- **L1 acquisition of syntax**

Background reading:

- (Review) *CL* Ch 9, §1, "The study of lg acquisition"
- *CL* Ch 9, §5, "Syntactic development"

0. Course information

- **Exam #2** is on **M Nov 6**

  - [Exam information and review guide](#)

  - Friday's recitation will be a chance to review

  - Look over the review guide before Friday and think about what questions you have

1. Syntactic development: Overview

As we have seen:

- **Adults** can speak and understand their native language(s) because they have a **lexicon** and **mental grammar** of that language
  - **lexicon** — where sounds, meaning, and other <u>unpredictable</u> information are stored for each **word** or **morpheme**
  - **mental grammar** — rules and principles that handle <u>predictable</u> / <u>systematic</u> patterns, including phonology, morphology, **syntax**

1. Syntactic development: Overview

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- **Adults** can speak and understand their native language(s) because they have a **lexicon** and **mental grammar** of that language

- How does a child acquiring a native language (first language; L1) get to this **target** adult state for **syntax**?

  → **L1** is the abbreviation for **first** or **native language(s)**: language(s) acquired by a young child when no previous language has been acquired

1. Syntactic development: Overview

- Some aspects of **syntax** that children need to acquire:

  Are these a matter for the **lexicon** or for the **mental grammar**?

  - The X' schema parameters (specifier L or R? head initial or final?)
  - Complement options (for each head)
  - Transformations

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  - Complement options (for each head) | lexicon
  - Transformations | mental grammar

1. Syntactic development: Overview

As we have seen:

- A child in the process of acquiring a grammar goes through different **stages** of development
  - These stages reflect **intermediate mental grammars** on the way to the adult grammar
- A child often shows **variable** behavior
  - A rule may be applied only some of the time
  - Multiple versions of a rule may be in use
- But we can still find a great deal of **systematicity** in children's language behavior

1. Syntactic development: Overview

- Syntactic development also proceeds in **stages**

- Examples:

  - Stages in utterance length
  - Stages in development of transformations

2. Developing utterances: One-word stage

The **one-word stage** (12 to 18 months)

- One-word utterances are used to express the meaning of a whole sentence

- Some examples from A (my daughter):

    More   ('I want more milk')
    Foot   ('My foot is stuck'/'Get my foot out')
    Leaf   ('That's a leaf'/'I see a leaf')
    Mama   ('Mama should do it')

    Note: Interpretations of the child's intended meaning are based on the context of the utterance

3. Developing utterances: Two-word stage

The **two-word stage** (a few months later)

- Words very often **lack inflection** at this stage
  - Sometimes, children treat adult phrases as words in this stage (A had 'V-*it*' for transitive verbs)

- Some examples from A:

  More crackers   ('I want more crackers') said as [tatʊz]
  That bicycle   ('That's a bicycle')
  Papa eat-it   ('Papa should eat it')
  Duck head   ('I have a duck on my head') don't ask! :)
  Mama up   ('Mama should pick me up')

3. Developing utterances: Two-word stage

- Do children have **syntactic categories** in the two-word stage?

    - How could we test this? Can we tell?

- **Word order** mostly matches adult language

    - But children may learn word order verb by verb at first (before *generalizing* their X'-schema)

4. Developing utterances: Telegraphic stage

The **telegraphic stage** (approx. age 2)

- What morpheme **type** is missing?
    - From *CL*, p 370

        Chair broken.

        Man ride bus today.

        Car make noise.

    - From A

        Eat-it orange fork mouth.

        Mama draw big blue O.

4. Developing utterances: Telegraphic stage

A useful distinction in morphology and syntax:

- **Content** morphemes (also called *lexical* morphemes) have **real-world meaning**
  - N, V, A
  - Derivational affixes

- **Function** morphemes (also called *nonlexical* or *grammatical* morphemes) have **grammar**-related meaning
  - Det, P, auxiliary verbs, …
  - Inflectional affixes

The **telegraphic stage** (approx. age 2)

- What morpheme **type** is missing? | function morph.

  - From *CL*, p 370   *Chair broken.*
    Man ride bus today.
    Car make noise.

