Speech-rate across generations in two Toronto heritage languages

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The Road Less Travelled
University of Toronto
26-27 October 2012

How is speech rate studied?

variationist sociolinguistics

speech rate:
dependent variable

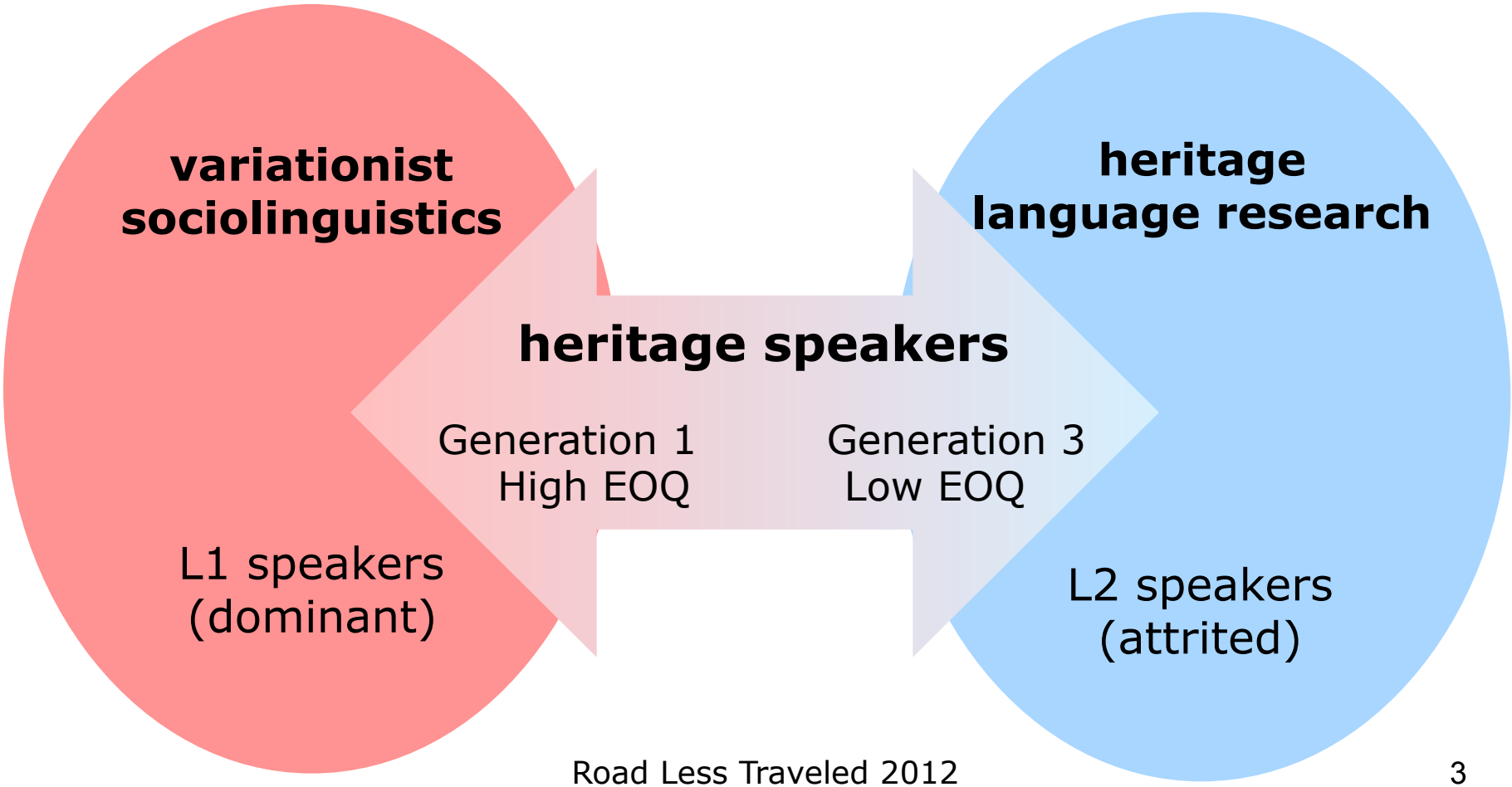
varies according to:
sex, age, region

heritage language research

speech rate:
predictor

predicts: grammatical competence, vocabulary size, proficiency

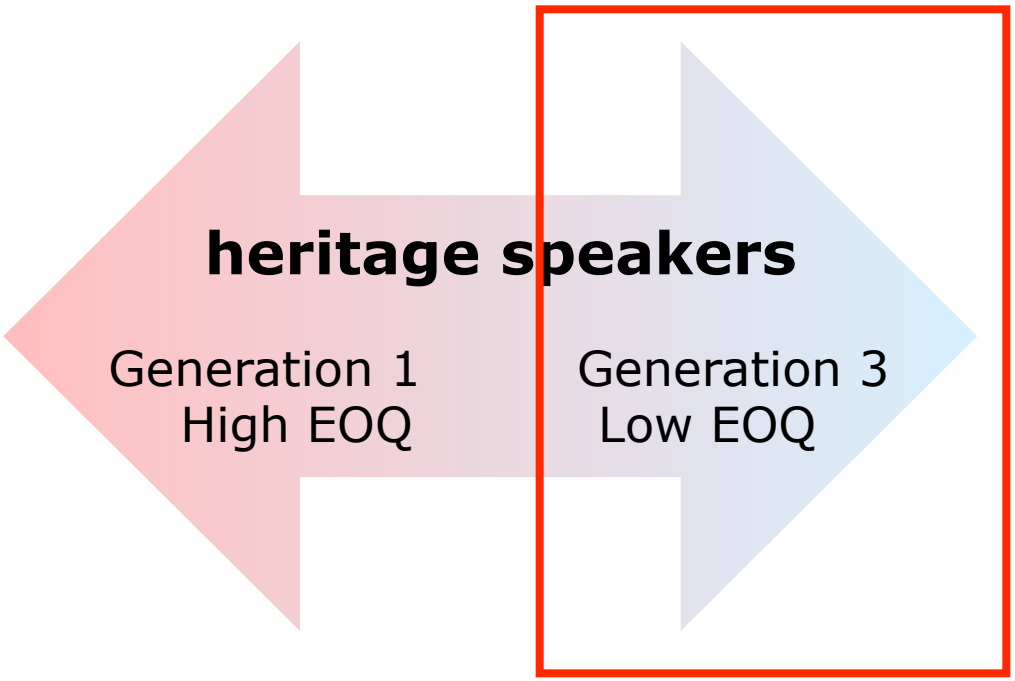
How is speech rate studied?



Gauging fluency

