

Pauline Larrouy-Maestri & Dominique Morsomme

Unit « Logopédie de la Voix », Department of Psychology : Cognition and Behaviour, University of Liège, Belgium

## AIMS

### In the lab

- Music experts' evaluation is highly correlated with objective measurements of vocal accuracy.<sup>1</sup>
- Judges' rating is explained by two criteria:
  - the respect of intervals along the melody
  - the respect of tonality.



### Out of the lab

- Numerous factors can influence the judges' rating of a music performance.<sup>2</sup>
- Effect of the jury's expectations (i.e. music level).<sup>3</sup>



➔ Subjective factors which influence the evaluation of singing voice accuracy?

## METHODS

### Participants

- 31 music students of Music Conservatory (18 first- and 13 second-year students)
  - Performance of a melody during their music examination
  - Self-evaluation: enjoyment of singing, anxiety level (9 points scale)
- 4 expert judges
  - Evaluation of the global pitch accuracy: 1----2----3----4----5----6----7----8----9  
very inaccurate very accurate

### Objective measurements of vocal accuracy (in cents)<sup>4</sup>



Pitch extraction (AudioSculpt and OpenMusic, Ircam, Paris, France) and computation of errors

Pitch interval deviation

Tonal center deviation (1, 4, 7, 14, 15, 16, 17, 18)

### Statistical analysis

1. Selection of the participants in order to observe no difference (jury's rating, vocal accuracy and self-evaluation) between the two music levels
2. Relationship between the jury's rating and the variables for each music level

## RESULTS

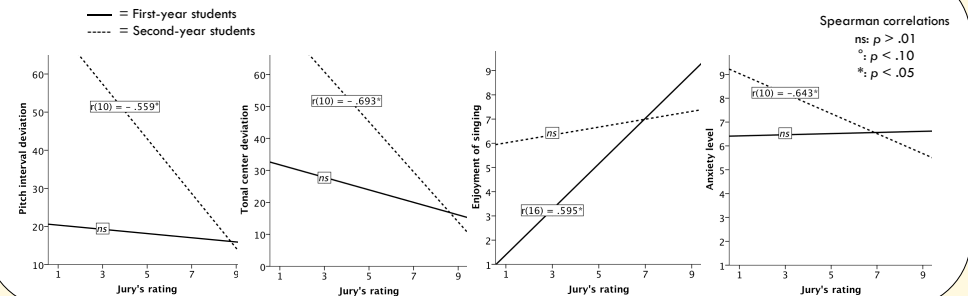
- Mean (SE) for the judge's rating, for the vocal accuracy measurements and for the self-evaluation according to the music level of the participants (excluding 5 students)

	Judge's rating	Vocal accuracy measurements		Self-evaluation	
		Pitch interval deviation	Tonal center deviation	Enjoyment of singing	Anxiety level
First-year students	6.97 (0.29)	17.05 (1.45)	20.06 (2.45)	7.00 (0.49)	6.46 (0.45)
Second-year students	7.04 (0.36)	28.37 (5.10)	29.22 (5.49)	7.00 (0.67)	6.50 (0.34)

- U Mann-Whitney: no significant differences between the two music levels  $p > .05$

2

- Relationship between the judge's rating and the variables observed for each music level



## CONCLUSIONS

Several relationships between the judge's rating and the variables according to the music level of the music students:

- First-year students: high jury rating when the student enjoys to sing
- Second-year students: high jury rating when the student sings accurately or perceives a low anxiety level

➔ Preliminary study with a promising method for the investigation of subjective factors, which influence the vocal assessment in an ecological context and to better understand the music evaluation process.

### REFERENCES

1. Larrouy-Maestri, P., Lévêque, Y., Schön, D., Giovanni, A., & Morsomme, D. (in press). The evaluation of singing voice accuracy : A comparison between subjective and objective methods. *J. Voice*.
2. McPherson, G. E., & Thompson, W. F. (1998). Assessing music performance: Issues and influences. *Research Studies in Music Education*, 10, 12-24.
3. Cavitt, M. E. (1997). Effects of expectations on evaluators' judgments of music performance. In R. A. Duke, & J. C. Henninger (Eds.). *Proceedings of the Annual Meeting of the Texas Music Educators Association*. San Antonio, Texas.
4. Larrouy-Maestri, P., Morsomme, D. (in press). Criteria and tools for objectively analysing the vocal accuracy of a popular song. *LPV*