

## 1 Root infinitives

### 1.1 Properties of root infinitives

#### Root infinitives in the world

Infinitive verbs are common in child speech, crosslinguistically.

- (1) Hun sove.  
she sleep-INF  
'She sleeps.' (Jens [Da] 2;0)
- (2) Dormir petit bébé.  
sleep-INF little baby  
'Little baby sleep.' (Daniel [Fr] 1;11)
- (3) Earst kleine boekje lezen.  
first little book read-INF  
'First (I/we) read little book.' (Hein [Du] 2;6)
- (4) S[ch]okolade holen.  
chocolate get  
'I got chocolate(?)' (Andreas [Ge] 2;1)

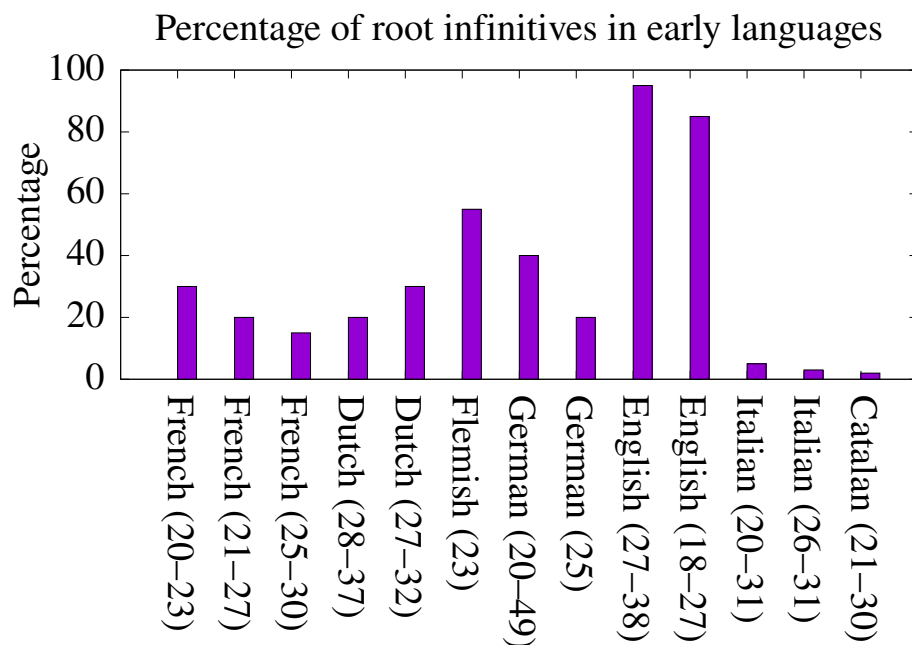
#### Root infinitives in English

In fact, having observed this phenomenon in such a wide variety of languages, it provides a somewhat different way to look at English examples like these:

- (5) a. Papa have it. (Eve 1;6)
- b. Cromer wear glasses. (Eve 2;0)
- c. Marie go. (Sarah 2;3)
- d. Mumma ride horsie. (Sarah 2;6)

Whereas they were for a long time viewed as cases showing that children acquiring English don't have control of the *inflection* for verbs, it might also be yet another example of the same phenomenon—the infinitive forms of the verbs. In English, infinitive forms are generally the bare stems.

### Percentage of root infinitives in early languages



### Occurrence of root infinitives differ

Root infinitives have by now been seen in a lot of the world's languages. They are generally seen from around 2 years of age (the point when children start using multi-word utterances) up until about 3 years of age. At this point, there is generally a sharp dropoff of root infinitive forms.

However, *some* languages—Spanish, Catalan, and Italian being among them—do not seem to show evidence of root infinitives at this stage. Children generally use correctly inflected forms.

## 1.2 Origins of root infinitives

### Origins of the root infinitive stage

This presents a bit of a puzzle—on one hand, the fact that the appearance of root infinitives seems to rely on the target language, suggests that there may be some property of the PLD the child receives that triggers (or fails to trigger) the use of root infinitives. (Even though of course adults don't really use them in any of these languages.)

