The one-word stage

- 12-18 months
- Kids’ “words” often aren’t adult “words”
  - /fɔnt/ ‘elephant’
  - /əsæt/ ‘what’s that?’
- But consider the task…

Learning language is hard.

- Kids have to find the words.

**Extraction**: identify grammatical units.

**Segmentation**: analyze identified units into component parts.
Some strategy

- Find stressed $\sigma$ of a unit, store separately.
- Find last $\sigma$ of a unit, store separately.
- Find first $\sigma$ of a unit, store separately.
- If two things share a phonologically similar bit, store the similar bit separately, as well as each non-similar bit.

Possible support for these strategies

- In many languages, stress reliably indicates word boundaries.
- Some early words…
  - coffee | daf | giraffe | faff
  - faucet | fas | moustache | tass
  - towel | daw | goodnight | na
  - high | chair | hats | away | way

Do kids have syntactic categories?

- No. We shouldn’t attribute to kids what we have no evidence for.
- Yes. If kids all end up learning a system with nouns and verbs, why would we suppose they use some different system in the beginning? (“Continuity”)
Why?

• It’s not because they’re inflectionally impoverished.
  – English: verbs are slightly more inflected than nouns.
  – Mandarin: neither verbs nor nouns are inflected.
  – Turkish: both verbs and nouns are inflected.

Why?

• It’s not because they’re, say, last in the word order (and last position is “salient”)
  – English and other SVO languages, sure.
  – But Japanese and other SOV languages also start out with an abundance of nouns, and the verb is final.

Why?

• Speculations:
  – nouns are perceptually more accessible?
  – verbs imply other things (verbs have θ-roles), nouns don’t… verbs are more complex.

Do kids at the one-word stage have/know syntactic structure?

• Early claim: no.

• de Villiers & de Villiers (1973), kids around MLU (mean length of utterance) 1 to 1.5 asked to act out the truck pushes the car, and got it right only about a third of the time.

Do kids at the one-word stage have/know syntactic structure?

• But, more recent study suggests yes.

• Hirsh-Pasek & Golinkoff (1991), preferential looking task.

Hey, Cookie Monster is tickling Big Bird.

Multi-word utterances

• Around 19-20 months, kids are putting words together into multi-word phrases.

• Number of multi-word utterances grows fast, it can’t be memorized.

  14  24  54  89  350  1400 2500+
How do we describe multi-word utterances?

• Syntactically, in the same terms as the adult grammar? *(continuity)*

• Or discontinuously?
  – Thematic
  – Pivot
  – “Limited scope” (Pivot 2.0)

“Thematic”

• Kids classify words according to their semantic role
  – agent, theme/patient, location, action, …

• These are used instead of adult-like syntactic relations in the child’s generalizations about, e.g., word order.

“Pivot”

• Kids classify words into two categories:
  – P - pivot (fixed position)
    • P1 = initial
    • P2 = final
  – O - open (occurs in any position)
  – Predicts four options:
    • P1 + O
    • O + P2
    • O + O
    • O/P1/P2

“Limited scope”

• Kids use patterns like here + X, want + X, agent + action.

• But note, kids around 20 months have around 150 words, under 10% (15) of them being verbs. How much diversity of expression could we expect of these kids?

“Thematic”

• Problem is:
  – observed patterns (agent+action, action+theme) differ kid-to-kid, language-to-language.

  – hard to come up with any insightful generalization about what kids are doing.

“Pivot”

• Problem is:
  – Some kids don’t appear to be well-described by the pivot analysis.
  – Even “well-behaved” pivot kids stray beyond the four predicted options.
  – O+O is a very non-homogeneous class (including mommy sock meaning both ‘Mommy’s sock’ and ‘Mommy is putting a sock on me.’)
Syntactic approach

- Continuity: ✓
- Kids think:

```
VP
V  sit
P  on
PP
NP  chair
```

Syntactic approach

- Continuity: ✓
- Kids say:

```
VP
V  sit
P  (on)
PP
NP  chair
```

Why 2 words?

- Maybe they omit words they don’t know?
  - Well, but they do omit words they know.
    - A kid who’s used hurt before, documented as saying baby cheek to mean ‘baby hurt cheek.’

- Pinker (1984): Processing bottleneck
  - A 2-word utterance “filter”
  - Kids “grow out” of this constraint.

Arguments for syntax…

- Conceptually:
  - Kids do reach a point where they know N and V, and they don’t seem to make the kinds of mismatch errors you’d expect if they were switching from a thematically-based categorization to a grammatically-based categorization.

Arguments for syntax…

- Concretely:
  - Animacy is a salient and linguistically relevant feature of nouns. But kids seem class nouns together (for the purposes of syntax and word order) regardless of animacy.
  - Even though most subjects heard are animate, most objects heard are inanimate, kids will happily use inanimate subjects or animate objects.
  - Kids will also happily use modifier+noun combinations in both subject and object position.
  - Kids distinguish between types of nouns, big one, big dog, but not *big he (though he big).

