• Evidence for a critical period in L1 acquisition?
• L2 acquisition

Background reading:
• CL Ch 9, §6.5
• CL Ch 10, §1–2 (especially §1)
0. Course information

- **Exam #1** is on **W Nov 3** on Sakai during class time
  - You may take the exam remotely or from our classroom (bring your own device)
  - People with ARS accommodations for extended time on exams: you should see a message from me in the ARS Hub secure portal (let me know ASAP if you don’t)

- See the [Information and Review Guide for Exam #2](#) for details (linked from the Daily syllabus page)
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? (continued from last class)
  - What is the role of mental grammar, and UG, in second-language (L2) acquisition?
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. Critical period

- Some linguists argue that there is evidence for innate UG as a “language instinct” because first-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?
2. Critical period

- Evidence from 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
2. Critical period

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

• After therapy:
  (a) Lexical abilities (vocabulary) “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?
2. 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?
2. 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...)

• Still, the evidence does seem to show that there is a critical period for fully acquiring a native language
2. Critical period

• 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
3. 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)
3. Overview: Second-language acquisition

• Why do research on 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
4. 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?
4. L1, L2, and interlanguage

- L1 acquisition:

\[
\text{UG} \; + \; \text{L1 language data} \; \Rightarrow \; \text{L1 mental grammar}
\]
4. L1, L2, and interlanguage

- **L1 acquisition:**
  - UG
  - + L1 language data
  - ⇒ L1 mental grammar

- **L2 acquisition:**
  - UG (?)
  - + L1 mental grammar
  - + (explicit instruction?)
  - ⇒ “L2” mental grammar (???)
4. 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 UG as ‘default settings’ in interlanguage grammars?
  - This would be: non-L2 characteristics that are *not* caused by the L1 grammar
• **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!
4. L1, L2, and 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://www.speechaccentarchive.org) (George Mason University)
  - Examples of transfer of L1 phonology to interlanguage English
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>
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<tbody>
<tr>
<td>Spanish</td>
<td>My wife is <em>embarrassed</em>. (meaning ‘pregnant’)</td>
<td>Spanish <em>embarazada</em> = ‘pregnant’</td>
<td></td>
</tr>
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<td>Various</td>
<td>I live in a two bedroom department.</td>
<td>Sometimes the wrong word can be chosen.</td>
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<td>Various</td>
<td>I <em>didn’t took</em> the car.</td>
<td>English doesn’t mark the past tense on both auxiliary and main verbs.</td>
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<td>She <em>get ups</em> late.</td>
<td>The speaker adds the agreement marker to the particle, not the verb.</td>
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<td>French</td>
<td>He drinks <em>frequently</em> beer.</td>
<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 <em>him</em>.</td>
<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?
4. L1, L2, and interlanguage

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

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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>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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5. 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?
5. 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? | no
  - L1 Spanish? | yes
5. 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
5. 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: null subjects are *

• This prediction is supported by L2 data!
6. 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
6. 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

• On the bright side: It is nevertheless possible to become a ‘**near-native**’ L2 speaker!