"Speech rate seems to emerge as one of the most sensitive measures reflecting the level of proficiency of a heritage speaker" (Polinsky 2008).

Variation vs. attrition



Social Sciences and Humanities Research Council of Canada
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Do we find linguistic variation along this continuum?
Can we find evidence of attrition?

This project

2 languages	3 generations*	2 sexes
Russian	**1:** Immigrants	Male
Italian	**2:** Immigrants' children	Female
	3: Immigrants' grandchildren	

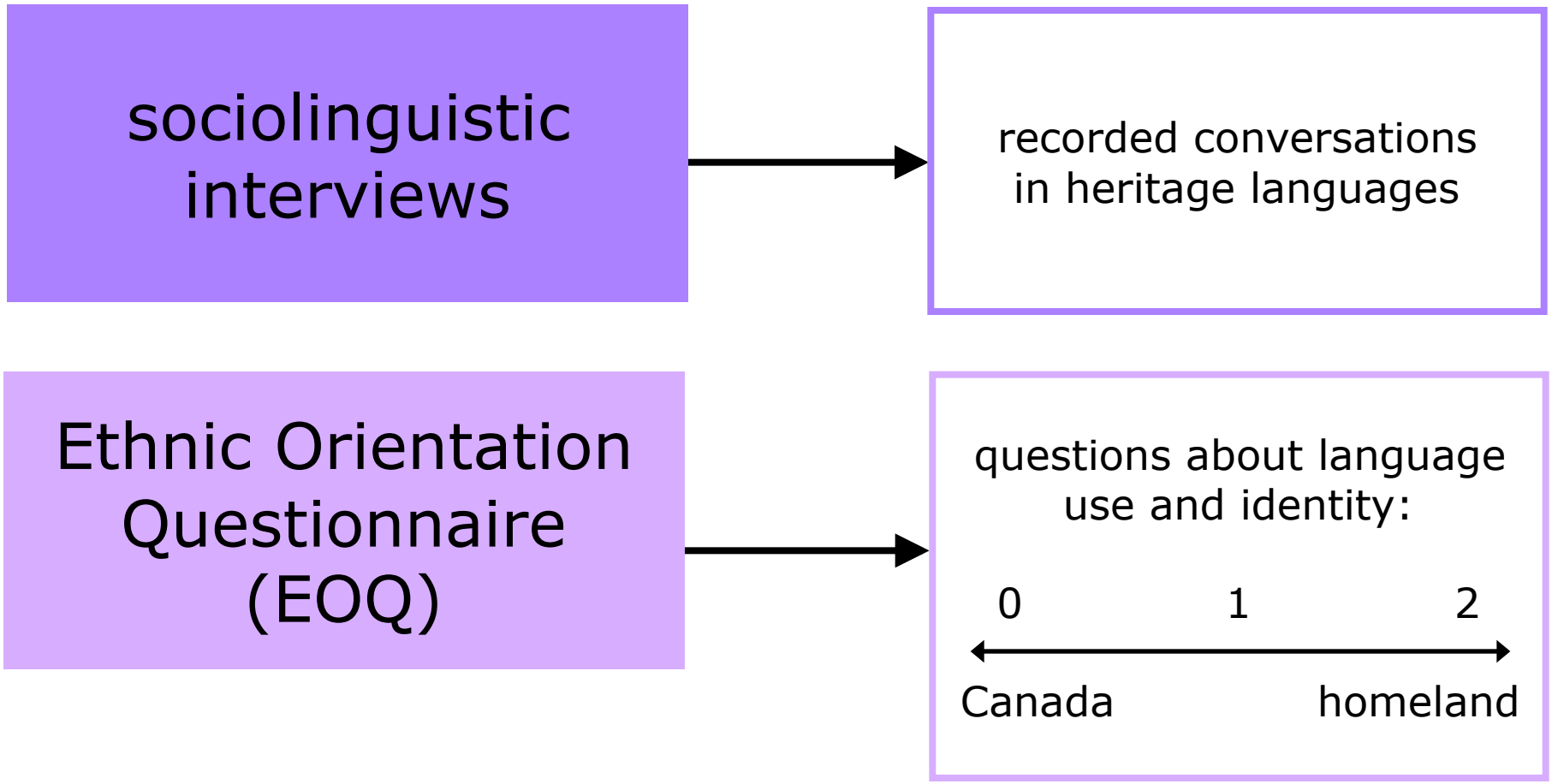
* Each generation spans a range of ages.

