dinafon

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Aim

What phonetic-phonologic characteristics permeate the transfer across the languages spoken by a multilingual individual? The aims of this study are:

1) to analyze the dynamics of transfer in the VOT patterns of the initial obstruents /p/, /t/ and /k/ in the three languages spoken by multilingual children (within group analysis);

2) to compare the VOT patterns of voiceless stops produced in English by monolingual speakers of Brazilian Portuguese (BP) in the initial stages of EFL with the VOT patterns produced in English (L3) by bilingual speakers of Pomeranian (L1) and BP (L2) (between group analysis).

Dynamic systems and phonetic-phonologic transfer

-SLM Model / PAM – transfer - the influence of perception and production of L2 .

-There is no consensus about the L1 being the main source of influence in multilinguals' L3.

-Some authors assume that there is a greater transfer of the patterns from the L2 than the L1 on L3 (Hammarberg, 2001).

- Gestural drift (Sancier & Fowler,1997): Conjoint relevance of:

 *Disposition to imitate ambient language

 *Capacity to detect a correspondence between L1 and L2 phonetic-phonological patterns;

 * Effect of recency on perception and production.

- Dyamic interpretation of gestural drift: change in the state of the vocal tract system over time in its stable or preferred phase relations as reflected in a layout of attractors.

- A possible change in the attractors: weakening or strengthening of L1/L2 attractor depending on the ambient language

Participants and Method

Participants

40 children , aged 8 – 10 years old, all 3rd graders in a public school at Arroio do Padre/RS.

Two groups: 20 monolinguals and 20 bilinguals.

Instruments

1. Interview to select participants;

2. Story-telling sessions: Adapted from Rinaldi (2008) instrument of speech production for kid, based on a fairy tale called "The fairy tales have gone nuts" in Portuguese, English and Pomeranian;

3. Tic-tac-toe.

Figure 1 - Story page and ti-tac-toe game

Recording sections were carried out inidividually in different days for each language.
 Number of tokens:
-Portuguese: /p/: 840 tokens (7 target words X 3 repetitions X 40 participants); /t/: 840 tokens; /k/: 840 tokens.
-Pomerannian: /p /: 300 tokens (5 target words X 3 repetitions X 20 participants) ;/t/: 300 tokens; /k/: 300 tokens.
-English: /p/: 360 tokens (3 target words X 3 repetition X 40 participants); /t/: 360 tokens; /k/:360 tokens.
The data were digitized at 44KHz and the VOT analized with the software Praat, version 5.1.04. (Boersma & Weenik, 2003).

Results

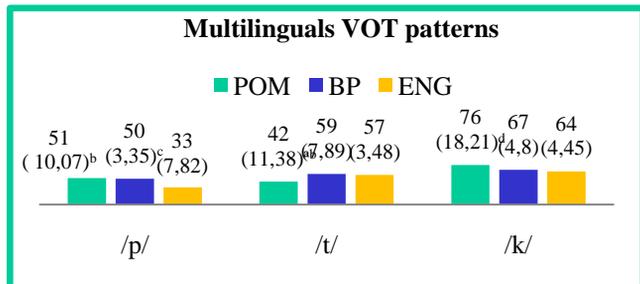1) Analyzes of VOT patterns within the multilingual group.

Figure 2: mean VOTs and SDs produced by multilinguals speakers i n the 3 different languages .
a: Statistical significant difference (p<0,001) - Pomeranian and BP– 3-way Anova/ Bonferroni test.
b: Statistical significant difference (p<0,001) - Pomeranian and English – 3-way Anova/Bonferroni test.
c: Statistical significant difference (p<0,001) - BP and English – 3-way Anova, Bonferroni test.
d: Statistical significant difference (p<0,005) - Pommeranian and English 3-way Anova, Bonferroni test.

Pom (L1) [kʰuga] 98ms

BP (L2) [kaza] 44ms

Eng (L3) [ku:l] 81ms
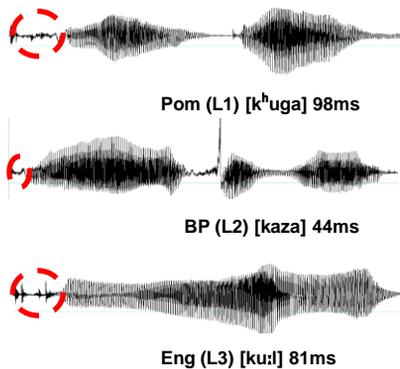
2) Comparison of English VOT patterns between groups:
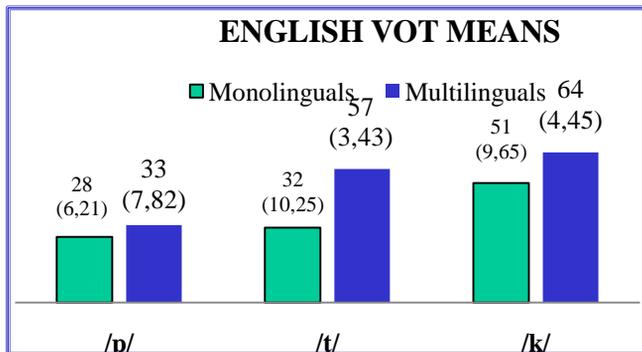

Figure 3: English VOT means: * : p<0,0005   ** : p<0,0001

Conclusion

- In Pomeranian /p/, /t/ and /k/: aspirated.
- Aspiration patterns seem to transfer to BP (L2) and English (L3).
- Higher SDs among bilinguals – gestural drift.

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