Arguments for syntax…

- Semantic information probably comes into play as well as, but not instead of syntax.
  - Kaluli is an “ergative language”: subjects of transitives get ergative case-marking, other nouns are unmarked (“absolutive”).
  - Kaluli kids use ERG first only for subjects of transitives that are highly agentive.
Arguments for syntax…

• Semantic information probably comes into play as well as, but not instead of syntax.
  – Russian kid reportedly used accusative case marking only for prototypical themes (objects that changed location, for example).

Structure in meaning

• Recall the Hirsh-Pasek & Golinkoff (1991), preferential looking task.

The second green ball

• Challenge: Matthei (1982) 3;9-6;3 ‘get the second green ball.’

• When faced with this:
  
  Do they pick the second and green ball or the second green ball?

• Kids did terribly—about half the time wrong.

…but the problem is the task

• However, why chance? Why not always “second and green”? 
• This tends to suggest kids didn’t really “get” the task. In fact, they made the same mistake with this array and “pick the second ball”.

• So the problem is probably with ordinal numbers and manipulating subsets…

…but the problem is the task

• Additionally, the kids could see the array the whole time, so kids may well have decided on which object to pick by the time they heard “pick the second…”
• Hamburger & Crain (1984) re-did the experiment, hiding the array until the request was complete—kids’ error rate dropped to 14%.

One-substitution

• Anecdotal evidence:
  – nice [yellow pen], nice one (1;11)

• Hamburger & Crain (1984): ‘Point to the first green ball. Ok. Now, point to the second one.’
  – Note: “Failure” wouldn’t tell us anything here, since one could also legitimately mean ball—but if kids take one to mean green ball, that’s evidence that kids do have the syntactic sophistication to replace N’ with one.

• 42 / 50 kids interpreted it as green ball.
Word order errors

- Languages vary with respect to word order
  - SVO  English, French, Mandarin, …
  - VSO  Tagalog, Irish, …
  - SOV  Japanese, Korean, Turkish, …
  - SOV+V2 German, …
- Clahsen (1986) reports that German kids don’t manage to put the verb in second position until the finite/nonfinite distinction is “mastered.”
- Syntactic properties are stored separately from meaning.

Surprisingly few—95% correct in English, DP-internal order (*black the dog) may be at 100%.

Yet there are a number of things like: Doggy saw.

It appears that in these cases, it is theme+V without an expressed agent.

Sounds like an unaccusative or a passive—perhaps they are treating the verb in these cases as unaccusatives.

Plus, we see likely unaccusatives with postverbal subjects on occasion: going it, come car, fall pants. (cf. adult Mandarin, which would allow that)

Ben’s optative

- Anecdote about Ben, from Sadock (1982)
- SVO normally, but in optative (wish) constructions, he says:
  - [fall down] Daddy.
  - [pick up bunny] for Daddy.
- He’s marking transitive subjects with for, but leaving intransitive subjects and objects unmarked.
- Perhaps: He’s speaking an ergative language.

As is common in ergative languages (cf. Inuktitut, which uses -up both for possessor and subject of a transitive), Ben uses for (his ERG marker) in possessive constructions as well.
  - That's a nose for Maggie ‘That’s Maggie’s nose.’

Ben’s not really making word order errors, exactly—he just thinks he’s speaking Inuktitut. His errors come from among the options.

Pre-subject negation

- Kids will say things like:
  - No I see truck
  - Not Fraser read it
  - No lamb have a chair either.
- Anaphoric no? ‘No, I see the truck.’
- Often distinguishable from context, and they are not all anaphoric.

Déprez & Pierce 1993 looked at these, and proposed that not Fraser read it comes from a failure to raise the subject out of SpecVP to SpecIP. That is, here, Fraser is still in its VP-internal subject position.

Some believe this, some don’t, but it’s a well-known analysis. See O’Grady…
Case errors

- English pronouns exhibit Case
  - Nom: I, he, she, they
  - Acc: me, him, her, them
  - Gen: my, his, her, their
- Kids seem to make errors until at least 2.
  - me got bean
  - her do that
  - me eye
- In general, it is often overgeneralization of Acc.

Case errors

- Bellugi (1967) observed that nominative I appears for sentence-initial subjects, but me marks non-sentence-initial subjects.
  - I laughing.
  - I here.
  - When me want it?
  - Where me sleep?
- Vainikka (1993/4): no, me in wh-questions.

Case errors

- As kid learns Nom, it alternates with overgeneralized Acc in subject position.
- Aldridge (1989): finite verbs have Nom.
  - I swinging.
  - He hiding.
- These cases have a “silent finite be”? 
  - I on this one, aren’t I?

Case errors

- Another possibility: based on agentivity?
- Budwig (1990): I is for low agentivity, my is used for “prototypical agent” and acts to gain control.
  - I wear it (wearing microphone)
  - My wear it (wants to wear microphone)
- Languages do make case distinctions based on agentivity & control, so kids learning some languages will need to attend to this.

Overuse of accusative

- Topics? Like in Her, I like…
  - infrequent in adult speech
  - kids using Acc subjects don’t use “topic intonation”
  - Acc subjects appear where topicalization should be disallowed:
    - what me play with?
    - there her is.
  - Doesn’t say anything about me eye, me dad.

