• UG in language acquisition
• L2 acquisition

Background reading:
• CL Ch 9, §6.4–6.5 — UG and critical period
• CL Ch 10, §1–2 (especially §1)
1. Review and context

• First-language (L1) acquisition is a process in which a child develops a mental grammar.

• Today, we will look at:
  - Does L1 acquisition provide evidence for innate UG?
  - What is the role of mental grammar, and UG, in second-language (L2) acquisition?
1. Review and context

- In the last two classes, we saw that these factors do not explain all aspects of L1 acquisition:
  - The **raw frequencies** of adult language forms in the environment
  - Adults **directly correcting** children’s language
  - Other kinds of adult feedback, such as **recasts** (repetition with expansion)

- Can you remember some of the evidence that these factors cannot possibly be the whole story?
1. Review and context

- **Universal Grammar (UG):** “The set of inborn categories, operations, and principles common to all human languages” (*CL*, p 381)

- Does L1 acquisition provide **evidence** for **innate** **UG**? Two important arguments (controversial):
  - The “**poverty of the stimulus**” argument
  - Evidence for a **critical period**
2. Poverty of the stimulus

• The poverty of the stimulus argument
  - The argument: Human language grammars are too complex and abstract to be learned only on the basis of ambient language data
    → Some parts of mental grammar must be innate

• The extent to which this is true is an area of hot debate among linguists and psychologists
  - The human brain certainly must have innate ways of organizing information
  - But — which are specific to language?
2. Poverty of the stimulus

- Example: Interpretation of words such as *him* and *himself* (see §6.4 in CL for more details FYI)

We saw these examples on the first day of class:

(a) *Oscar admires himself.*

(b) *Oscar thinks that Grover admires himself.*
   *Oscar thinks that Grover admires himself.*

(c) *Oscar told Grover stories about himself.*
   *Oscar told Grover stories about himself.*

What can *himself* refer to?
2. Poverty of the stimulus

• Example: Interpretation of words such as him and himself (see §6.4 in CL for more details FYI)

We saw these examples on the first day of class:

(a) \[TP\textit{Oscar admires himself.} \]

(b) \textit{Oscar thinks that} \[TP\textit{Grover admires himself.} \]

\*\textit{Oscar thinks that} \[TP \textit{Grover admires himself.} \]

(c) \[TP \textit{Oscar told Grover stories about himself.} \]

\[TP \textit{Oscar told Grover stories about himself.} \]

What can \textit{himself} refer to?
2. Poverty of the stimulus

• What can *himself* refer to?
  
  (a) \([_{TP} Oscar admires *himself*. ]\)

  (b) *Oscar* thinks that \([_{TP} Grover admires *himself*. ]\)

  *Oscar* thinks that \([_{TP} Grover admires *himself*. ]\)

  (c) \([_{TP} Oscar told Grover stories about *himself*. ]\)

  \([_{TP} Oscar told Grover stories about *himself*. ]\)

• *himself* is restricted to referring to an NP...
  - that is in the **same minimal TP**
  - that **c-commands** (~is higher in the tree than) it
2. Poverty of the stimulus

- Example: Interpretation of words such as *him* and *himself* (see §6.4 in *CL* for more details FYI)
  - Requires understanding of “(same minimal) TP”
  - Requires understanding of “c-command”
  - **Could these concepts be acquired from observed language data only?**
    - These concepts appear to be relevant to pronoun interpretation in all languages
    - The *him/himself* (etc.) distinction is acquired early
3. Critical period

- Some linguists argue that there is evidence for innate UG as a “language instinct” because language acquisition has a **critical period**

- A **critical period** is a time period during which exposure to stimuli is particularly important (or even crucially necessary) for complete development
  - some types of bird song
  - barn owls coordinating vision and hearing
  - celestial navigation by indigo buntings
  - ...human language?
3. Critical period

- Humans who are deprived of language input seem to show that the ability to acquire a native language...
  - begins to decline around age 6
  - is severely impaired after puberty
3. Critical period

- “Genie”: essentially no language input or human interaction until 13

- After therapy:
  
  (a) Lexical abilities “good”
  
  (b) Syntax — Examples:

  * Applesauce buy store.
  * Man motorcycle have.
  * Genie have full stomach.

