1 Language acquisition

1.1 Acquisition and universals

Connecting universals and acquisition

We’ve by now seen quite a number of areas where languages seem to show some regularity that is not logically necessary. There seem to be correlations in word order, adverb ordering, etc., that seem consistent across languages.

There are a few ways that things like this could arise. One is something about the physiology of production or perception—this could arguably be what is behind the universals about color naming and vowel spaces (maximizing distinctness). Another might be general cognitive processes, maybe things are easier to process if the topic is mentioned first, etc., because that’s how we think. Still another might be shared history and culture, though it’s harder to point to a specific example.

Acquirability

The theme of the view of language you generally hear about in Linguistics courses is that people are to a certain extent “hard-wired” to acquire language. To the extent that this is true, there are two further places universals could come from:

- Properties of the acquisition mechanism
- Properties of the language storage mechanism

That is, the acquisition mechanism may be looking for certain things and ignore other things, and only the things it attends to will ever make into language. The way that language knowledge is represented in the brain may also have an effect, by, e.g., rendering certain things non-distinct, such that no language can make those distinctions.

Maturation

Considering specifically the process of language acquisition:
• It is a general human characteristic, not under conscious or motivational control.

• It is capable of acquiring the linguistic systems of any natural language it is put in contact with, possibly several at once.

• There is no particular reason to assume that the acquisition mechanism itself does not undergo development.

This last point is quite relevant to the topics for today—there seems to be some cross-human characteristics that correlate with age in the domain of language acquisition. Other things correlate with age (loss of baby teeth, walking, puberty, theory of mind), too, and like these, the acquisition properties don’t seem particularly dependent on input.

2 Tense, agreement, and case marking

2.1 Basic observations about adult languages

Tense and agreement

The area we will be focusing on is the interacting development of tense, agreement, and case marking. Tense marking being the way languages differentiate past from present; agreement generally referring to agreement in person, number, gender, or other class between the subject and the verb; case marking being about marking grammatical functions such as subject and object.

Languages differ on the surface in how they realize these things. Some languages don’t show any reflexes at all (Chinese, for example, does not mark tense or agreement or case in any obvious way), some languages have pretty complex systems (Finnish distinguishes a lot of different cases, Swahili shows agreement not only with subjects but also with objects).

Finiteness

Important to this discussion is the concept of “finiteness,” which you can think of a property that non-“infinitives” have. An infinitive is a verbal form that does not seem to be anchored in time and almost never shows agreement. One often finds infinitive forms in the complement of verbs like begin, or want: I want to leave, I began to leave. Finite forms show tense and/or agreement.
In English, there are three forms that we would class as nonfinite: *to*-infinitives (as in *I want to leave*), bare infinitives (as in *I saw John leave*), and *ing*-forms (as in *I saw John swimming*).

**Root finiteness**

It is a general property of language that (at least to the extent that you can see it), main ("root") clauses are necessarily finite.

1. I am going to the store.
2. I went to the store.
3. * I go to the store.

There are certain exceptions for special uses, like in "Mad Magazine" sentences (*What? Me go to the store*?).

**Subjects and case**

As we’ve had occasion to observe, languages often mark the grammatical function of noun phrases (sometimes reflected on the article [German] or adjectives [Russian] as well). In English, we see it on pronouns (*I* is a subject, *me* is an object).

Incidentally, to return to the "Mad Magazine" sentences, notice that there, the subject is in the object (accusative) case: *What? Me go to the store?*. And if you are asked "Who did the reading?" the response would be "(Not) me"—also, arguably a subject in the full form of the answer ("Me [did the reading]"). What’s special about both situations is that there is no finite verb—these examples suggest that the object form is a kind of “default” form in English. In most other languages, you would use a nominative form here, this is a place where English is special (Schütze 2001).

### 2.2 Tense/agreement at age two

**Getting to two**

Children generally start producing their first meaningful (single word) expressions around 10–12 months, and start to combine words into multi-word utterances around 20–24 months (at which point there is also a “vocabulary spurt,” learning
around 5–9 words a day from there until around age 6) (Guasti 2002). It is really at this two-year-old stage that we can start to consider the state of a child’s syntax.

