Reading aloud: Acoustic differences between prose and poetry

Filip Nenadić and Benjamin V. Tucker

UNIVERSITY OF ALBERTA
DEPARTMENT OF LINGUISTICS

APhL
Alberta Phonetics Laboratory

Introduction

During silent reading, **genre influences the way a text will be read** [7], even in the distinction between poetry and prose [3]

Text layout i.e. **verses and stanzas are enough to treat a text as a poem** in a genre decision task [2, 4], or to trigger poetic processing [5]

Two poems were read differently than their reformatted prose forms and a separate novel excerpt: more slowly and with a more stable tempo, with higher intensity, and with a higher and less varying F0 [1]

However, there are **no previous studies that:**
- investigate poetry vs. prose reading aloud in non-experts with a larger sample of texts and readers
- control for important textual characteristics (e.g. words, meter, rhyme), while varying layout
- use novel stimuli, so that poems are not "modified" to prose

Method

Sample
- 37 native speakers of English (11 male)

Stimuli
- 20 original short literary texts
- written by seven different young authors
- acceptable as both poetry and prose
- word count: M = 59.4, SD = 9.13
- formatted in four layouts (Figure 2)
  - justified and left aligned prose
  - verses with one or multiple stanzas (poetry)

Procedure
- participants recorded while reading aloud
- texts appearing on the screen
- participants saw five texts in each of the layouts and each text in only one layout
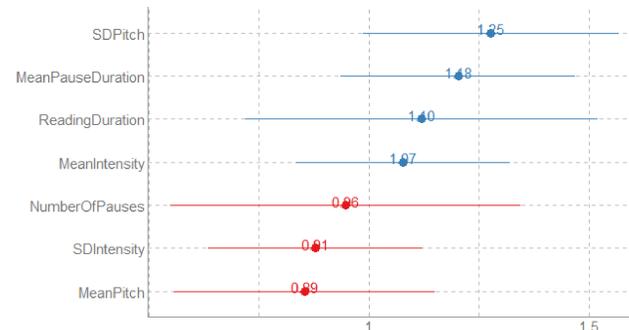- text order was randomized

REFERENCES:
[1] Fant, G. (2006). *Speech Acoustics and Phonetics*. Dordrecht: Kluwer Academic.
[2] Hanauer, D. (1996). Integration of phonetic and graphic features in poetic text categorization judgements. *Poetics, 23*(5), 363-380.
[3] Hanauer, D. (1998). The genre-specific hypothesis of reading: Reading poetry and encyclopedic items. *Poetics, 26*(2), 63-80.
[4] Nenadić, F., Milin, P., & Ramscar, M. Teaching old rats new texts: Why experience inevitably influences cognitive performance and why it matters. *Under review.*
[5] Peskin, J. (2007). The genre of poetry: Secondary school students' conventional expectations and interpretive operations. *English in Education, 41*(3), 20-36.
[6] Yuan, J. & Liberman, M. (2008). Speaker identification on the SCOTUS corpus. *Journal of the Acoustical Society of America, 123*(5), 3878.
[7] Zwaan, R. A. (1994). Effect of genre expectations on text comprehension. *Journal of Experimental Psychology: Learning, Memory, and Cognition, 20*(4), 920-933

Figure 1. Summary of model fixed effects (all variables were scaled prior to analysis): if the distribution crosses value of 1, the effect is not significant

Figure 2. A sample stimulus-text in its four graphical layouts (top two are prose, bottom two are poetry)
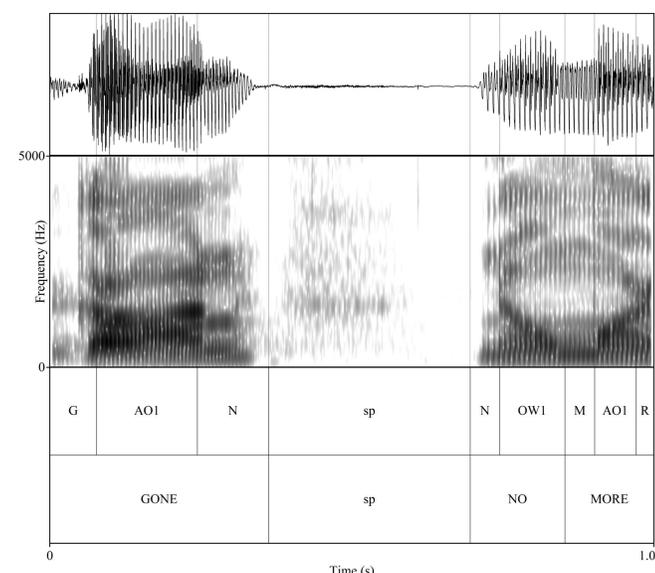

Figure 3. Example of a forced aligned section from the sample text above

Analysis & Results

Recordings were forced aligned (Figure 3) using Penn Forced Aligner [6]

Due to reading errors, **39% of the 720 recordings excluded** from the analysis (see Discussion)

Data were analyzed using **mixed-effects logistic regression**:
- dependent variable was text layout: poetry or prose
- random intercepts per Subject and Text included
- scaled predictors calculated within a single text reading were:
  - total reading duration, number of pauses during text reading, average duration of pause
  - average and standard deviation of pitch and intensity calculated on vowels only

No predictors were statistically significant (see Figure 1 for model fixed effects estimates; red color indicates a higher value for prose, while the blue indicates a higher value for poetry)

Discussion

No differences in reading texts in prose versus poetry layout
- **No support for findings showing genre differences** (loud reading in experts and Fant's study, and silent reading studies)
- **Potential explanation:** differences in reading poetry versus prose are facilitated (enabled) by text layout, but stem from other text characteristics (meter, rhyme), which we excluded in this study
- Perhaps differences become visible when **looking particularly at points of distinction**, i.e. words at the line breaks which are different in the four layouts
- **Analysis of readings in Serbian language is in progress**, and may lend additional support to these findings

Readers make many mistakes
- Even though texts were relatively short, **readers often made at least one mistake during reading**
- **Perhaps reading aloud is more difficult than silent reading:** eye-tracking analyses or comprehension and memory probes could be used to test these differences
- **Manual correction of alignment for errors is in progress**, and the analysis will be repeated on the whole sample of recordings, while the characteristics of readings errors will be investigated as well