Speaker sample

Ideal

	Russian		Italian	
1st generation	2M	2F	2M	2F
2nd generation	2M	2F	2M	2F
3rd generation	2M	2F	2M	2F

The data


sociolinguistic interviews
recorded conversations in heritage languages
Ethnic Orientation Questionnaire (EOQ)
questions about language use and identity:
0
1
2
Canada
homeland

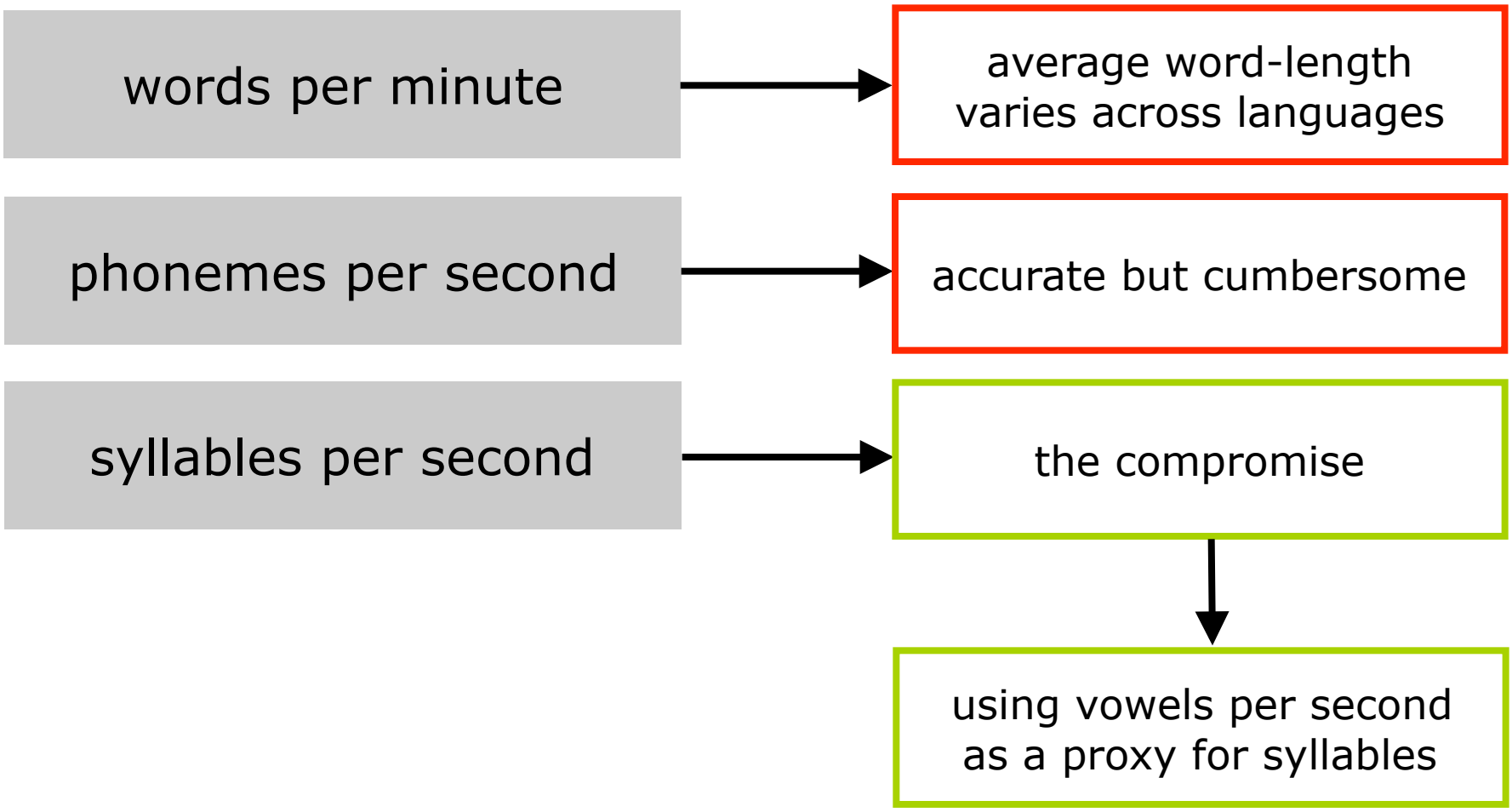
Measuring speech rate

avoid pauses/disfluencies

use longer turns only

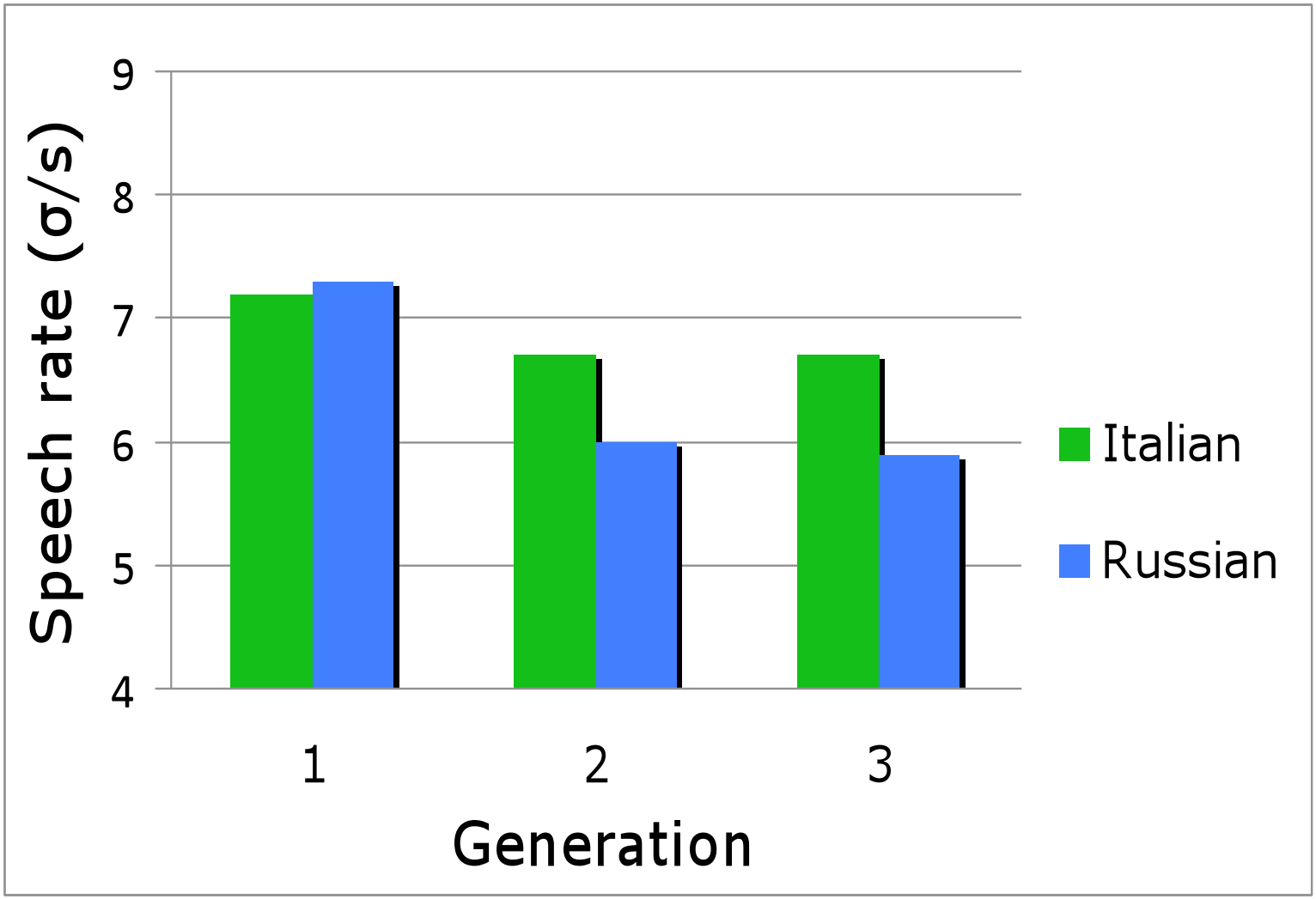
but how to calculate?