Child syntax at age two is not quite like that of adults. Child English has been the subject of a great deal of study. And it was observed that children say stuff like...

**Early English verbs**

(4) 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)

That is, they seem to leave off the inflectional endings (tense, agreement). A common view of this was that children simply take a while to get the inflectional endings down—they kind of wanted to say has, wears, goes, rides, but they weren’t able to express the tense/agreement endings yet. Although they do provide these endings sometimes—so it’s not that they can’t produce endings (or even don’t know what they are), they just sometimes fail to use them.

**Root infinitives: Danish, French**

Looking around at languages other than English, it was observed that in a lot of them, children between the ages of 2;0 and 3;0 (roughly) often use (explicitly) infinitive main verbs, even though the adult languages don’t allow these.

(5) Hun sove.  
  she sleep-INF  
  ‘She sleeps.’ (Jens [Da] 2;0)

(6) Dormir petit bébé.  
  sleep-INF little baby  
  ‘Little baby sleep.’ (Daniel [Fr] 1;11)

**Root infinitives: Dutch, German**

(7) Earst kleine boekje lezen.  
  first little book read-INF  
  ‘First (I/we) read little book.’ (Hein [Du] 2;6)
(8) S[ch]okolade holen.
    chocolate get
    ‘I got chocolate(?)’
    (Andreas [Ge] 2;1)

Root infinitives: English?
Having observed root infinitives in a wide variety of languages, we can revisit the English cases from before.

(9)  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)

Maybe it’s not that English children don’t have the inflection under control—maybe they’re just using infinitives, like in the other languages.

Root infinitives vs. time – Danish [Hamann 2002]

There seems to be a pretty dramatic decline right around age 3;0. This happens in pretty much every language that this has been observed in.

2.3 Missing subjects

Omission of subjects
Another thing that children around age 2;0 commonly do is leave out subjects.

(10) Drop bean.
(11) Fix Mommy shoe.
(12) Helping Mommy.
(13) Want go get it.

And it is preferentially *subjects* (not just noun phrases in general). Hyams & Wexler (1993) argue that this isn’t solely due to the tendency for subjects to be topics (that is, old information, recoverable, omittable).

**Subject vs. object drop**

![Subject drop vs. object drop graph]

**Null subjects and finiteness go together**

There is also generally a dropoff in the omission of subjects as well. And it’s also usually around age 3;0.

This suggests that there is some kind of connection between the two—a common cause, or one causes the other. A kind of sensible explanation is that infinitives allow for null subjects (as they do for adults: *I want John to leave*—*I want _ to leave*).
Root infinitives and null subjects vs. time

Jens' Null Subjects

Jens' Percent Infinitives

Anne's Null Subjects

Anne's Percent Infinitives
2.4 Case errors

Subject errors in English

It has also been observed that children at this stage of the acquisition of English make errors in their use of subject pronouns. (And: look at the form of the verbs there.)

(14) a. Him fall down. (Nina 2;3.14, file 17)
    b. Her have a big mouth. (Nina 2;2.6, file 13)

Finiteness versus case

Loeb & Leonard (1991) report that children don’t make these case errors when the verb form is finite. It’s only with the root infinitives that case errors arise (and even then, only part of the time).

Loeb & Leonard (1991), 7 normally developing children:

<table>
<thead>
<tr>
<th>subject</th>
<th>Finite</th>
<th>Nonfinite</th>
</tr>
</thead>
<tbody>
<tr>
<td>he/she</td>
<td>436</td>
<td>75</td>
</tr>
<tr>
<td>him/her</td>
<td>4</td>
<td>28</td>
</tr>
<tr>
<td>% non-NOM</td>
<td>0.9%</td>
<td>27%</td>
</tr>
</tbody>
</table>
Additional observations

Schütze & Waxler (1996) follow this up by studying the transcripts of three further children (Nina, Peter, and Sarah, from the CHILDES database), and find basically the same pattern, but with some interesting additional observations.

There are just about no errors with pronouns apart from subjects. All of the objects children use come out in the correct object case, and the same (just about) with the possessors. The children know the case forms.