On the other hand, the fact that the phenomenon is (a) so widespread, and (b) fairly consistently over by around age 3, suggests that it might have something

more to do with a *biological* course of acquisition (cf. baby teeth, puberty, walking).

### Maturation of language

The idea that root infinitives (and a few other phenomena we'll see) develop on a *maturational schedule* is by now the most widely held view (particularly among those looking at the acquisition of syntax from a theoretical perspective).

The goal in an explanation of (a) why root infinitives occur, and (b) why they only occur in certain languages, is to pinpoint the place(s) in which the child syntax differs from the adult's, such that the difference only has an effect in the languages that show root infinitives.

### Restrictions on root infinitives

One clue to what causes root infinitives is the observation that they seem to be prevented in *wh*-questions. Below are figures from Haegeman (1995), for a Dutch child 2;4–3;1. The same has been shown for French as well (Crisma 1992), although it is not so clear in English (Bromberg & Wexler 1995).

	Finite	Non-finite
Declaratives	3768	721
<i>Wh</i> -questions	80	2

Also: auxiliaries don't appear in the infinitive, and in German, only subjects can precede a root infinitive verb. Something about the syntax of root infinitives that is incompatible with these constructions.

## 2 Analyses of root infinitives

### 2.1 The truncation model

#### Explaining root infinitives

What are root infinitives? What does it mean that they are not marked for tense or agreement?

A starting point might be to suppose something a bit like the small clause hypothesis discussed last time—sentences in which the verb is not tensed might be sentences where the IP is missing in the child's structure.

The idea would be that children *know* about IP but that their structures sometimes don't include it.

### **Explaining the properties**

If IP is missing in root infinitives, this explains why the children's nonfinite verbs do not move to I—there is no place for them to move to.

This could explain why auxiliaries (*have, be, do*) never occur as root infinitives, if we assume (as some do) that these things start in I. (Note though that last time I suggested that auxiliaries start lower.)

What about *wh*-questions? Why do they seem to be out in root infinitives?

### **Truncation**

The fact that *wh*-questions don't occur with root infinitives suggests a “problem” with CP in root infinitives. If we suppose root infinitives are missing IP, then more specifically, we might suppose that root infinitives are also missing CP.

This idea led to “the truncation model” (proposed by Rizzi 1993/1994), under which children's structures *can* be as complex as adult structures (so, still basically following the full competence hypothesis), but where children sometimes “stop early” as they're building it up. Adults build their trees all the way to CP, children might build just a VP and then stop. Or a VP and an IP. Or the whole CP.

### **Axiom on clausal representation**

Rizzi's proposal is essentially that the following “axiom” is part of adult language knowledge, but that children lack this specific bit of grammar (until the root infinitive stage ends).

### **Axiom on clausal representation**

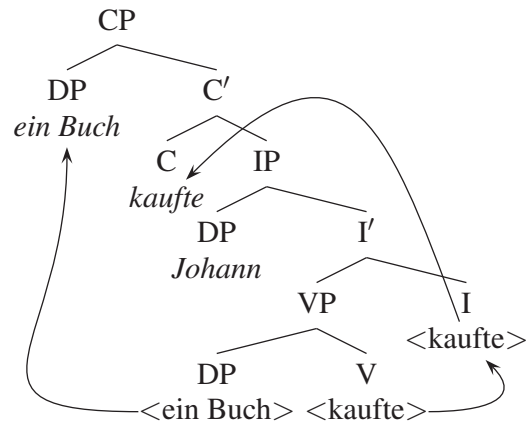
CP is the root of all clauses.

So, until children acquire/mature this axiom, they are content with trees that only go partway up to CP.

### **Truncation and V2**

This also makes sense out of the German V2 facts—that only subjects come precede infinitives. If a root infinitive is necessarily missing CP, the “first position” landing site is gone, and everything stays in its base order.

(Where’s the subject? We’ll return to that.)



## 2.2 The null auxiliary hypothesis

### An alternative approach

An alternative approach to the root infinitives in child language has been to suppose that they arise from a full clause structure, in which an auxiliary (like *will*, *could*, *be*) is present but is not pronounced (a “null auxiliary”) (Guasti & Rizzi 1996).