  - From A   *Eat-it orange fork mouth.*
    Mama draw big blue O.

- Once the telegraphic stage begins, further development is very rapid (see *CL*, Table 9.19, pp 371-2)

5. Development of function morphemes

- As we can see in the one-word, two-word, and telegraphic stage examples:

  The first morphemes acquired are typically **content** morphemes

- **Function** morphemes often have a typical developmental sequence in a given language

  - Why?
    Where does this sequence come from?

5. Development of function morphemes

- Function morphemes: Typical **developmental sequence**

1.	*-ing*	5.	past tense *-ed*
2.	plural *-s*	6.	3rd person singular *-s*
3.	possessive *'s*	7.	auxiliary *be*
4.	*the, a*		

(*CL*, Table 9.12, p 365)

- Compare: Typical relative **frequency** in **parent speech**

1.	*the, a*	5.	possessive *'s*
2.	*-ing*	6.	3rd person singular *-s*
3.	plural *-s*	7.	past tense *-ed*
4.	auxiliary *be*		

(*CL*, Table 9.13, p 366)

- Does frequency in parent speech *predict* acquisition order?

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5. Development of function morphemes

- Frequency of function morphemes in adult speech **does not** predict how early they will be acquired!

    → It's not just learning what you hear the most…

- What factors *do* seem to predict early acquisition?

    - Occurs frequently at the end of the utterance

    - Forms a syllable on its own

    - Not a homophone

    - Behavior is regular — it has few exceptions

    - Allomorphic invariance (one sound shape)

    - Has a clearly discernable semantic function

6. Comparing children: MLU

- One fact about individual children that is often reported in research on child language is the child's MLU, or *mean length of utterance*

  - This can be measured in **words** or **morphemes**

6. Comparing children: MLU

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- Can MLU help indicate when a child has left the telegraphic stage and become more adult-like? (What should happen to MLU at this point?)

6. Comparing children: MLU

- Why might MLU be more useful than chronological age in comparing children?

  - Children's development follows a typical sequence, but the age at which each child reached a certain stage can vary by months

- Can MLU help indicate when a child has left the telegraphic stage and become more adult-like? (What should happen to MLU at this point?)

  - MLU measured in morphemes should increase when inflectional affixes start to appear!

7. Later development: Movement rules

- The **Inversion** rule: How does this develop for English-acquiring children? Stages:

  a. Questions signaled by intonation only

  b. A relatively rare pattern: _Can he can look?_

  → What rule does this child's grammar have?

  c. Adult-like application of Inversion

- Some children pass through a stage where they can apply Inversion...except when they have to apply _Wh_ Movement too

7. Later development: Movement rules

- Draw a tree and apply the appropriate rules for this *wh* question in the adult grammar of English:

  What do you think is in the box?

  - Hint: How many TPs/CPs do we have here?