  - Can we identify similarities and differences with stages of typically developing syntax?
3. Critical period

- “Chelsea”: deaf, but mistakenly thought to be mentally impaired; no language input until age 31

- After therapy:
  
  (a) Vocabulary size: 2000 words

  (b) Syntax — Examples:
  
  *The woman is bus the going.*

  *The girl is gone the ice cream buying shopping the man.*

  - Can we identify similarities and differences with stages of typically developing syntax?
3. Critical period

• Language data from “Genie,” “Chelsea”
  - Question: What would happen if a child had no language input but completely normal social interaction? (obviously not ethical to carry out an experiment...)

• The evidence seems to show that there is a critical period for fully acquiring a native language
3. Critical period

• Question: Is there a critical period for second (and later) language learning, for people who did acquire a first language normally?

→ We will first look at L2 acquisition in general, and then return to this question
4. Overview: Second-language acquisition

• Research in second-language acquisition (SLA, L2 acquisition): (CL, p 389)
  - “investigates how people attain proficiency in a language that is not their mother tongue”

• *CL* classifies **all** non-native languages as ‘**second**’
  - But: Some researchers further distinguish L2 from L3 and additional languages

• SLA can lead to **(sequential) bilingualism**
  - Potentially distinct from *simultaneous* bilingualism (two native languages)
4. Overview: Second-language acquisition

• Why research L2 acquisition?
  - Better methods for teaching/learning L2
  - Insight into (guess what...) human mental grammar

• If we look at the ‘errors’ that L2 learners make, we can potentially learn about...
  - the mental grammar of the relevant L1
  - the mental grammar of the relevant L2
  - Universal Grammar
5. L1, L2, and interlanguage

• As in L1 acquisition, speakers in L2 acquisition go through *stages* of development
  - At each stage, they have a different mental grammar

• Stages distinct from the target L2 grammar are called *interlanguage (IL)*
  - What is IL influenced by?
  - How is this different from child-specific grammars in L1 acquisition?
5. L1, L2, and interlanguage

- L1 acquisition:
  
  \[ \text{UG} + \text{L1 language data} \Rightarrow \text{L1 mental grammar} \]
5. L1, L2, and interlanguage

- **L1 acquisition:**

  
  $$\text{UG} \quad + \quad \text{L1 language data} \quad \Rightarrow \quad \text{L1 mental grammar}$$

- **L2 acquisition:**

  
  $$\text{UG (?)} \quad + \quad \text{L1 mental grammar (explicit instruction?)} \quad \Rightarrow \quad \text{“L2” mental grammar (???)}$$
5. L1, L2, and interlanguage

• Interlanguage grammar is influenced by:
  - **exposure to L2 data**
  AND ALSO
  - the **existing L1 grammar**

• May also be influenced by UG directly (rather than just via UG⇒L1)
  - Research question: Is there evidence for ‘default settings’ in interlanguage grammars?
  - This would be: non-L2 characteristics that are **not** caused by the L1 grammar
6. Transfer in interlanguage

- **Transfer**: “the process whereby a feature or a rule from a learner’s first language is carried over to the IL grammar” (*CL*, p 391)
  - Transfer = evidence for mental grammar
  - Includes phonology, morphology, syntax, etc.

- Example: English L1 speakers usually add **aspiration** to voiceless stops in L2 Spanish
  - Why would they do this? Voiceless stops [p t k] are not aspirated in Spanish!
6. Transfer in interlanguage

- Example: English L1 speakers usually add **aspiration** to voiceless stops in L2 Spanish
  - Why would they do this? Voiceless stops [p t k] are not aspirated in Spanish!
  - Caused by the aspiration rule—a phonological rule of *English*—being applied in L2 Spanish

- Many recordings of L2 English available from the [Speech Accent Archive](http://speechaccentarchive.com) (George Mason University)
  - Further examples of transfer of L1 phonology to interlanguage English
6. Transfer in interlanguage

- Here are some examples of IL in L2 English **beyond phonology** (*CL*, Table 10.4, p 392)

