing for you, I was making it sound like the specifier of TP, sometimes, something is just merged there. It doesn't move there.

For exactly the reason that you've just pointed out, people think that that's wrong-- that really, what's happening is that the subject always starts lower than TP and raises into the specifier of TP. And in English, it has to raise into the specifier of TP because of the EPP. And this argument from the behavior of idioms, this is one of the classic arguments for that conclusion, yeah.

This is something that was discovered in the late '80s people first started saying that. It's called the VP internal subject hypothesis. And by now, it's very widely assumed to be true.

Yeah, I was planning to conceal this from you because this is 24.900, but I should know better than to try to conceal things from you guys. Yeah, does that answer your question?

AUDIENCE: Yeah.

NORVIN
RICHARDS: Cool.

AUDIENCE: Is this an example about knowledge theory, where it's like we wanted idiom to be a constituent, but it matters more to satisfy the EPP?

NORVIN

No. I see what you mean. The way people standardly think about this, anyway, it's something more like-- you're raising an interesting question. It would be interesting to think of ways of distinguishing these theories from each other.

RICHARDS:

The way people think about this, it's something more like-- it's sort of-- mm. Remember the Projection Principle? So in the Projection Principle, it says the verb absolutely, absolutely has to have a sister if it's transitive, let's say. It has to have a noun phrase as its sister.

And then, there are these other forces, things like wh-movement that say, oh, but wait, I want this thing to be over here instead. And so we say, yeah, it starts here, and then it moves. So it's as though there are these mutually incompatible requirements which are met by having a derivation, where something starts in one position and then moves to another position. And the idea is that the Projection Principle is satisfied because, well, you satisfied it first, at the beginning, and then later you did other things.

We're going to talk more-- I think I promised that we would only do another day or two of syntax, so I'm running out of room in which to promise that we will talk about things. But I think we'll have a chance to talk more about the nature of the derivation and the order in which you do things, like the order in which you have to satisfy things. But the standard way people talk about this kind of thing is more like the rule-ordering kinds of things we talked about. It's like there is an early stage at which you must obey the Projection Principle, or at which you must obey this condition on idioms, and then there are other things that come along and mess everything up subsequently. That's a way people talk about this.

Any questions about idioms, about constituents? Anything else? NP-movement? Awesome.

So let me make sure-- yes, this is an excellent place to stop. So let me ask again, are there any other questions? Or shall we just stop? Cool, good. Now you know slightly more than I was planning to teach you about the behavior of subjects. And we'll pick it up here next time.