Almost all of the data support the generalization that when the verb is finite, the subject is nominative. Of the exceptions, most of the non-nominative subjects they found with a finite verb occurred with a past tense verb. (Weird, no?)

### Nina, Peter, Sarah

<table>
<thead>
<tr>
<th>Nina (1sg)</th>
<th>Finite</th>
<th>Nonfinite</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>40</td>
<td>45</td>
</tr>
<tr>
<td>me</td>
<td>2</td>
<td>13</td>
</tr>
<tr>
<td>% non-NOM</td>
<td>5%</td>
<td>22%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Peter (1sg)</th>
<th>Finite</th>
<th>Nonfinite</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>243</td>
<td>29</td>
</tr>
<tr>
<td>me/my</td>
<td>3</td>
<td>8</td>
</tr>
<tr>
<td>% non-NOM</td>
<td>1.2%</td>
<td>22%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Nina (3sg)</th>
<th>Finite</th>
<th>Nonfinite</th>
</tr>
</thead>
<tbody>
<tr>
<td>he/she</td>
<td>255</td>
<td>139</td>
</tr>
<tr>
<td>him/her</td>
<td>14</td>
<td>120</td>
</tr>
<tr>
<td>% non-NOM</td>
<td>5%</td>
<td>46%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sarah (3sgf)</th>
<th>Finite</th>
<th>Nonfinite</th>
</tr>
</thead>
<tbody>
<tr>
<td>she</td>
<td>21</td>
<td>24</td>
</tr>
<tr>
<td>her</td>
<td>3</td>
<td>14</td>
</tr>
<tr>
<td>% non-NOM</td>
<td>13%</td>
<td>37%</td>
</tr>
</tbody>
</table>

**Default case: English vs. the rest**

Subject case errors are observed in Child English, but not usually in other languages. Why? In English, object case (accusative) is the default. In most other languages, it’s subject case (nominative) instead. English is kind of weird in this respect. For example, German:

(15) Der, den habe ich gesehen.
    he, him have I seen.
    ‘He, him I saw.’

This might explain why subject case errors are so apparent in English but not in other languages. If children are using the default case in subject position, it will
be an obvious error in English. In German, the default case is the same as it would have been anyway.

2.5 Languages without Root Infinitives

A kind of paradox

Once people started looking for “optional infinitives” in child language, they were found all over the place. All with basically the same character: use of a default verb form that behaves and generally looks like an infinitive verb, which disappears right around age 3;0. This points to something biologically determined.

At the same time, there are lots of languages that people have looked at where we don’t seem to find this behavior. In these languages (including Spanish, Catalan, Italian), children seem to more or less use inflection correctly from the beginning.

### Percentage of root infinitives in early languages

![Percentage of root infinitives in early languages](image)

Dividing languages

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?

Wexler (1998) proposes the following generalization: languages that allow null subjects do not have root infinitives.

3 Explanations

3.1 Separating tense and agreement

What there is to account for

We’ve seen several things so far that seem to characterize child (morpho)syntax between ages 2 to 3.

- They use nonfinite forms (in non-null-subject languages)
- They drop subjects (where adults require them)
- They use default case for the subject (clearest in English)

The question is, then, can we isolate a property of child grammar from which these things would follow?

A simple account that doesn’t quite work

A kind of obvious sort of account would suppose that the problem is with the I node in the structure. In adult syntax, this is arguably responsible for a lot of these things (subject case, finiteness, and—when the verb is non-finite—allowing null subjects). If children sometimes, say, leave I out of their syntactic representations, then we might expect to see root infinitives and either a missing or default-case subject.

The problem is: some of the root infinitives occur with nominative subjects (in English). Also, there are a few accusative subjects with past tense verbs.

Separating tense and agreement

Schütze & Wexler (1996) and Wexler (1998) propose that we can make sense of this if we assume that tense and agreement are two different things, and that children can independently leave one or the other one out of their representations. Each has its own responsibilities:
• Tense (when past) leads to a past tense verb.
• Tense (when missing/non-finite) allows null subjects.
• Agreement leads to subject agreement and to subject case.

