

## THE ACQUISITION OF MULTILINGUAL PHONOLOGY

Eduardo D. Faingold  
State University of New York at Stony Brook

### ABSTRACT

I am concerned with processes and strategies of early phonological and lexical development in multilingual children--Spanish, Portuguese, and Hebrew vs. English and Hebrew. The simultaneous acquisition of closely related languages such as Spanish and Portuguese vs. that of non-related languages such as English and Hebrew yields different results: The former 'prefer' maintenance, while the latter 'prefer' reduction. The Spanish and Portuguese-speaking children's high accuracy stems from a wider choice of target words, where the diachronic development of two closely related languages provides a choice of simplified words.

### INTRODUCTION

Berman's study of the simultaneous acquisition of Hebrew and English phonology and lexicon discusses her daughter Shelli's strategy of reducing the number of syllables [1]. She also discusses the universally observed deletion of a final and initial consonant and the deletion of one member of a vocalic or consonant cluster; and she further presents a small number of 'full' words and a limited use of reduplication and transposition. Table 1 shows the breakdown of Shelli's first 175 words.

Table 1. Shelli's vocabulary (1;6;0 - 1;11;15) (Berman 1977)

	number	%
'Full' words	50	29
Reduction	100	57
Reduplication	10	5
Transposition	15	9
-----		
Total	175	100

Shelli's phonological development was contrasted to that of Noam's simultaneous acquisition of Spanish, Portuguese, and Hebrew [2]. Unlike Shelli, Noam's lexicon shows maintenance--a large number of perfect replicas of adult words, as well as other 'full' structures. Both children show: (a) the universally observed deletion of final and initial consonants; (b) the deletion of one member of the consonantal or vocalic clusters; and (c) a small number of transpositions in words which, presumably, present difficulties. Table 2 shows the breakdown of Noam's first 175 words.

Table 2. Noam's vocabulary (1;1;2 - 1;9;0) (Faingold 1990)

	number	%
'Full' words	79	45
Reduction	43	25
Reduplication	41	23
Transposition	12	7
-----		
Total	175	100

In sum, Noam and Shelli show two opposite strategies in the construction of their early lexicon--maintenance

vs. reduction. The process of syllable reduction is focal in Shelli and minimal in Noam, while the use of syllable maintenance and reduplication is focal in Noam and marginal in Shelli. Final and initial consonant deletion and vocalic and consonant cluster reduction are systematic, universal, and language-independent in child language in general [4], and are also manifested in both Noam and Shelli, despite their different strategies and linguistic input. There are, however, quantitatively speaking, many more 'full' words in Noam's than in Shelli's lexicon.

### DATA COLLECTION AND ANALYSIS

Nurit was visited two or three times a week from age 0;11 to 1;11 in her home in Jerusalem (Israel). Stimulus materials included picture books, drawings, and any object in her home. I kept a diary of Nurit, using the same transcription level as for Noam [2], [3]. Unlike Noam, Nurit was not tape-recorded, since this was felt as an intrusion into the home of Nurit's parents. The principle of "one person, one language" [5] was observed consistently by both Noam's and Nurit's parents and sitters. Both children were thus exposed to the same varieties of (La Plata) Argentine Spanish and (São Paulo) Brazilian Portuguese.

As with [1] and [2], the data in this paper refers to one-word utterances produced by Nurit which offer a clear and consistent semantic interpretation; only words produced spontaneously were considered as part of her active

vocabulary, while all imitations were excluded. The quantification and analysis of Nurit's data, i.e. the use of percentages, follows [1] and [2]. The results in this paper are thus fully comparable to those discussed by these authors.

### NURIT'S PROCESSES AND STRATEGIES

Table 3 shows the breakdown of Nurit's first 73 words.

Table 3. Nurit's vocabulary (1;2;15 - 1;11;0)

	number	%
'Full' words	39	54
Reduction	22	30
Reduplication	9	12
Transposition	3	4
-----		
Total	73	100

### 'Full' words

As with Noam, Nurit produced a large number of 'full' words. Table 3 presents 39 'full' words (54% of the total). This set is divided into (i) perfect replicas (e.g. Pt. [ke] 'want', Sp. [papá] 'father'), and (ii) replicas with substitution (e.g. [mei] < Pt. [meu] 'mine', [tau] < Sp. [tâau] 'bye'). Perfect replicas are copies of adult words in one of the input languages to which the child is exposed.

### Reduction

Table 3 presents 22 words that suffer reduction (30% of the total). This set is divided into (i) reduction of segments (e.g. [ki] < Sp., Pt. [aki] 'here', [ma] < Sp. [mas] 'more') and (ii) reduction of syllables (e.g. [bo] < Pt. [bola] 'ball', [nana] <

Sp., Pt. [banana] 'banana'). Segments are consistently deleted in all positions by universally observed constraints on the production of initial and final consonants, as well as vocalic and consonant clusters. As with Noam, in (ii) syllables are deleted only occasionally, and they are generally maintained by reduplication as well as by the production of 'full' words.