Measuring speech rate

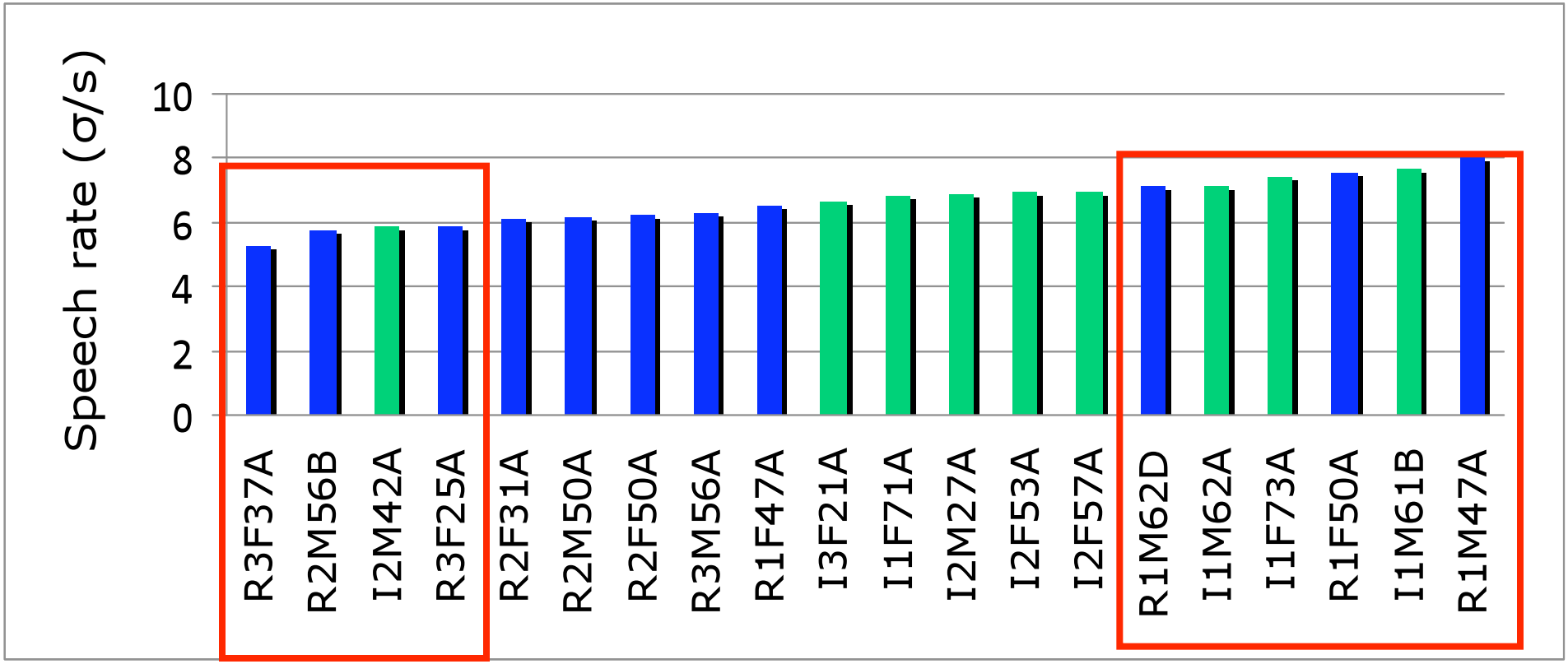


Measuring speech rate

Generational effects



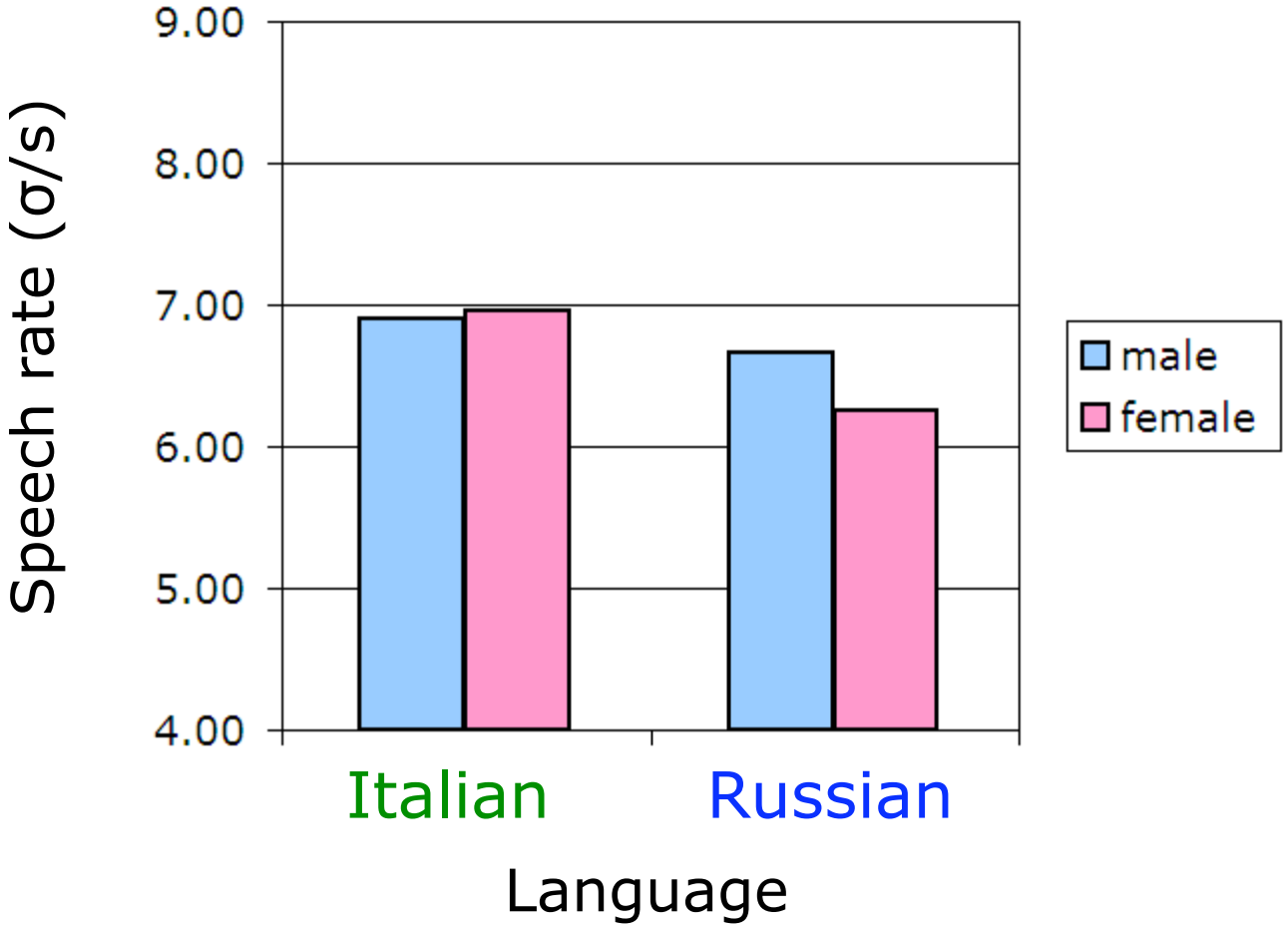
Gradience across individuals



Less fluent sounding

Most of Generation 1

