

The role of segmental and suprasegmental information in the perception of foreign-accented English by native and non-native speakers

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BACKGROUND

- Research suggests that foreign-accented speech causes a reduction in cognitive fluency, having a negative effect on credibility (Lawless 2014, Hosoda et al. 2007)
- Various studies (Sato 1998, Lev-Ari & Keysar 2010) have found that people with a foreign accent are rated less favorably along with subjective scales than speakers without a foreign accent

e.g.

KIND vs. UNKIND

INTELLIGENT vs. DULL

THE STUDY

Determine the relative contributions of segmental and suprasegmental features to the perception of foreign-accented speech

Segmental = sound of language (vowels and consonants).

Suprasegmental = above the segments like intonation/melody of language.

STIMULI

- 40 sentences from the Central Institute for the Deaf Everyday Sentences (Serenio et al. 2014).

The stimuli were recorded by six speakers:

- 2 Russian Speakers* (1 male and 1 female)
- 2 Italian Speakers* (1 male and 1 female)
- 2 English Native Speakers (1 male and 1 female) – control

*who have lived in the US for less than two years and exhibit strong foreign accents.

STIMULI CONDITIONS

- Naturally produced sentences: No manipulation
- Intonation only: Overall intonation was preserved without any intelligible words or sounds using a low-pass Hann filter (400 Hz cut-off)
- Segment info only: Foreign pronunciation was preserved in terms of consonants and vowels, however, the prosodic aspects e.g., segmental duration, intonation resembled native English (imitation task – validated by pitch track comparisons in Praat)

PARTICIPANTS AND PROCEDURES

- 26 monolingual native English speakers (+ 32 non-natives)
- Four counterbalanced lists of 16 items (total 64) were created
- The sentences in each list were presented in random order via Google Forms.
- The experimental task required a rating of each utterance on a 1-5 Likert scale (1 = hate it, 5 = love it) in terms of:

PLEASANTNESS, HONESTY, SELF-CONFIDENCE, EXPRESSIVENESS (how emotional the voice is perceived to be).

ANALYSIS

Mean scores for each variable were computed (ANOVA) in order to determine the effect of:

Language (English / Italian / Russian)

Condition (natural / intonation / segments)

Gender of the speaker (Female / Male)

RESULTS AND SUMMARY

LANGUAGES

- English preferred in natural condition
- No differences between Italian and Russian in any condition
- Intonation condition least preferred

SPEAKER GENDER

- No significant gender differences across the board.
- Some distance in terms of pleasantness for Italian and Russian (different direction) but inconclusive.

