Linguistic Principles

Psycholinguistics – 2\textsuperscript{nd} meeting

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Basic grammatical concepts

• Differences in languages → example: word order
• SVO: English
  The boy chased the girl. Vs The girl chased the boy.
• SOV: Japanese
• Flexible word order: Russian
  Viktor celuet Lenu.
  Viktor Lenu celuet.
  Lenu Viktor celuet.
  Lenu celuet Viktor
• Languages differ so greatly that no common patterns can be found.
• The differences are not random, and there are impressive underlying similarities.
• Linguists have attempted to identify the grammatical features that appear in all languages: duality of patterning, morphology, phrase structure, and linguistic productivity.
Duality of patterning

• All languages have duality: a level at which there is a relatively small number of basic, meaningless elements (i.e. speech sounds) and another level at which there is a large number of meaningful elements (i.e. words).
• Phonemes and phones
  /p/ [pʰ] pot, [p] spot
• Distinctive feature
  /p/ /b/ voicing
  port plort pbort
• These distinctive features have psychological validity. (Miller & Nicely, 1955) \(\rightarrow\) p.21
Morphology

- Morpheme
- Free morpheme
- Bound morpheme
- Major grammatical morphemes in English: number, person, tense, aspect
## Morphemes in English

<table>
<thead>
<tr>
<th>Morpheme</th>
<th>Distinction(s)</th>
<th>Examples</th>
</tr>
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<tbody>
<tr>
<td>Number</td>
<td>Singular, plural</td>
<td>Nouns: <em>ball, balls</em></td>
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<td></td>
<td></td>
<td>Pronouns: <em>he/she, they</em></td>
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<td></td>
<td></td>
<td>Verbs: <em>is, are</em></td>
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<tr>
<td>Person</td>
<td>First, second, third</td>
<td>Pronouns: <em>I, you, he/she</em></td>
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<td></td>
<td></td>
<td>Verbs: <em>I walk, you walk, he/she walks</em></td>
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<tr>
<td>Tense</td>
<td>Present, past, future</td>
<td>Verbs: <em>I jump, I jumped, I will jump</em></td>
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<tr>
<td>Aspect</td>
<td>Perfect, progressive</td>
<td>Verbs: <em>I have read the book, I am reading the book</em></td>
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Phrase Structure

• Intuitively, we know that sentences can be divided into groups of words, or constituents. 
  (The young swimmer) (accepted [the silver medal]).
Linguistic productivity

• Our ability to create and comprehend novel utterances.

• Most current psycholinguistic accounts make the assumption that instead of storing sentences, we store rules for creating sentences. The number of rules needed is finite, but the rules can be combined to form an unlimited number of sentences.
• Recursive rule
  The child thinks that man left.
  The woman knows the child thinks the man left.

• Linguistic productivity distinguishes human language from animal communication systems, which consist of a small number of discrete signals.
Not all aspects of language are productive. Some aspects of language are not rule governed and so must be mastered by repetitive memorization. Example: irregular verbs
Sign language

• Signs are expressed in visual or spatial form.
• American Sign Language is sharply distinguished from manual forms of English that translate English into signs.
• ASL is independent of English and derived from French Sign Language.
Signed & Spoken Lang. Differences

1. Spoken
   arbitrary
   sequential $\rightarrow$ syllables, words, sentences

2. ASL
   iconic $\rightarrow$ arbitrary
   is organized spatially more than temporally
Similarities

• Duality of patterning

• Three parameters of signs:
  1. Hand configuration
  2. Place of articulation
  3. Movement

• Morphology

• Linguistic productivity

• Phrase structure
Transformational Grammar

• Formulated by Chomsky in the late 1950s (Chomsky, 1957, 1965).
• The theory inspired a considerable amount of psycholinguistic work in the 1960s and early 1970s.
• Language can be defined as an infinite set of well-formed sentences.
• Grammars are theories of language, composed of more specific hypotheses about the structure or organization of some part of the language.
Deep & Surface Structure

• Translate:
  – “On the surface, George seems outgoing, but deep down he is sensitive and shy”

• Surface structure
  – The words used in a sentence

• Deep structure
  – The real meaning of the sentence
Deep and surface structure 2

1. *The girl hit the boy with a stick* \(\rightarrow\) ambiguous
   - One surface structure
   - How many deep structures?

2. *The boy was hit by the girl*
   - Can you give another sentence with the same meaning as 2?

3. *The girl hit the boy*

2 and 3 have
   - The same deep structure
   - Different surface structures
Is language innate?

• Deaf children whose parents do not know sign languages develop their own.
• Children are born with the parameters and with the value of the parameters.
• What they must learn, from experience, is which value is present in their native language.