



Sentence stress production of French speakers in Dutch: does a musical training help?

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1. French vs. Dutch

Fundamental prosodic differences (stress patterns)

French (demarcative function)	Dutch (contrastive function)
Post lexical stress at the end of words and at the end of syntactic constituents (accent primaire; Di Cristo, 2000: 28)	Lexical word stress change the meaning of a word (Rietveld & Van Heuven, 2016: 284)
	Sentence stress produced on contrasted or important word(s) in sentence (Rasier & Hilgsmann, 2007: 50)

- **transfer native stress pattern** (Rasier, 2004: 316; Rasier & Hilgsmann, 2007: 52): final accent + bridge accent

2. Musical training and prosody

Perception

- French-speaking musicians less *stress deaf* than French-speaking non-musicians (Kolinsky, et al., 2009; Degraeve, 2022)

Production

- Reproduction of musical rhythms as predictor of L2 stress patterns production (Cason, et al., 2020)

3. Research question

Do French-speaking musicians outperform French-speaking non-musicians in a sentence stress production task in Dutch?

4. Methodology

Material

- Sentence stress (SS) production task (Dejans & Degraeve, 2022; Hooreman, 2023)
- 9 noun phrases (NP: 'indefinite article + adjective + noun')
- 4 informational contexts: combinations of N(ew), C(ontrastive) and G(iven) information + fillers (negative sentence)

NN	GC	CG	CC	Negative
een blauwe cirkel 'a blue circle'	een blauw vierkant 'a blue square'	een rood vierkant 'a red square'	een gele ster 'a yellow star'	Ik weet het niet 'I do not know'

Participants

18 musicians* + 18 non-musicians

*Conditions: (i) have taken at least 5 years of music lessons at a music academy, and (ii) still play (or sing) music regularly.

Analyses

- **Perception** of sentence stress production by 8 judges:

- (1) 4 native speakers of Belgian Dutch
 - (2) 2 French-speaking linguists (specialization: Dutch)
 - (3) 2 Dutch-speaking linguists (specialization: Dutch)
- ⇒ had to indicate where they perceived SS in each NP

- **Generalized Linear Mixed Model**

5. Results & Discussion

- Score of correct SS production by the 8 judges:

Context	Musicians (N=18)	Non-musicians (N=18)	
NN (N=16)	76/288 (26,38%)	72/288 (25%)	4
CG (N=16)	92/288 (31,94%)	89/288 (30,90%)	3
GC (N=16)	117/288 (40,62%)	101/288 (35,07%)	2
CC (N=8)	61/144 (42,36%)	67/144 (46,53%)	1
Negative (N=16)	64/288 (22,22%)	48/288 (16,67%)	5
TOTAL	410/1296 (31,64%)	377/1296 (29%)	

Observations:

- Similar difficulties between musicians and non-musicians
- **CC-context** = the most accurate scores of productions
// bridge accent from French

> **GC-context > CG-context > NN-context > negative context**

⇒ Musicians outperform non-musicians in the present dataset
But, significant?

Results from Generalized Linear Mixed Model

- Musical profile ≠ significant ($p = 0.50643$)
- **Context** = significant ($p < 2e-16$)
- **Groups of judges** = significant ($p = 0.01548$)
- Interaction musical profile and context ≠ significant ($p = 0.40670$)

In the present dataset the French-speaking musicians (31,64%) **slightly outperform** the French-speaking non-musicians (29%) in a sentence stress production task in Dutch, **but this is not supported by statistical evidence**. The variable 'musical profile' showed no significance ($p = 0.50643$)

6. Critical discussion

Breakthrough:

- First picture of **Dutch SS production by French-speaking learners** with the variable 'musical profile'

Limitation:

- **self-report** (used to recruit musicians)
⇒ 5 years of music lessons perhaps not enough
- ⇒ **Future research**: **either** professional musicians **or** more years of music lessons

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