Effects of language and sex



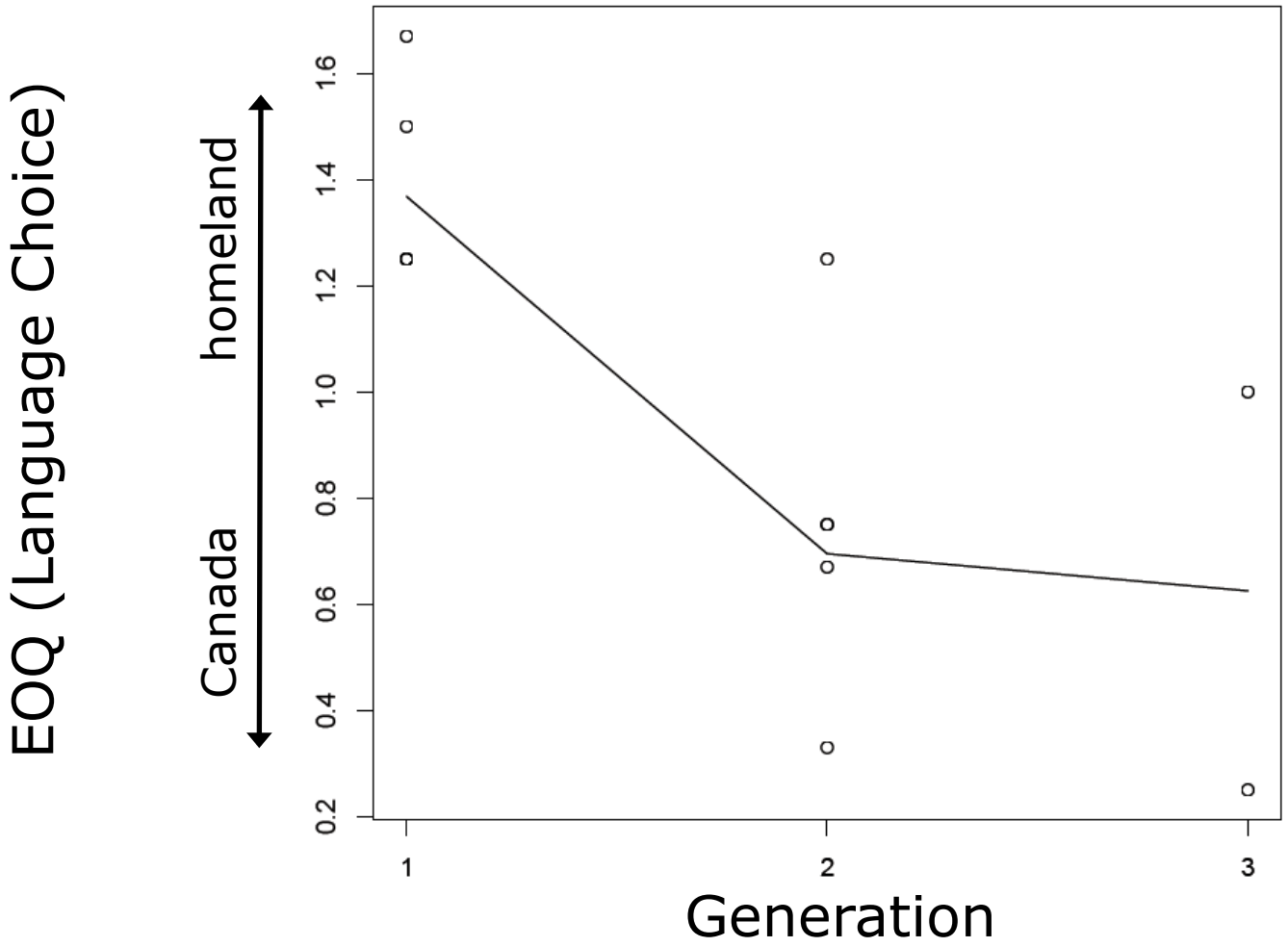
Effects of language

Russian	взгромоздиться /vzgrəmɐzʲdʲitsʲə/	4 vowels	14 letters
Italian	se appollaiare /seap:ol:aire/	7 vowels	13 letters