As with Noam, Nurit's use of syllable reduction is marginal. However, both children present a significant number of deleted segments in initial and final and cluster positions, since this is a universal process of child language acquisition.

#### Reduplication

Table 3 presents 9 cases of reduplication (12% of the total). A reduplicated structure is a segment or a syllable that is not in reduplicated form in the input language. This set is divided into reduplication of (i) segments (e.g. [eme] < Sp., Pt. [kome] 'eat', [total] < Hbw [toda] 'thanks'), and (ii) syllables (e.g. [papa] < Sp., Pt. [paula] 'Paula', [bobo] < Pt. [akabo] 'all gone'). Like Noam, she makes a creative use of harmonization rules to match the syllabic patterns of the adult model [2], [4]. However, unlike Noam, she presents a smaller number of reduplicated segments and syllables. The reason appears to be that while Noam capitalizes equally on both 'full' words and reduplication to produce a

higher number of words that match the syllabic patterns of the adult input, Nurit uses almost exclusively 'full' words--which are mostly perfect replicas of the adult model. Nurit seems to be a slower and cautious learner, yet more accurate at hitting at adult targets, since her vocabulary is smaller yet more adult-like. Both children, however, obtain similar results. Despite the slightly different approaches to maintenance and the different number of items produced by each child (Noam's 175 vs. Nurit's 73) at comparable stages in language acquisition, their selection of phonological processes remains, in quantitative terms, almost identical for both children (compare Table 2 vs. Table 3).

#### Transpositions

Table 3 notes three cases of transposition ([leil] < Pt. [le] 'read', [toi] < Pt. [istoriña] 'tale', [abi] < Hbw. [omRi] 'Omri'). Nurit's use of transpositions is much lower than Noam's (or Shelli's). As noted, Nurit seems to be a much more cautious and accurate learner, and this fact probably accounts for her small number of transpositions as well as for her high number of 'full' words.

#### MAINTENANCE: A LANGUAGE-DEPENDENT STRATEGY

The majority of the words produced by Noam and Nurit are perfect replicas of adult words in one of the input languages to which the child is exposed. From the point of view of another cognate word in another input

language, they are producing reduced versions of the adult word. For example, Nurit's [ke] 'I want' and [sai] 'go away' are perfect replicas of the Portuguese adult models, but they are also reduced versions of the Spanish cognates [kiero] and [salí]; similarly, Nurit's [papá] 'father' is a perfect replica of the Spanish adult model but it is also a reduced version of the Portuguese cognate [papai], all of which Nurit understands. In parallel fashion, as I have shown in [2], Noam produced adult Spanish (e.g. [si], 'yes' [asi] 'in this manner', [papá] 'father', [mamá] 'mother') and Portuguese words (e.g. [sai] 'go away') which might be in fact reduced versions of the adult Portuguese ([sim], [asim], [papai], [mamai]) and Spanish cognates ([salí]), all of which Noam understands. Even though [ke], [sai], [papá], [mamá], [si], [asi], etc. might be reductions of [kiero], [salí], [papai], [mamai], [sim], [asim], etc., they are all still 'full' words in one of the input languages. In this sense, all the perfect replicas produced by Noam and Nurit are 'legitimate' lexical items, since no deviations of the adult patterns occur.

Variation in the application of maintenance and reduction rules by Noam and Nurit vs. Shelli is thus systematic. The Spanish/Portuguese-speaking children's high rate of phonological and lexical accuracy results from a wider choice of target words, where the diachronic development of two closely related languages

provides a simplified but legitimate model lexicon to the child. Thus, Nurit and Noam's high number of perfect replicas might be the result of an exploitation strategy or phonological preference [6]. In contrast, the simultaneous acquisition of unrelated languages such as English and Hebrew yields different results--a low number of adult replicas, as well as little reduplication and a high number of reduced syllables.

#### REFERENCES

- [1] Berman, R. 1977. Natural phonological processes at the one word stage. *Lingua* 43:1-21.
- [2] Faingold, E. D. 1990. The acquisition of syllabic and word structure: Individual differences and universal constraints. *Language Sciences* 12:101-113.
- [3] Faingold, E. D. in press. *Child Language, Creolization, and Historical Change. Spanish in Contact with Portuguese*. Tübingen: Narr.
- [4] Ingram, D. 1979. Phonological patterns in the speech of young children. *Language Acquisition*, pp.133-48. Paul Fletcher & Michael Garman (eds.). Cambridge: University Press.
- [5] Leopold, W. 1939. *Speech Development of a Bilingual Child: A Linguist's Record*. Vol 1. Evanston: Northwestern University Press.
- [6] Menyuk, P. & Menn, L. 1979. Early strategies for the perception and production of words. *Language Acquisition*, pp.49-70. Paul Fletcher & Michael Garman (eds.). Cambridge: University Press.