DOES THE LINGUISTIC IDENTITY OF THE SPEAKER MODULATE SPEECH PREDICTION?

M. Sala[1], F. Vespignani[1], F. Peressotti[1]
[1] Department of Developmental Psychology and Socialisation, University of Padova

INTRODUCTION

For linguistic prediction we mean the pre-activation of linguistic representations based on sentential and contextual information. It is a matter of debate if linguistic prediction involves only (pre-)activation of lexical-semantic representations or also phonological and phonetic ones.

We capitalized on the fact that foreign speakers usually make phonological errors to investigate if speaker identity (native-vs-foreign) is used to tune specific phonological predictions.

METHODS

37 participants (mean age = 23.38, SD = 3.16) read sentence fragments in which the last word was produced by a native or a foreign speaker.

They performed a lexical decision task on the word presented auditorily, which could be predictable or not.

Speaker identity (native-vs-foreign) may or may not be anticipated by the face of the speaker.

FOREIGN ACCENT

The target words were produced using a speech synthesizer. 3 phonemes were systematically manipulated to generate the foreign accent:

/r/ —— /l/

/k/ —— /ɢ/

/p/ —— /ʙ/

The prosody of the speech reflected the native or foreign status of the speaker.
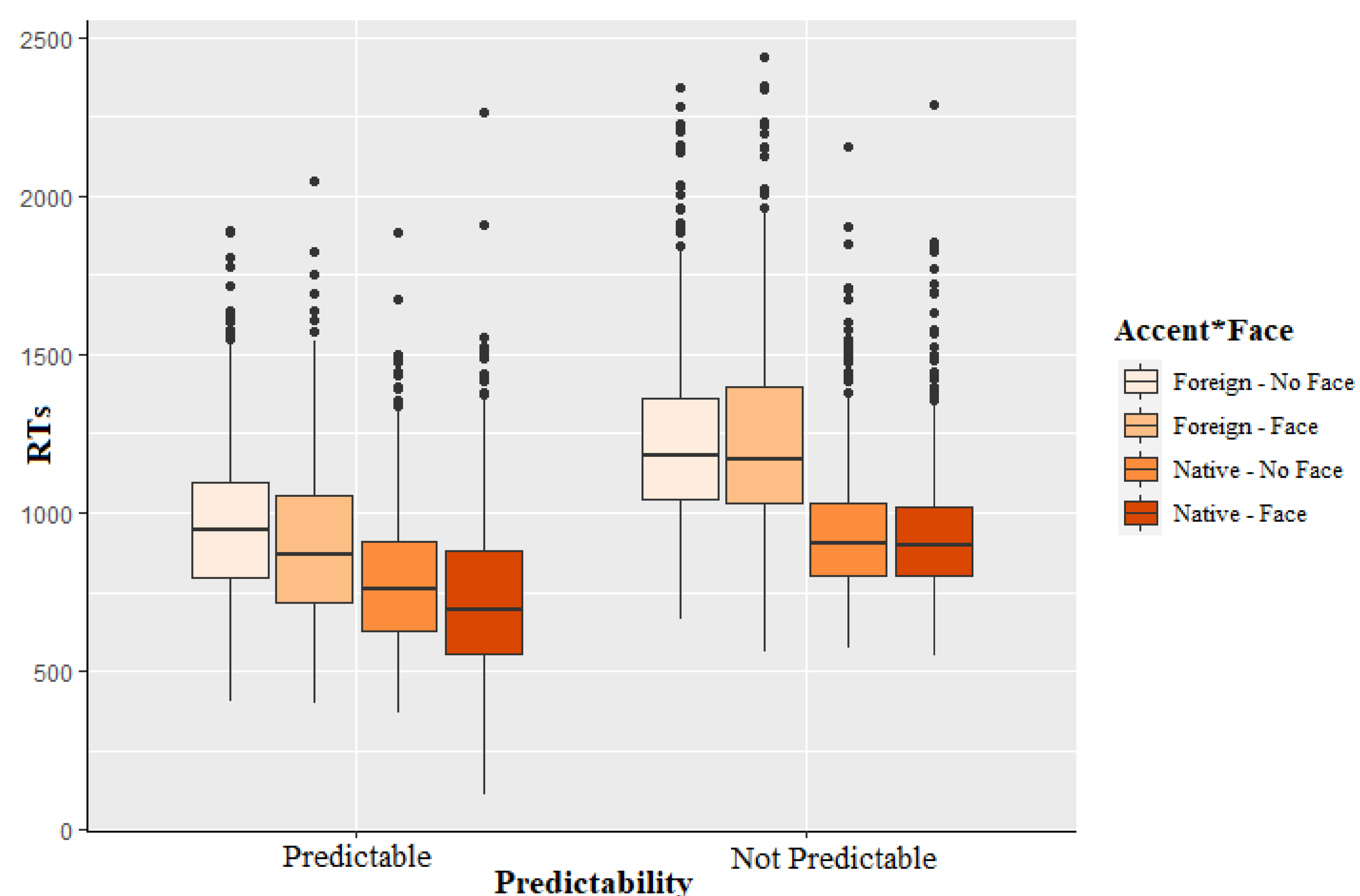
STATISTICAL ANALYSIS

RTs were distributed according to gamma distribution (continuous right skewed data, support: 0, +∞).

Therefore, data were analyzed using a generalized linear mixed model based on gamma distribution.

RESULTS

The interaction between Predictability*Face was statistically significant ($\chi^2 = 28.77$, $p < .001$) (see Fig. 1).

Knowledge of the speaker's identity is associated with shorter RTs when the word is predictable from the context and not when it is not predictable, both for native and foreign accent.

Figure 1. *Cueing speaker's identity facilitates the lexical decision when the word is predictable from the context and not when it is not predictable.*

CONCLUSIONS

Linguistic prediction takes into account phonological variability across groups, therefore we can conclude that it involves not only lexical-semantic processes.

TAKE HOME MESSAGE

We care about speaker identity and linguistic prediction can be instantiated at a phonological level.