

# The role of linguistic identity as a modulator of social attention

Anna Lorenzoni, Giulia Calignano, Mario Dalmaso & Eduardo Navarrete  
Dipartimento di Psicologia dello Sviluppo e della Socializzazione  
University of Padova, Italy

## Introduction

Humans tend to shift attention in response to the averted gaze of a face they are fixating, a phenomenon known as gaze-cueing of attention (1).

Recent findings have shown that **social factors** (e.g., ethnicity, social status) can **modulate gaze-cueing of attention** (2-3). Moreover, other studies suggest the **role of language** as a critical tool for **social categorization** (4-7).

## Aims

In 2 studies, we **aim** to address whether the **gaze cueing** of attention is **modulated by the linguistic identity** associated with the face stimuli. To do this, Italian participants were first familiarized with 8 faces. **Half of the faces** were **associated with Italian** language and **the other half** with two **unknown languages** (Basque for Study 1 and Albanian for Study 2).

## Methods & Material

**Data collection:** Online, through the LabVanced platform.

### Participants:

- 96 Italian native speakers. 48 Italian native speakers (for Study 1: mean age =25.71y, sd=4.75, 24 females; for Study 2: mean age =25.75y, sd=5.01, 24 females) for Study 1 and Study 2, respectively.

### Stimuli:

- 8 full-colour photos of adult males
- 24 auditory sentences: 12 in Italian and 12 in Basque (Study 1) or Albanian (Study 2)

### Procedure:

#### 1) Familiarization

"You are going to see the faces of some speakers and listen some sentences they've said. Please pay attention to what you see and listen"

Il bambino suona il flauto      1200ms      Izarak oso finak dira (Basque: Study 1)      treni është vonë (Albanian: Study 2)

#### 2) Gaze cueing

"Press the K key on the keyboard if a HORIZONTAL line appears and the F key if a VERTICAL line appears"

Valid gaze	+			
Invalid gaze	+			

Fixation cross 900ms      Face frame 900ms      Cue frame 200ms      Target frame Until response

#### 3) Implicit test

"Identify who said this sentence by clicking the corresponding number on the keyboard"

Il bambino suona il flauto

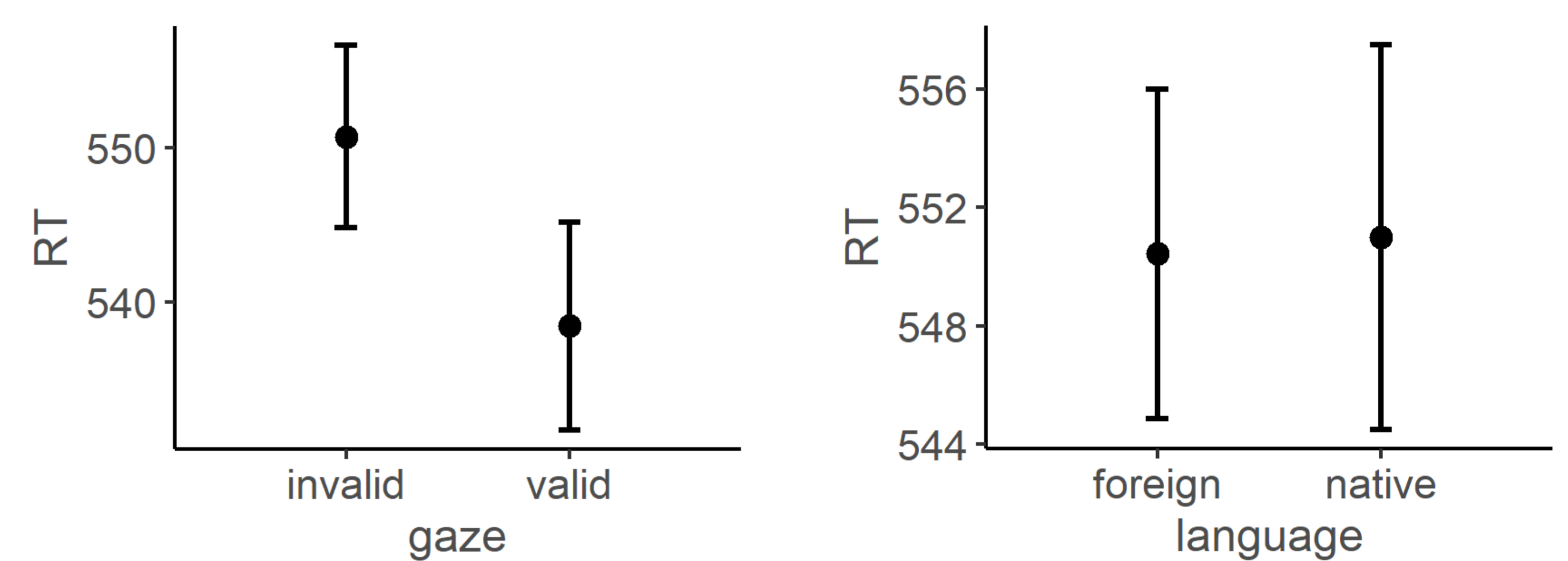
## Analysis

Reaction times (RTs) for the gaze cueing task were analyzed employing generalized linear mixed models (**GzLMs**). We followed a *hierarchical stepwise forward model comparison approach* (8). The model comparison included the simplest model and proceeded by adding predictors.