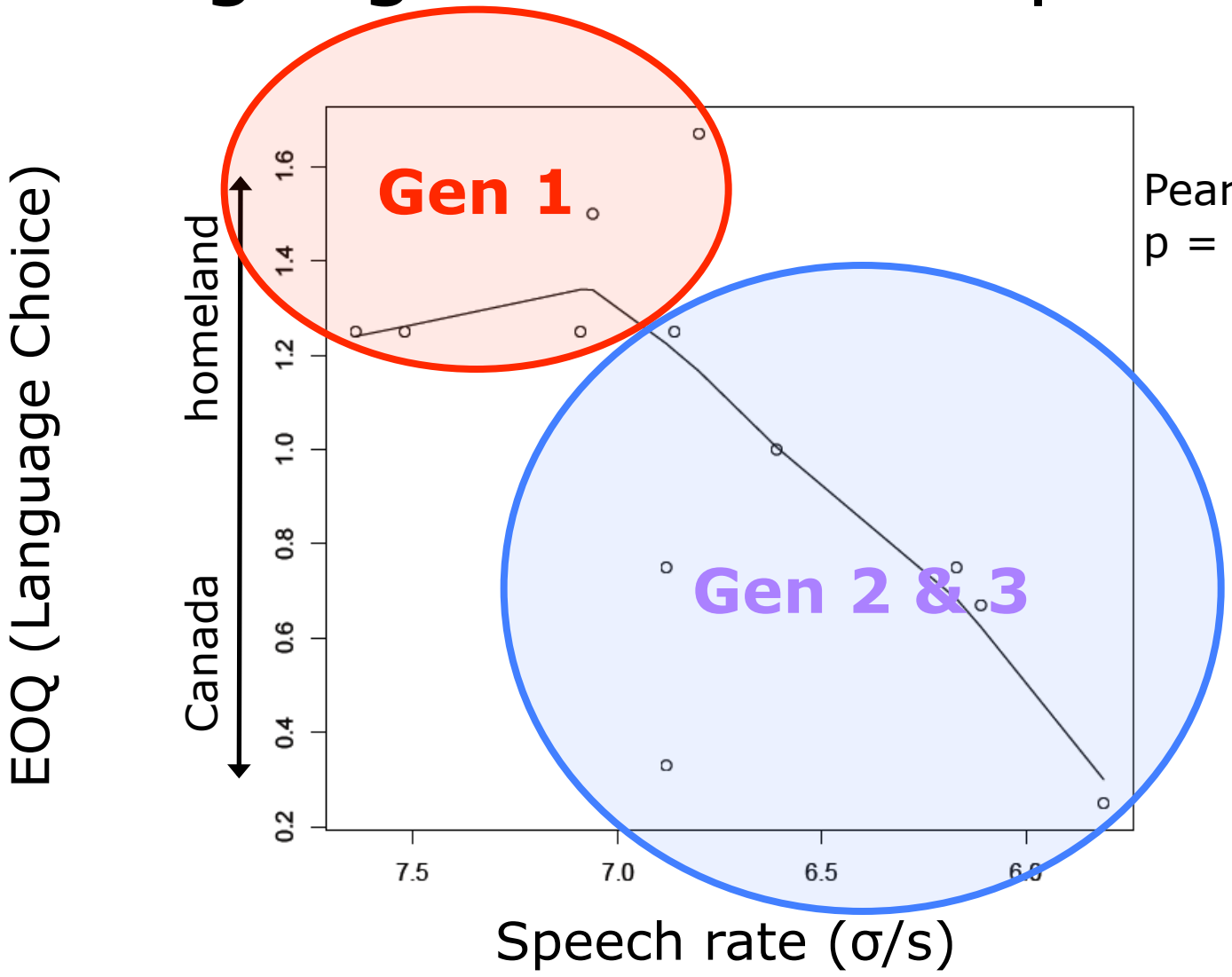
‘to perch’

statebirds.blogspot.com

Language choice and generation



Language choice and speech rate



Pearson's r = 0.62,
p = 0.03

Which to use?