Overuse of accusative

- Default case: Acc in English (Schütze 1997)
  - Me too.
  - What, me cheat?! Never!
  - Me, I like pizza.
  - It’s me.
  - —Who did this? —Me.
- So, “overuse of accusative” may well be just using a default form for nouns which don’t have case.
Overuse of accusative

- Russian (Babyonyshev 1993): Default case appears to be Nom.
- Russian kids make basically no errors in subject case.
- …but they overuse Nom in other positions (e.g., Nom instead of Acc on an object).

Overuse of accusative

- German (Schütze 1995): Default case also appears to be Nom:
  – Der, den habe ich gesehen. ‘He, him I saw.’

- Object case errors are more common than subject case errors, and usually involve overgeneralization of Nom.

Radford (1995)

- A proposal about Early Child English.
- Kids’ syntax differs from adults’ syntax:
  – kids use only lexical (not functional) elements
  – structural sisters in kids’ trees always have a θ-relation between them.

![Diagram]

VP

NP ← θ — V'

man

V ← θ — NP

chase — car

adult syntax ≠ child syntax

- Adults: CP—IP—VP
- Kids: VP

- Absence of IP:
  – No modals (repeating, kids drop them)
  – No auxiliaries (Mommy doing dinner)
  – No productive use of tense & agreement (Baby ride truck, Mommy go, Daddy sleep)

Absence of CP

- No CP system:
  – no complementizers (that, for, if)
  – no preposed auxiliary (car go?)
  – no wh-movement (imitating where does it go? yields go?; spontaneous: mouse doing?)
  – kids bad at comprehending wh-object questions (out of canonical order). (—What are you doing? —No.)

Absence of DP

- No DP system:
  – no non-θ elements
    • no expletives (raining, outside cold)
    • no of before noun complements of nouns (cup tea)
  – kids tend not to use determiners (Hayley draw boat, want duck, reading book)
  – kids don’t use possessive ‘s, which may be a D.
  – kids don’t use pronouns, which are probably D.
So why does it happen this way?

• Radford provides some ideas as to why VP must precede IP and CP:
  – you have to know what the θ-grids of your verbs are before you can… (AR: move the subject to SpecIP)... even put the subject in the VP in the first place. Not an argument for why IP follows VP—simultaneous is fine.

So why does it happen this way?

• Radford provides some ideas as to why VP must precede IP and CP:
  – Language parameterization lies solely in features of functional heads (like I and C). Kids start with the non-parameterized part of grammar, and work their way up to the parameterized part. But—kids don’t make word order errors; Japanese kids start talking SOV from the get-go, English kids SVO...

The transition to IP

• Slightly older kids alternate between Nom subjects and Acc subjects, between finite verbs and nonfinite verbs.
  – One view: kids are “code-switching” between a VP grammar and an IP grammar.
  – If this is the case, we expect Nom subjects to occur in the IP grammar (with the finite verbs) and Acc subjects to occur in the VP grammar (with the nonfinite verbs).

The transition to IP

• Slightly older kids alternate between Nom subjects and Acc subjects, between finite verbs and nonfinite verbs.
  – One view: kids are “code-switching” between a VP grammar and an IP grammar.
  – But Schütze & Wexler (1996) show that the percentages are very skewed…
Finiteness vs. case errors

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>subject</td>
<td></td>
<td></td>
</tr>
<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>

Finiteness vs. case errors

<table>
<thead>
<tr>
<th>Schütze &amp; Wexler (1996)</th>
<th>Nina</th>
</tr>
</thead>
<tbody>
<tr>
<td>subject</td>
<td>Finite</td>
</tr>
<tr>
<td>I</td>
<td>255</td>
</tr>
<tr>
<td>me+my</td>
<td>14</td>
</tr>
<tr>
<td>% non-Nom</td>
<td>5%</td>
</tr>
</tbody>
</table>

The problem so far

- Look for numbers, see if you find any. Radford does not do a very good job of convincing us that what he’s telling us about is representative. He only tells us that it is attested.
- We’ll have more to say about case errors and finiteness.

The transition to CP

- It has been observed that even after kids can invert yes-no questions…
  - Did you want that one?
- …they fail to invert in wh-questions
  - What he can ride in?
- Radford suggests: C comes in two flavors, “verbal” and “nonverbal”—root clauses are verbal, embedded clauses are nonverbal, and I will not move to C if C is nonverbal.

The transition to CP

- Kids have C which isn’t specified either for verbal or for nonverbal.
- The rule about moving I to C doesn’t mention unspecified C, so I can move to unspecified C.
- But, if a wh-word moves into SpecCP, then Spec-head agreement with the nonverbal wh-word gives C a nonverbal feature, prohibiting I to C movement.

The transition to CP

- The problem here is that there is no independent evidence.
- Plus, kids are supposed to be having trouble with subject agreement between I and SpecIP—at the same time that they seem to be perfectly able to effect agreement between C and SpecCP…?
For next time:

• Read O’Grady chapters 2, 3, 4, Radford (1995)
• Write up a 1-2 page summary of Radford 1995:
  – What are his main points?
  – What is the evidence for each point?
  – Is this evidence convincing? If not, why not?