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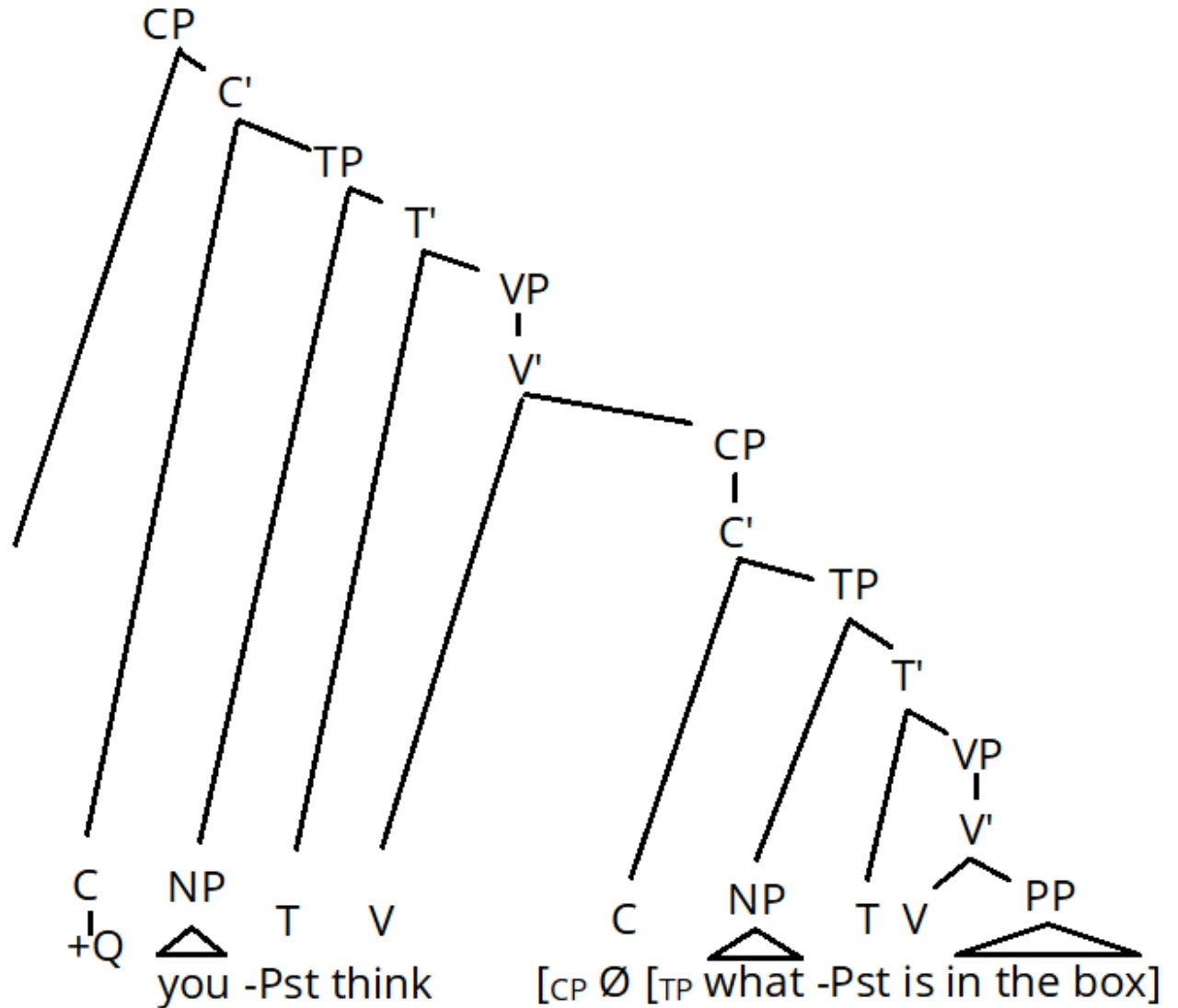 - Hint: How many TPs/CPs do we have here?

  Deep structure ('zero'/'silent' C in embedded clause):

  C   NP   T   V   C   NP   T   V   [----PP-----]
  +Q you -Pst think [CP Ø [TP what -Pst is in the box]

- Deep struc.:

7. Later development: Movement rules

- Suppose we want to study this type of *wh* question in child language. How might we collect data?

  - Naturalistic vs. experiment studies (what are the pros and cons?)

  - Here is a video of a *wh*-question study

7. Later development: Movement rules

- Consider the syntax of the child in the video:

  What do you think what is in the box?

  - What does this child's current *Wh* Movement rule seem to be?

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  What do you think what is in the box?

    - What does this child's current *Wh* Movement rule seem to be?

    - The child seems to move the *wh* phrase to the specifier of CP, but leaves a copy of it behind instead of leaving a trace (*t*) in the structure!

      This particular child pattern is not necessarily common, but is sometimes observed

8. Implications

- In both morphology and syntax, we see children...

  - applying **rules** of the mental grammar
  - in **non-adult-like** ways

- This is important evidence that part of L1 acquisition is **developing linguistic rules**

  - Children applying non-adult-like rules **can't be just copying** from their language environment
  - And yet, their **productive** use of these rules shows that their mental grammar is involved

→ **Data** from L1 acquisition helps support and refine our **model** of the mental grammar