

NATURAL CLASSES IN BABBLING AND EARLY WORDS

*Maria de Fatima de Almeida BAIA

+Daniel Oliveira PERES

* Universidade Estadual do Sudoeste da Bahia– UESB/ + Universidade de Sao Paulo

baiamfa.ling@gmail.com / danielperes@usp.br



Goal

This study investigates if there is any evidence in Brazilian Portuguese (henceforth BP) acquisition of CV combinations preferences in babbling and early speech as Davis and MacNeilage (1995) and MacNeilage et al. (2000) propose.

Dynamic Perspective of Language Development

•The perspective emphasises that variety, flexibility and asynchrony tend to occur in the developmental process (Thelen; Smith, 1994).

•According to the perspective, there is instability in development as there are adjustments in the system due to the self-organization principle.

•Dynamic Systems Theory stresses the continuity between the development of phonological structure and the development of all other structures in nature (Szreder, 2012, p. 14)

Davis and MacNeilage Hypothesis

•Davis and MacNeilage (1995) and MacNeilage et al. (2000: 155) observe in child data from different languages three CV co-occurrence preferences: **coronal consonants co-occur with front vowels, dorsal consonants with back vowels, and labial consonants with central vowels.** The hypothesis is that these combinations would be predominant in late babbling and early words.

•Combinations share positions in the vocal tract and are compatible with the natural classes proposed by Clements and Hume (1995) in their unified feature proposal, in which vowels or consonants can be classified as labial, dorsal or coronal.

•The use of natural classes in the analysis of segmental combinations in this study is not contradictory as there is an emergentist claim for the natural classes, which explains common sound patterns as result of common historical changes (Mielke, 2005), in addition to the innatist claim (Clements and Hume, 1995).

Methodology

•Longitudinal data of three male children acquiring BP as first language: (1) **M.** 09 – 2;0, 16 sessions/months, 242 babbling productions, 1975 tokens; (2) **A.** 09 – 2;0, 16 sessions/months, 384 babbling productions, 687 tokens; (3) **G.** 0;10 – 2;0, 15 sessions/months, 274 babbling productions, 939 tokens.

•The combinations taken into consideration were: CC, CD̩, CD, DC, DD̩, DD, LC, LD̩, LD.

C: coronal (coronal consonants and front vowels), D: dorsal (dorsal consonants and [a] vowel), L: labial (labial consonants), D̩: dorsal labial vowels (back and round vowels [u, o, ɔ]).