This approach accounts for the morphological form, and makes sense out of English questions like “Where Daddy go?” (since it is really more like “Where did Daddy go?” except with “did” unpronounced).

### Predictions

Poeppel & Wexler (1993) point out that if root infinitives involve a null auxiliary, we would expect that normal movement of I to C should still occur, and the normal V2 order (though with “V” silent) should be possible. Specifically, we should expect to find “Object (Aux) Subject Verb” or “Adverb (Aux) Subject (Object) Verb” orders, whether “Aux” is silent or pronounced.

If, on the other hand, a root infinitive is really an infinitive (with no hidden auxiliary), then, we would not expect it to move to I, and we would not expect I to move to C, so we would not expect a V2 structure (allowing an object to come first).

### Result

Poeppel & Wexler counted 50 object-first or adverb-first examples in Andreas' (2;1) transcript, and found that all of them had a finite verb, in second position.

So, we (or, rather, Poeppel & Wexler) located a place where the null auxiliary hypothesis and the truncation model make different predictions, and tested to see which prediction was met.

The ultimate result (subject-first and adverb-first sentences are all finite) went against the null auxiliary hypothesis.

## **2.3 Which languages have root infinitives?**

### **Dividing languages**

Recall that Spanish, Italian, and Catalan do not really show root infinitives, whereas French, Dutch, German too. In general, there seem to be two kinds of languages, those that have root infinitives and those that don't.

Why do some languages lack root infinitives?

One strong clue to this is that it seems (Wexler 1998) that languages that allow null subjects *do not* have root infinitives.

### **Null subject languages and root infinitives**

To get an idea of why that might be, we need to know something about the syntax of null subject languages, and how that might relate to root infinitives.

Under Rizzi's view of the truncation model, this winds up being tied up with verb movement. His proposal is that one of the properties of null subject languages is that all verbs must move up to I, and therefore there is no way to create a grammatical structure that lacks I (whether the verb is finite or infinitive). But if I is there, a main verb will be finite.

## **2.4 Summary**

### **Summary**

- Root infinitives occur in many languages.
- Root infinitives do not occur in all languages.

- The phenomenon seems to be on a maturational schedule.
- Both the truncation model and the null auxiliary model can make sense of some of the patterns.
- The null auxiliary model seems not to capture German properly.

### **Preview**

Next time, we'll look at another model, on a par with—but different from—the truncation model, that we will also want to consider with respect to these questions.

We will refer to it as the “Agr/Tense Omission Model” (ATOM), a name that will make somewhat more sense shortly. But the questions we will want to address with this model will be basically the same...

- Why are there root infinitives?
- Why the anti-correlation between them and being a null subject language?
- How does ATOM's predictions differ from the truncation model's?

## **3 Advances in syntax**

### **3.1 Splitting IP**

#### **History**

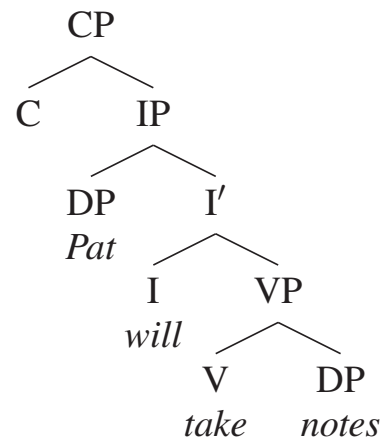
As years go by, syntactic research advances, and (generally on the basis of the properties of adult languages) modifications are made to our understanding of the syntactic principles and representations.

Case in point: the decomposition of IP (standard view 1989–1995).

This will come up in some of what you read, so I want to go over it quickly.

