Acquisition of Irregular Patterns in Spanish Verbal Morphology

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1. Introduction

English past tense acquisition has been the subject of a long controversy between connectionism and generative linguistics. However, English past tense has simple morphology and phonology. Thus, the debate can benefit from looking at a morphologically more complex language.

Goals of this paper:
1. Analyze data from acquisition of irregular patterns in Spanish verbs.
2. Is the data compatible with all models of morphology acquisition?

2. Background

2.1 Irregular patterns

• Analysis of lexically arbitrary verbal alternations.
• They are a minority pattern in the 1st conjugation and more common in the 2nd and 3rd [AHL, 2000].
• All the verbs in the 3rd conjugation undergo some alternation.

A. Diphthongization in stressed syllables:
   [αι] → [ai] comienzo vs. comienzo
   [αι] → [e] comité vs. comité

B. Raising in stressed syllables (only 3rd conj.):
   [ε] → [i] pélito vs. pélito

C. Vowel insertion:
   ϕ → [ε] poner vs. pongo

2.2 Morphology acquisition

Words and Rules (WR): all regulars are derived by a rule, while irregular forms are individually stored in the lexicon.

Rules and Competition (RC): there are rules both for the regular forms and for the irregular forms and these rules compete against each other. Acquisition task consists of:
1. Learning whether an irregular rule R applies to a certain subclass of verbs.
2. Learning whether a verb x belongs to a certain irregular class of verbs S

3. Data and Results

• Data transcriptions of six Spanish-speaking children from the CHILDES database [MS, 1985].
• Extraction of:
  1. Correct verbs containing one of the irregular patterns: 'quiero'
  2. Overregularized verbs: 'quero'
  3. Overirregularized verbs: 'cuemo'

• All the findings are compatible with the Rules and Competition model, which proposes that irregular verbs are organized in subclasses and derived by rules.

4. Analysis

4.1 Statistics

• Out of our variables (conjugation class, type of irregularity, adult input), which one gives us the best statistical model?
• Best regression contains 2 variables: (1) input from adults and (2) whether a verb belongs to the 1st conj.
• This model achieves significant results: F = 6.1, p < 0.02

5. Conclusions

• Can the Words and Rules model account for all the findings?
  - NO!
  - WR predicts that irregular verbs are individually stored in the lexicon.
  - Conjugation or type of irregularity should not have any effect on how well the verb is used, contrary to the facts.
  - The gap between the blue and the red line in Figure 3 should not be significant, but it is.

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References


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