A CLOSER BREAKDOWN

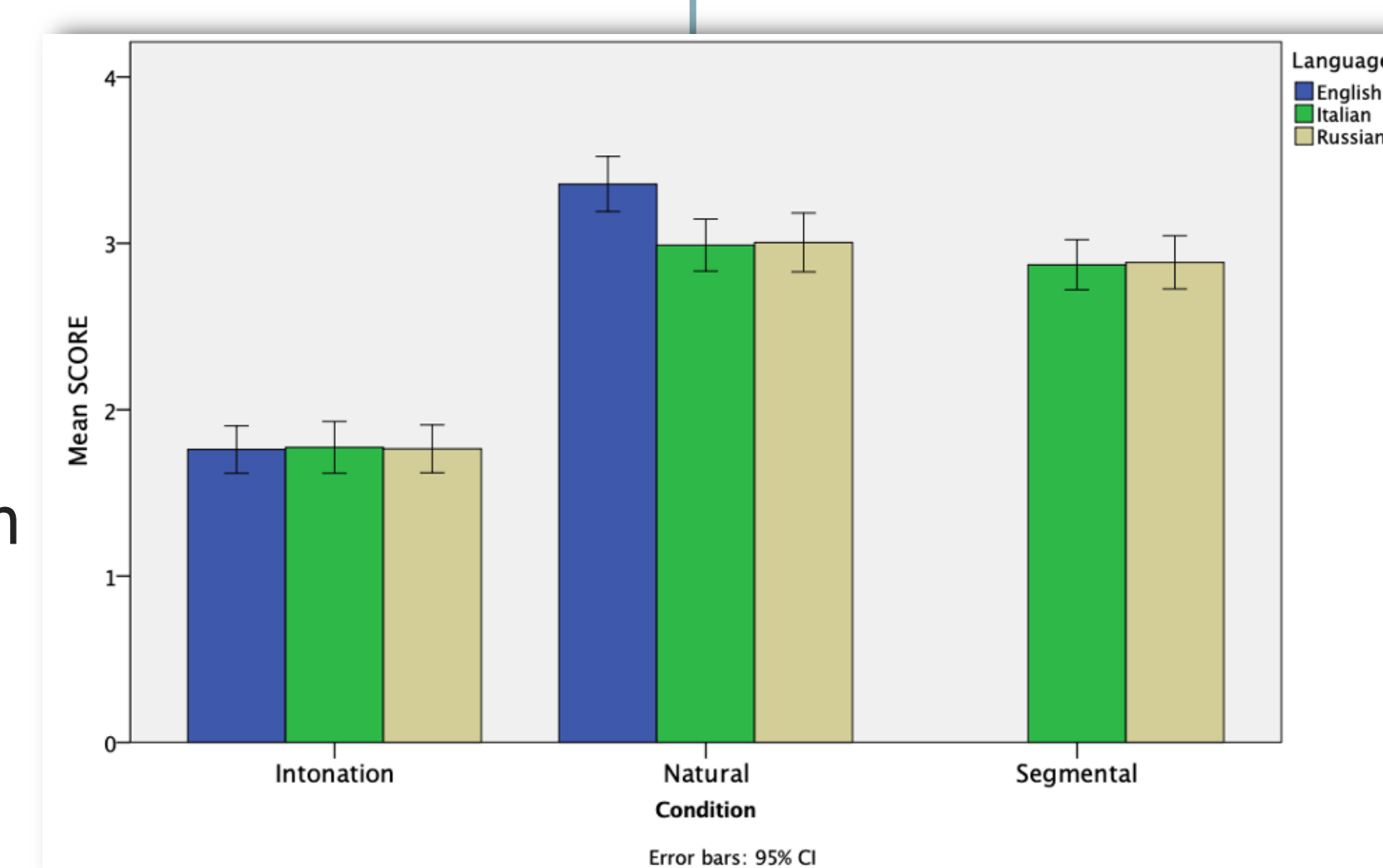
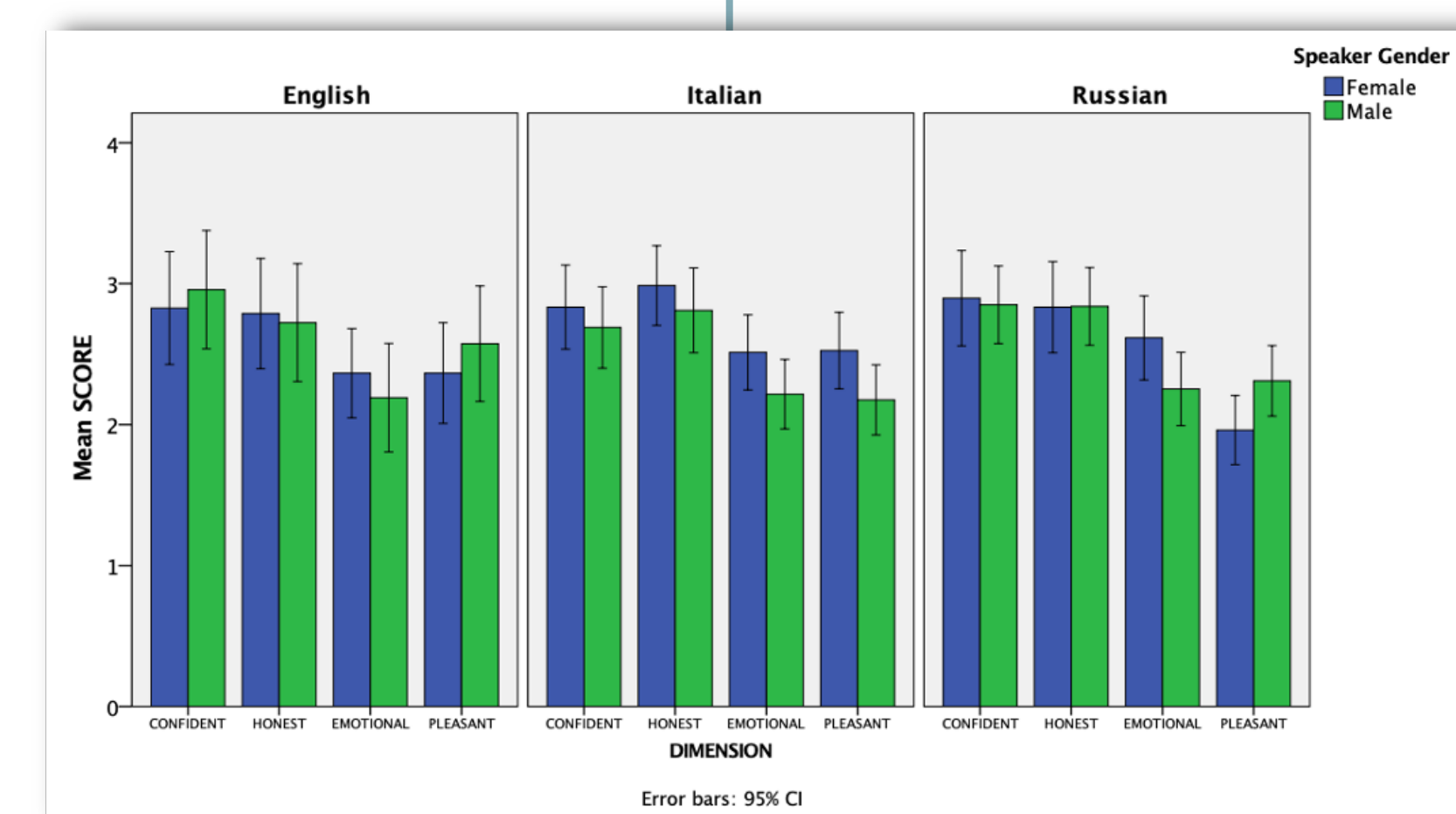
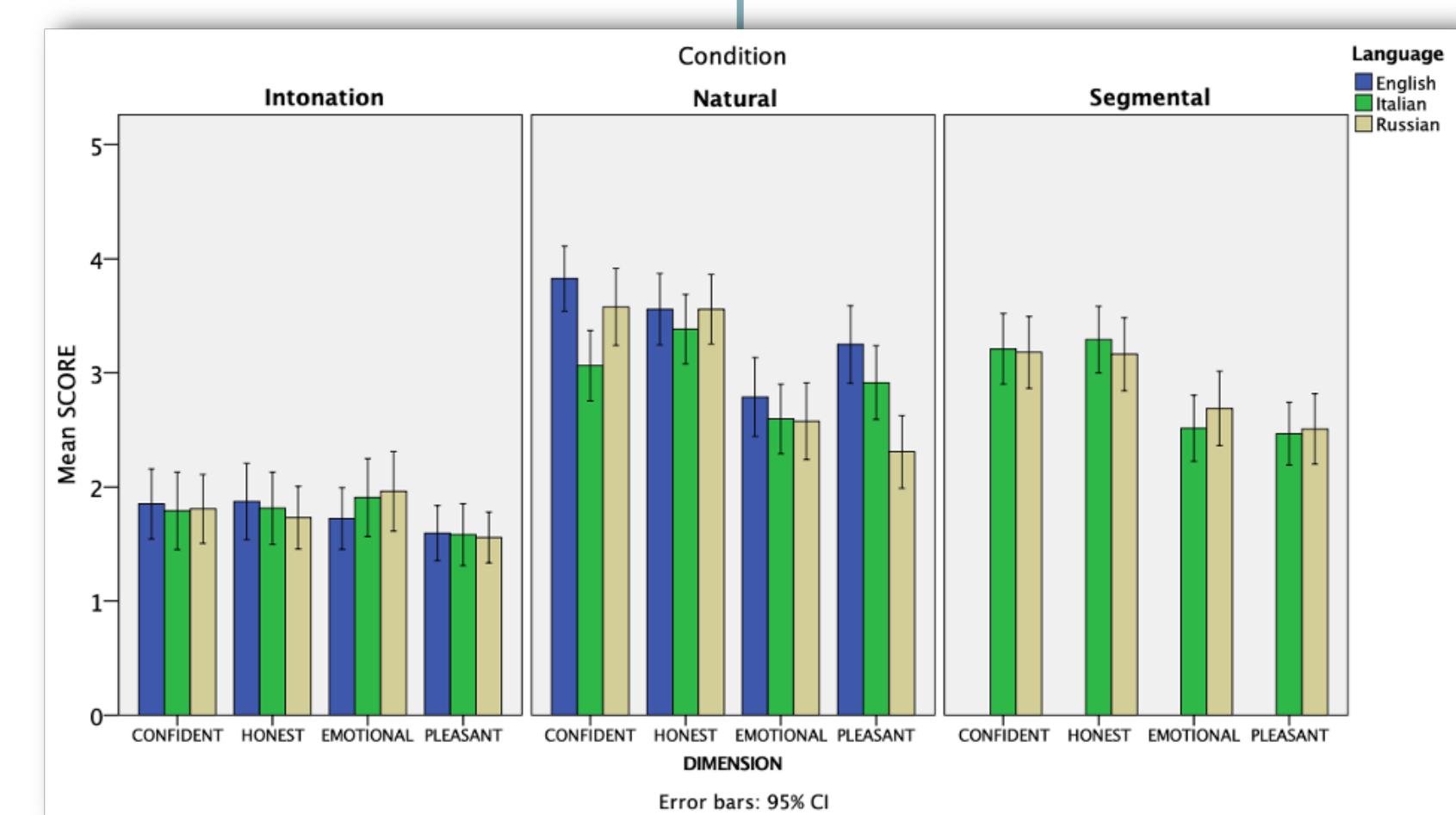
- English significantly higher than Russian in natural condition wrt pleasantness.
- English significantly higher than Italian in natural condition wrt confidence.
- Italian significantly higher than Russian in natural condition wrt pleasantness.
- Slightly lower scores in the segmental condition (foreign segments with native intonation).
- Italian and Russian were both perceived as less emotional and pleasant.

SUMMARY

- English tended to be preferred by native speakers.
- The Italian accent is perceived as more pleasant but less confident than the Russian one.
- Speaker gender did not make any difference.
- Listeners 'hated' the intonation only condition (problems with the stimuli? Cut-off too low?)
- A foreign accent still causes speakers to be perceived as less emotional and less pleasant, even when the intonation is native-like and even in a multicultural environment like NYC.

Future directions:

Investigate comprehension further (how distracting is the foreign-accent?).



References:

- Lev-Ari, S. and Keysar, B. (2010). Why don't we believe non-native speakers? The influence of accent on credibility. *Journal of Experimental Social Psychology*, 46, 1093-1096.
- Serenio, J., Lammers, L., & Jongman, A. (2016). The relative contribution of segments and intonation to the perception of foreign-accented speech. *Applied Psycholinguistics*, 37(2), 303-322.