### Monolithic IP

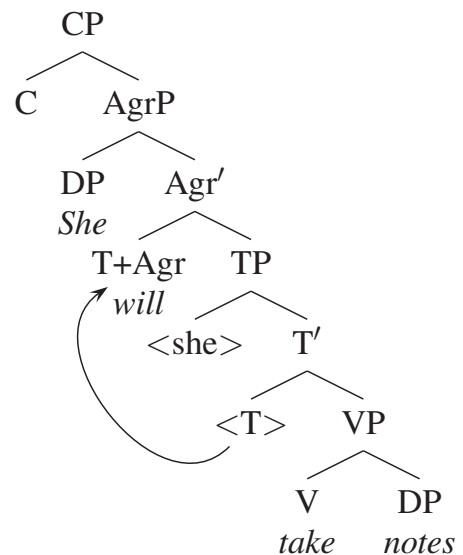
Recall that the earlier (LX250, pre-1989) structure consists basically of CP—IP—VP. Here I've started assuming that all sentences are CPs, even though in statements the C is generally silent and inactive.



### Split IP

For various reasons, Pollock (1989) proposed that the functions of tense and agreement should be split apart, each getting their own functional projection in the structure. (Some minor simplifications here.)

Note: this adds another level at which the structure might be truncated under the truncation model.



## 3.2 VP-internal subjects

### VP-internal subjects

Another advancement in theoretical syntax from about the same time (Sportiche 1988) was the idea that the subject of a sentence does not in fact start in the specifier of IP, but rather starts in the specifier of VP, and moves to the specifier of IP. One argument for this idea comes from sentences like these:

- (6) All the bees have left.
- (7) The bees have all left.

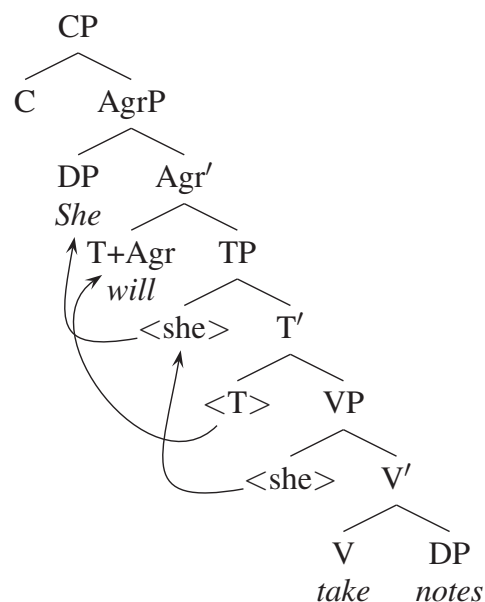


The idea here is that “all the bees” is originally together as a DP in both cases, but that in (7), “the bees” has moved away leaving “all” behind (and showing us the original position of the subject).

### VP-internal subjects

So, adding in this additional assumption, the tree would now look like this.

Note that this too helps when we consider the truncation model. Now it makes sense why there could still be subjects at all in root infinitives, where the structure stops at VP.



## 4 The role of syntactic theory

### 4.1 Cooperation

#### Theoretical syntax informs the study of syntax acquisition

It should be obvious, perhaps, but as we advance in our understanding of theoretical syntax, our models of the acquisition of syntax need to reflect these advances.

In particular, realizing that the adult syntax is more complicated affects what we can attribute to the child. And there are benefits, too—it would remain mysterious in child language acquisition why subjects are possible in root infinitives if we didn’t adopt the VP-internal subject hypothesis. And some of the subject case facts we’ll see next time are made clearer using AgrP.

#### The study of syntax acquisition informs theoretical syntax

At the same time, there are some things that we can learn about the properties of adult syntax (hence, about the object of study in theoretical syntax) by studying the patterns of acquisition, once we have some theoretical understanding of it.

These are a little harder to give examples of without actually going into more advanced syntax, but I'll try to show you a case next time. And in principle, both endeavors complement one another.

## 4.2 Simplification

### Simplification

The last point on this is that sometimes the additional precision that the VP-internal subject hypothesis or the Split-IP hypothesis offers is not relevant to the specific things we're looking at.

It is common in those cases to simplify the trees—to show trees with just an IP (rather than TP and AgrP), or to show trees where the subject just starts in the specifier of IP (rather than moving there from the specifier of VP). This is generally not to be understood as a positive claim that the structures *are* simpler (unless it is explicitly indicated as such), but as a kind of a shorthand, sort of like a “triangle” in the tree.