Early Morphological Acquisition

Two Kinds of Words

- **Lexical Class**: carry major meanings of sentences: noun, verb, adjective, adverb
- **Functional Class**: modulate the meanings of lexical class words
  - Bound vs. Free morphemes
    - **Bound Categories**: functional categories affixed to lexical categories
      - Noun: plural {-s}, e.g. two cat/s
        - possessive {-s}, e.g. cat/’s paw
      - Verb Inflections:
        - progressive {-ing} e.g. walk/ing
        - regular present {-s} e.g. walk/s
        - past tense {-ed}, e.g. walk/ed
  - **Free Categories**: separate words
    - Prepositions, e.g. ‘in’, ‘on’, ‘under’
    - Articles, ‘the’, ‘a’
    - Pronouns, ‘he’ ‘him’ ‘she’ her’ etc.

Acquisition

- Children begin to acquire functional categories around the time they begin to make word combinations
- They are acquired over several years

Influencing Factors

- Semantic Complexity, e.g. {-ing} vs. {-ed}
- Syntactic Complexity, e.g. agreement present tense {-s} vs. past tense {-ed}
  - ‘I walk’ ‘he walk/s’
  - ‘I walk/ed’ ‘he walk/ed’
- Perceptual Salience, e.g. present {-s} vs. progressive {-ing}
- Frequency,
  - e.g. {-s} vs {-ing}
  - e.g. ‘in’ vs. ‘between’
- Allomorphy: variants of a single morpheme
  - E.g. ‘plural’ {-s}
    - cats /s/ dog /z/ bush /ez/
  - children need to acquire all the variants
  - {-ing} has no variants

How to Measure?

- MLU in morphemes: Commonly used
  - Can increase due to added words
  - Difficult to do
e.g. ‘don’t, ‘I’ll’
   ‘hablo’ 1st person, present, singular
Recommendation: Use MLU in words

- Percentage of Obligatory Occurrence
  How often is a morpheme used when it is required?
  - commonly used
  E.g. Plural {-s}
  ‘I got two toy/s’
  ‘see those boy’
  ‘my cup/s’  67% (2/3)
  90% indicates acquisition (Brown)

Some Problems
  Not good for all morphemes,
  articles ‘the’ vs ‘a’ “I want cookie”
  auxiliaries, e.g. “mommy go tomorrow”
  Requires reading child’s mind to an extent
  e.g. “two cookie”
  Low reliability: studies don’t often agree
  Doesn’t consider allomorphs

- Count actual occurrences
  Use of morphemes increases over time
  Simplest measure
  Most reliable

Some Studies

Brown (1973)
14 Grammatical Morphemes
Obligatory Occurrence
I   ‘on’ ‘plural’
II  ‘ing’, ‘in’, past irregular
IV  possessive

Brown’s Conclusions
  ■ Few grammatical morphemes acquired during the first 4 stages
  ■ Irregular past preceded regular past
  ■ Plural and –ing first inflections acquired

Cazden (1968)
Adam, Eve, Sarah
5 inflections

Measures:
  • Correct use
  • Inappropriate Use, e.g. ‘one dogs’
  • Overgeneralizations, e.g. ‘two foots’
Cazden’s Results: ‘plural’

<table>
<thead>
<tr>
<th>Period</th>
<th>Correct</th>
<th>#inapprop.</th>
<th>#overgeneralization</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>.00</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>B</td>
<td>.13-.36</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>C</td>
<td>.68-.86</td>
<td>39</td>
<td>10</td>
</tr>
<tr>
<td>D</td>
<td>.94-.98</td>
<td>83</td>
<td>70</td>
</tr>
</tbody>
</table>

What do these data say about the inappropriate uses and overgeneralizations?

Interpretation
- Inappropriate Use precedes overgeneralization
- Inappropriate Use is a lexical error
- Overgeneralization only occurs when there is a high rate of success

**Marcus et al. 1992**
- English past tense
- 11,521 irregular past tense verbs, 83 SS
- Low rate of overgeneralization 2.5%

Explanation:
- Irregulars are memorized; rule for regulars
- Retrieval of irregular blocks rule
- Errors are retrieval errors; i.e. when retrieval fails, rule is applied

**Berko (1958)**
- 5 & 6 year olds
- A range of English morphemes
- Nonsense words
- Famous “wug” study

**Berko’s Results**

<table>
<thead>
<tr>
<th></th>
<th>Plurals:</th>
<th>Possessive:</th>
<th>3\textsuperscript{rd} Person:</th>
</tr>
</thead>
<tbody>
<tr>
<td>glasses</td>
<td>91%</td>
<td>nizzes 28%</td>
<td>loodges 56%</td>
</tr>
<tr>
<td>wugs</td>
<td>91%</td>
<td>wug’s 84%</td>
<td>nazzes 48%</td>
</tr>
<tr>
<td>tasses</td>
<td>36%</td>
<td></td>
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</tr>
</tbody>
</table>

Berko’s Results
- Accurate use of all allomorphs takes a long time
- Not just phonological, i.e. plural, possessive, & 3\textsuperscript{rd} person show different scores

**Summary**
- Morphological acquisition covers several years
- Different factors influence learning
- Measures vary