Too cautious to vary more?
A comparison of pitch variation in native and non-native productions of French and German speakers

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1 Introduction

- Learning a foreign language often leads to a foreign accent
- Affecting segmental and suprasegmental aspects of L2 [1,2]
  - o L2 speakers show reduced pitch range compared to native speakers (arguably due to less confidence and to a focus on segmental production) [3,4]
  - o Training seems to help [4]

Research questions:

1. Do language learners compress pitch range, irrespective of L1 (French or German) when speaking L2 (German or French)?
2. Do advanced learners show a less compressed pitch range?

2 Materials and Methods

- Data base: German – French learner corpus [6]
  - o 7 native speakers of German, 7 native speakers of French
  - o 5 beginners, 2 advanced speakers (per language)
  - o Reading Tasks: 25 sentences, and a story (in both languages)
- Pitch analysis:
  - o automatic ESPS algorithm (get_f0)
  - o hand-correction in PRAAT
  - o Pitch Dynamism Quotient (PDQ)
  - o Goal: normalization due to uneven number of female and male speakers in the two language groups
  - o PDQ = Std Dev (F_0) / Mean (F_0) [5], calculation in JMP, PDQ calculation for each audio file (Item)
- Linear mixed model:
  - o PDQ (dependent factor)
  - o Item, Speaker (random factor)
  - o Task language (French/German), Native language (French/German), Task (Sentence/Story), plus interactions (fixed factors)
  - o *Separate model*: identical to the first one plus proficiency as fixed factor

3 Results

- Significant effects:
  - o *Task* (F(1,735)=5.52, p<0.05)
  - o *Native language* X *Task language* (F(1,735)=14.85, p<0.0001)
  - o Separate model showed that *proficiency* was n.s.

4 Discussion

- Both language groups reduce pitch range in L2
- Less reduced pitch range in stories compared to sentences
- Small tendency of advanced learners to compress pitch range less than beginners

Conclusions

- Possibly, learners are not as confident in L2 as in L1, or they concentrate on segmental pronunciation
- Story task arguably increases liveliness of production
- Presumably, reduced pitch range can enhance a perceived foreign accent

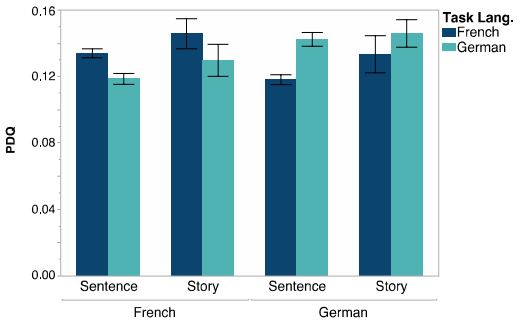

Fig1 *Mean PDQ of German & French speakers (by task, L1 and L2)*

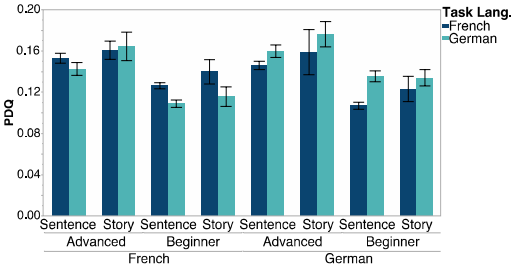

Fig2 *Mean PDQ for German & French speakers (by task, L1, L2 and proficiency)*

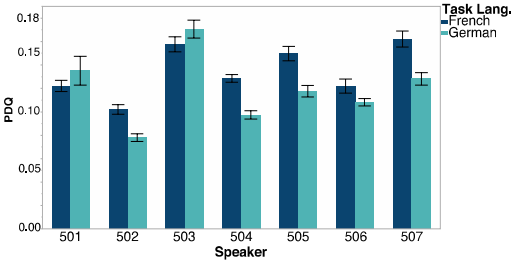

Fig3 *Mean PDQ of French speakers (Advanced: 503 & 505)*

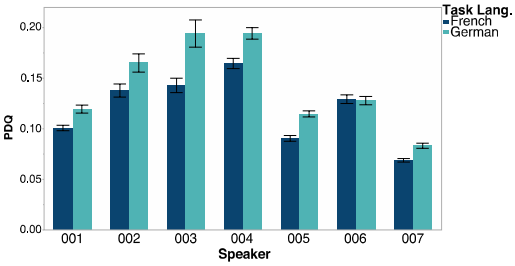

Fig4 *Mean PDQ of German speakers (Advanced: 004 & 006)*

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