## Results

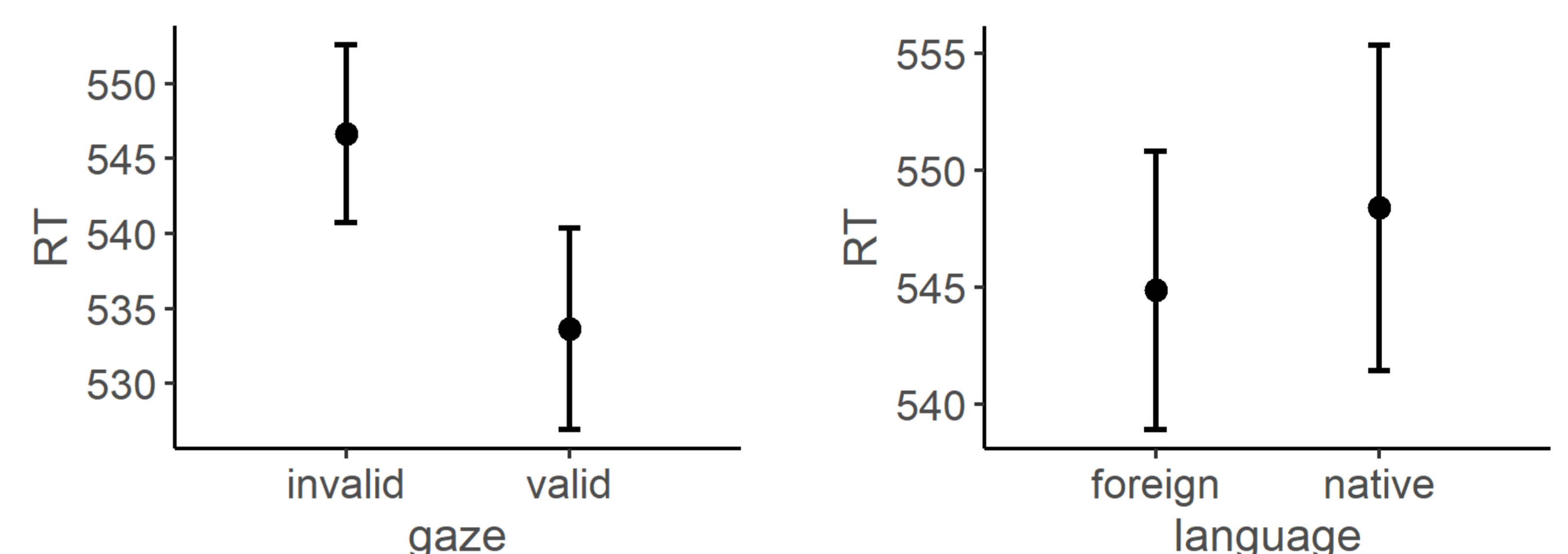
### Study 1 – Italian/Basque

The best model included the significant fixed effect of **GAZE** (estimate = -12.26, SE = 1.56, t = -7.84), predicting **faster RTs on valid** than on invalid trials.



### Study 2 – Italian/Albanian

The best model included the significant fixed effect of **GAZE** (estimate = -12.95, SE = 1.71, t = -7.57) and the significant fixed effect of **LANGUAGE** (estimate = 3.52, SE = 1.76, t = -2.001). This model predict faster RTs on valid than on invalid trials and **faster RTs** when faces were associated to the **foreign language**.



## Discussion

We reported partial **evidence of the role of language as a factor modulating social attention** (Study 2). Critically, our experimental design exploits an **implicit categorization task**, in which participants are trained with 'native' and 'foreign' faces/speakers. Importantly, our results confirm through two **online studies** the phenomenon of **gaze cueing**, showing faster RTs on valid trials.

## Forthcoming Research

To better understand the role of language on gaze-cueing orientation we will use an **explicit paradigm**: participants will training to **identify correctly each face with its associate language**.

This person was:

Italian  
 Albanian

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## Contacts

**AnnaLorenzoni3**  
 **anna.lorenzoni.1@phd.unipd.it**

**Anna Lorenzoni**  
DPSS, Università di Padova  
via Venezia, 8  
35131 Padova - Italy