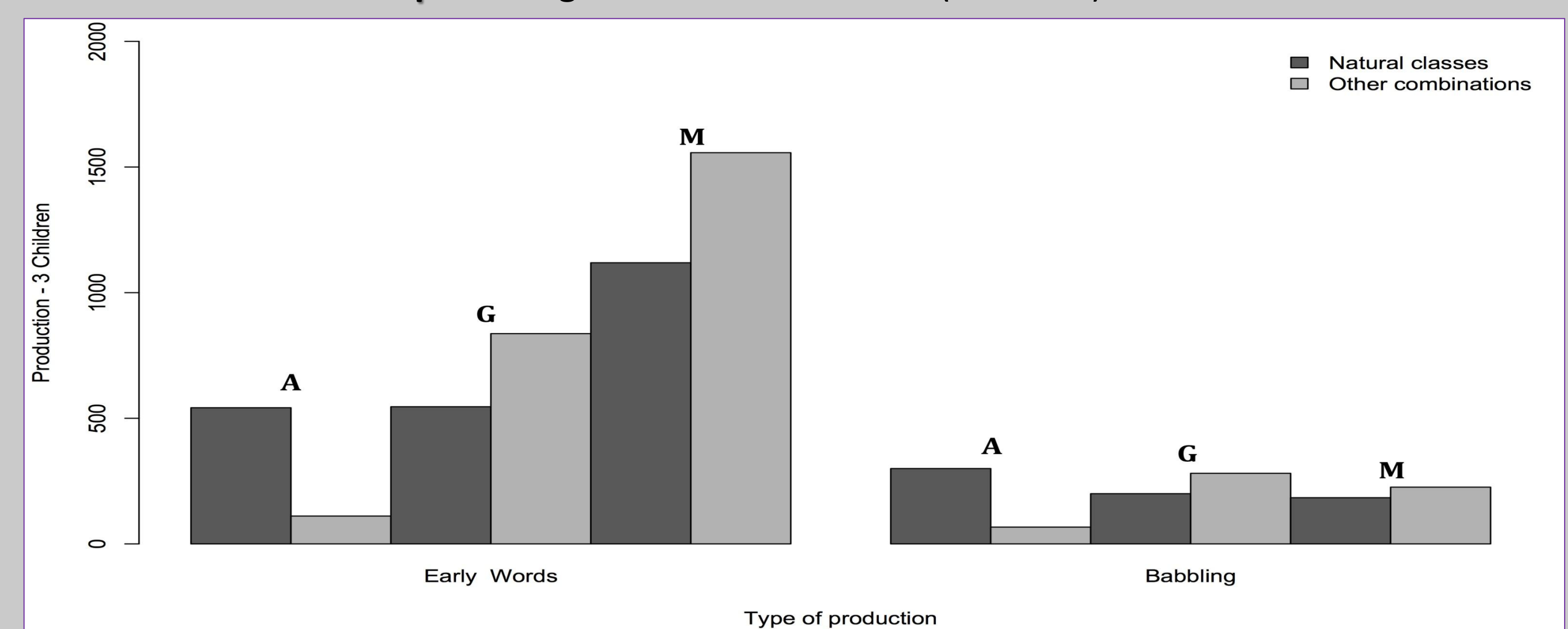
Table 1: When a word is a word – criteria proposed by Vihman and McCune (1994)

Candidate	TARGET	CONTEXT				VOCAL SHAPE			OTHER			DECISION
		Determ	M/F id	Mult Uses	Mult. Epis	Complex	Exact	Prosody	Imit	Invar	No inap	
[go.'go]	brinquedo	X	X									NO
[ga.'ga]	Bola/gol	X	X	X				X		X	X	YES

Analysis/Results

•**Segmental combinations differed from child to child.** The bias proposed by MacNeilage et al. (2000) was not supported by the data as the combination of vocalic and consonantal segments from the same class was not predominant. In general, the most frequent combinations in babbling (B) were not the same in words (W) and did not tend to be characterised by segments from the same class:

Graph 1: Segmental combinations (B and W)



M. B (DD, CD) and W (CD, CL)

A. B (CD, CC) and W (CC, CD)

G. B (LD, LD̩) and W (LD, CC)

•The correspondence between the segmental combinations in babbling and words was evident in the very early sessions from 0;9 to 0;10 in M. and A., and from 0;10 to 1;2 in G. LD prevailed over other combinations in early sessions (B and W), except for M and A. at 0;10 (DD and DD̩).

•One-way ANOVA was performed involving the production of babbling and early words of each child (dependent variable) and the combination preferences claimed by MacNeilage et al. (2000) and other possible combinations considering natural classes (independent variable). The results showed a non significant difference between the combinations, **pointing to a random distribution of segments in CV syllables:**

The results regarding **babbling**: **M.** $F(1.42) = 0.003, p > 0.05$; **A.** $F(1.42) = 0.308, p > 0.05$ and **G.** $F(1.33) = 0.172, p > 0.05$.

The results regarding **early words**: **M.** $F(1.42) = 0.291, p > 0.05$; **A.** $F(1.42) = 0.92, p > 0.05$ and **G.** $F(1.33) = 0.806, p > 0.05$.

Final Remarks

The conclusion is that BP babbling and early words do not support the claim of combination preferences. Our data showed variability in phonological development. The system organizes itself due to its inherent ability to find patterns from some type of interaction. In dynamic terms of development, it is noted that the order in acquisition arises from the variability.

Reference

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