generation

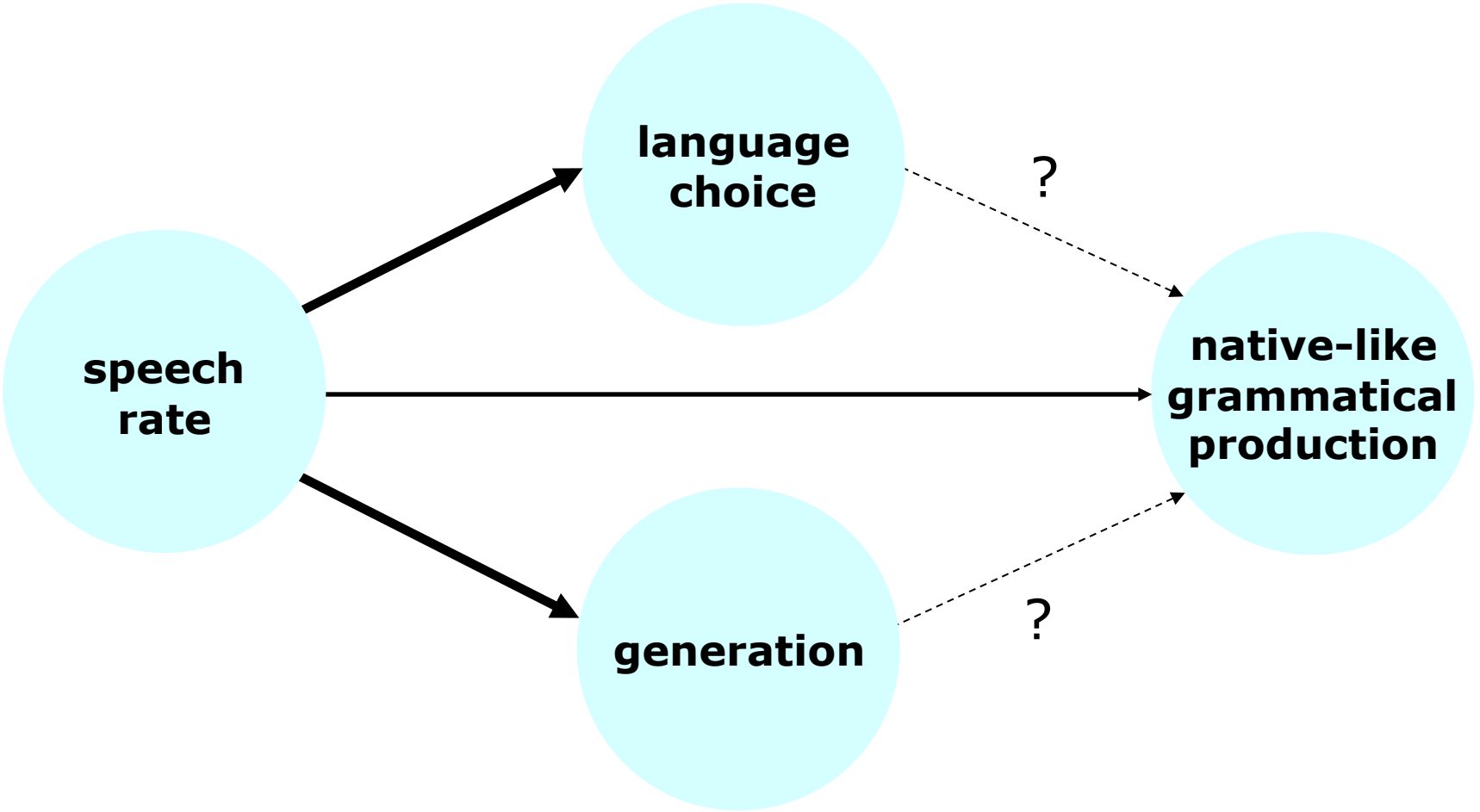
language choice

	Model A	Model B
Significant factors	generation	language choice score
Non-significant factors	language	language
AIC	2800	**1709**

Information more readily available

More sensitive

Future directions



감사합니다 Дякую **Grazie molto** **Спасибо** 谢谢gratsiə namuor:ə

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References

Barik, H. C. (1977). Cross-linguistic study of temporal characteristics of different types of speech materials. *Language and Speech*, *20(2)*, p. 116-126.

Biemans, M. (2000). *Gender variation in voice quality*. Ph.D. dissertation, Katholieke Universiteit Nijmegen.

Hewlett, N., and Rendall, M. (1998). Rural versus urban accent as an influence on the rate of speech. *Journal of the International Phonetic Association*, *28(1-2)*, p. 63-71.

Manuylov, E. (2011). The generational relation between heritage orientation and language proficiency based on speech rate and percentage of English words in Russian in the Greater Toronto Area. Unpublished manuscript, University of Toronto.

Pellegrino, F., Coupé, C., and Marsico, E. (2011). A cross-language perspective on speech information rate. *Language*, *87(3)*, p. 539-558.

Polinsky, M. (2008). Gender under incomplete acquisition: heritage speakers' knowledge of noun categorization. *Heritage Language Journal 6(1)*.

Ramig, L. A. (1983). Effects of physiological aging on speaking and reading rates. *Journal of Communication Disorders*, *16*, p. 211-226.

Roach, P. (1998). Myth: some languages are spoken more quickly than others. In Bauer, L., and Trudgill, P. (eds.), *Language myths*, p. 150-158. London/New York: Penguin.

Thomas, E. R. (2011). *Sociophonetics: an introduction*. London/New York: Palgrave Macmillan.

Verhoeven, J., De Pauw, G., and Kloots, H. (2004). Speech rate in a pluricentric language: a comparison between Dutch in Belgium and the Netherlands. *Language and Speech*, *47(3)*, p. 297-308.

Whiteside, S. P. (1996). Temporal-based acoustic-phonetic patterns in read speech: some evidence for speaker sex differences. *Journal of the International Phonetic Association*, *26(1)*, p. 23-40.

Yuan, J., Cieri, C., and Liberman, M. (2009). Towards an integrated understanding of speaking rate in conversation. Paper presented at the 2006 International Conference on Spoken Language Processing (Interspeech), Pittsburgh, PA, USA.