

A dynamic approach on the acquisition of allophones: a Brazilian Portuguese Case



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Goal

This study describes phonological development of stops and affricates in two varieties of Brazilian Portuguese (BP): Belo Horizonte and São Paulo.

What are the potential trajectories to acquire an affricate in BP?

Affricates in BP

Affricates in BP are assumed to be allophones of alveolar stops reflecting a palatalization process whose trigger is a high front vowel.

/t/ → [tʃ]/_____i
/d/ → [dʒ]/_____i

[tʃia] *tia* aunt or [dʒia] *dia* day

Dynamic Perspective of Language Development

*The perspective emphasizes 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.

Whole-Word Phonology

*The organizing principle in early phonological development is the whole word, not features or segments, as many unusual phonological substitutions found in early productions are best understood under this interpretation.

*The initial phonological production is neither punctual nor local.

*These early word patterns can be understood as **templates**, i.e. systematic shapes that facilitate expansion of the lexicon.

*These early **templates** are shaped by the balance between universal, language-specific and individual child factors (Vihman & Croft, 2007).

Longitudinal corpora:

The first corpus was collected from children born and raised in **Belo Horizonte** and comprised **three boys** and **one girl** who were typically developing children (data collection for 12 months, monthly, in 2007).

Age: 1; 6 – 1;11. P.: 1;11/ Lu.: 1;6/ La.: 1;6/ G.: 1;9.

The second corpus was collected from children born and raised in **São Paulo** and comprised **three male children** from São Paulo who were typically developing children (data collection for 24 months, monthly, from 2009 - 2010).

Age: 0;9 – 2;0. M.: 0;9/ A.: 0;9/G.: 0;10.

Results

Table 1: Trajectories to acquire an affricate in BP from Belo Horizonte

	2	3	4	5	6	7	8	9	10	11	12
P.											
f											
t											
ts											
ʃ											
s											
ç											
d											
dʒ											
ʒ											
z											
h											
k											
Lu.											
f											
t											
ts											
ʃ											
s											
ç											
d											
dʒ											
ʒ											
z											
h											
k											
La.											
f											
t											
ts											
ʃ											
s											
ç											
d											
dʒ											
ʒ											
z											
h											
k											
G.											
f											
t											
ts											
ʃ											
s											
ç											
d											
dʒ											
ʒ											
z											
h											
k											

Table 2: Trajectories to acquire an affricate in BP from São Paulo

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
M.																
f																
t																
ts																
ʃ																
s																
ç																
d																
dʰ																
ʒ																
z																
h																
k																
tʃ																
dʒ																
∅																
Ad																
A.																
f																
t																
ts																
ʃ																
s																
ç																
d																
dʰ																
ʒ																
z																
h																
k																
tʃ																
dʒ																
∅																
Ad																

G.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
f															
t															
ts															
ʃ															
s															
ç															
d															
dʰ															
ʒ															
z															
h															
k															
tʃ															
dʒ															
∅															
Ad															

Examples of adaptation: (1) Fátima [ˈfa.tʃi.me] - [pa.'pa], (2) Pitbull [pi.tʃi.'bu:] - [bu.'bu], (3) Médico doctor [ˈmɛ.dʒi.ko] - [ˈki.ko]

Final Remarks

The data examined showed intra and inter-dialect variability in phonological development amongst speakers through different paths or trajectories which expressed the strategies children had in order to try to construct the category 'affricates'. Put it in other words we may say that the interplay categories are not just alveolar stops and affricates but rather a wide variety of articulatory targets.

References

Thelen, E.; Smith, L. B. *A Dynamic Systems Approach to the Development of Cognition and Action*. Cambridge, MA: MIT Press, 1994.
Vihman, M.; Croft, W. Phonological development toward a "radical" templatic phonology. *Linguistics*. 45-4, p. 683-725, 2007.