<table>
<thead>
<tr>
<th>L1</th>
<th>Example</th>
<th>Error type</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spanish</td>
<td>My wife is <strong>embarrassed</strong>.</td>
<td></td>
<td>Spanish <strong>embarazada</strong> = ‘pregnant’</td>
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<td>Various</td>
<td>I live in a <strong>two bedroom department</strong>.</td>
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<td>Sometimes the wrong word can be chosen.</td>
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<td>Various</td>
<td>I <strong>didn’t took</strong> the car.</td>
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<td>English doesn’t mark the past tense on both auxiliary and main verbs.</td>
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<td>She <strong>get ups</strong> late.</td>
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<td>The speaker adds the agreement marker to the particle, not the verb.</td>
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<td>French</td>
<td>He <strong>drinks frequently</strong> beer.</td>
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<td>French places the main verb before the adverb.</td>
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<td>Various</td>
<td>There’s the man that I saw him.</td>
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<td>Some languages (e.g., Arabic, Turkish) allow pronouns in this position in a relative clause.</td>
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- What types of errors are these?
6. Transfer in interlanguage

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<td>Spanish</td>
<td>My wife is <strong>embarrassed</strong>, (meaning ‘pregnant’)</td>
<td>lexical</td>
<td>Spanish <strong>embarazada</strong> = ‘pregnant’</td>
</tr>
<tr>
<td>Various</td>
<td>I live in a two bedroom department.</td>
<td>lexical</td>
<td>Sometimes the wrong word can be chosen.</td>
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<td>Various</td>
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One view of UG is that it contains **parameters** (like switches, or menu options)

- The parameters are set one way or another during L1 acquisition — some examples:

<table>
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<th>UG stipulates:</th>
<th>Parameters to set:</th>
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<td>X' contains X and complement phrase</td>
<td>Is head initial or final in X'?</td>
</tr>
<tr>
<td>Speech sounds form syllables</td>
<td>Can a syllable start with multiple consonants?</td>
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7. Universal Grammar in interlanguage

• Another parameter proposed for UG:

**Null Subject Parameter** (*CL*, p 401)
The subject of a clause with a verb marked for tense may be null: `{no | yes}`

• How is the Null Subject Parameter set for...
  - L1 English?
  - L1 Spanish?
Another parameter proposed for UG:

**Null Subject Parameter** (*CL*, p 401)
The subject of a clause with a verb marked for tense may be null: \{ no \mid yes \}

- **How is the Null Subject Parameter set for...**
  - L1 English? \mid no
  - L1 Spanish? \mid yes
7. Universal Grammar in interlanguage

• A *no* setting for the Null Subject Parameter (as in English) produces a grammar that is a **subset** of the *yes* setting (as in Spanish)

- **L1 English**: (tensed) TP with overt subject
- **L1 Spanish**: (tensed) TP with overt subject
  
  (tensed) TP with null subject
7. Universal Grammar in interlanguage

- Claim about L1 acquisition:
  - Default setting for Null Subj Parameter is *no*
  - If L1 is actually *yes*, child sees sentences with null subjects and changes the parameter setting

- Consequences for L2 acquisition:
  - Changing from *no* to *yes* is likewise a matter of observing L2 sentences with null subjects
  - Changing from *yes* to *no* is harder — needs negative evidence: absence of null subjects

- This prediction is supported by L2 data!
8. How ‘native’ can an L2 become?

• An interlanguage grammar that has stopped changing (before it gets to the target L2 grammar) is said to have **fossilized**
  - Some fossilized interlanguages can be quite different from the target L2 grammar

• There is evidence that L2 learners can never completely attain the target L2 grammar
  - Experiments show that even L2 speakers who appear indistinguishable from native speakers don’t have exactly the same mental grammar
8. How ‘native’ can an L2 become?

• Why don’t L2 speakers become fully ‘native’?
  - Effect of a **critical period** for L2 acquisition?
  - Gradual effect of **age of acquisition**?
  - Effect of already having an **L1 grammar**?
  - **Social/cultural** factors?

• Probably all of these factors are involved
  - Related point: It’s hard to *prove* there is a critical period for L2, because of these other factors

• It is nevertheless possible to become a **‘near-native’** L2 speaker!