So there are four options open to children in the 2–3 age range: both tense and agreement, tense but no agreement, agreement but no tense, or neither. (Schütze and Wexler call this the “Agreement/Tense Omission Model.”)

Verbal inflection in English

• English verbs appear either in a bare form, or with either –s or –ed suffixes.
• The –ed corresponds to past tense, but there is no reflex of subject agreement. Only (past) tense is needed for a verb to take the –ed ending.
• The –s corresponds to 3sg subject, present tense. Both (present) tense and (3sg) agreement are needed for a verb to take the –s ending.

Schütze & Wexler (1996) suggest (following Halle & Marantz, 1993) that if the requirements for an inflectional affix aren’t met, a bare (nonfinite, default) form is used instead.

Predictions—basically borne out

• Verbs with the –s ending should never have accusative subjects in English. The –s tells us that there is agreement, and agreement is responsible for determining nominative case on the subject.
• Verbs with the –ed ending might have accusative subjects in English, since all we know for sure is that tense is there, not whether agreement is.
• Children have the “option” of choosing any of the four possible combinations (having/lacking tense, having/lacking agreement), so sometimes they’ll say things like adults.
• Since one of the only detectible errors is a missing –s, it’s relatively easy for children to make this error—three of the four possible combinations lead to a bare form.
3.2 Root infinitives and null subject languages

Null subject vs. non-null-subject languages

Wexler (1998) has a proposal for why null subject languages don’t show root infinitives. First, the difference between null-subject and non-null-subject languages:

- The verbal agreement can effectively serve as a subject in null subject languages, but not in null-subject languages.
- If you leave out a subject in null subject languages, the agreement plays the subject’s role.
- Null subject languages (at least of a certain type) are often those that have rich agreement systems—from a functional perspective, you can leave the subject out because you can tell what it would have been.
- In non-null subject languages, the (abstract, often non-overt) agreement “needs” the subject.

Childish competition

The second piece is that tense also “needs” the subject. Strictly speaking, the theory is such that in null subject languages, there is a silent pronoun anyway, and when the subject is “omitted” it is generally this silent pronoun (called “pro”) that is used. This pro is capable of satisfying tense (and agreement doesn’t care about it, it doesn’t need a subject).

So, in non-null-subject languages, both tense and agreement need the subject, but in null-subject languages only tense needs the subject.

What differentiates 2–3 year-olds’ grammars from adult grammars is that the child grammars have an extra constraint that says that the subject is only allowed to satisfy one of these needs.

Making lemonade

On this story, the child acquiring a non-null-subject language is faced with an impossible situation. There are three constraints on his/her syntactic structure, but it is impossible to satisfy all three at once.
Sentences have tense, which needs the subject.

Sentences have agreement, which needs the subject.

The subject is only allowed to satisfy one need.

So: the English-speaking child just picks two and satisfies those. Sometimes tense is left out, sometimes agreement is left out, sometimes the third constraint is ignored and both tense and agreement are used. The Italian-speaking child, however, has no problem here; there’s only one need to satisfy, and the subject can satisfy it, so there’s no reason to use a default/infinitive form.

4 Summary

Some universals of language acquisition

- If a language is a non-null-subject language (like English), then it will show root infinitives between the ages of 2 and 3.

- If the default case form in the language does not match the subject case form, and a language is a non-null-subject language (again, like English), then there will be subject case errors between the ages of 2 and 3.

- If a language is a non-null-subject language (like English), subjects will be omitted anyway between the ages of 2 and 3.

- (In any kind of language, it seems that subjects are omitted more at this age by children than by adults—and in child English, sometimes subjects are omitted with finite verbs too, so there seems to be a kind of baseline level of subject omission anyway at this age.)

Concluding

We opened the discussion with ideas about what might cause language universals. The initial suggestions may well all be responsible for certain universal properties of language.

What we see here, though, seems to be a pretty strong case for a kind of biological component to language that results in a kind of universal about child language, which in turn strongly indicates that there is some kind of predetermined course of
acquisition. Which makes quite plausible the idea that the “built-in” capacity for language exists and could constrain the acquisition or storage of language knowledge in such a way as to result in the kinds of universals we’re observing across languages.

References


