



Language and Gender Effect in Decoding Emotional Information

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The Rationale



Identifying emotions in human interactions is a complex task:

- multimodal nature of emotional expressions
- cultural (e.g. language) and individual (e.g. gender) factors influence how emotions are expressed and interpreted

Cultural variability in the accuracy of emotion decoding process depends on

- experience and familiarity with faces from other cultures (Elfenbein et al., 2002)
- differences in language (Scherer et al., 2001, Riviello & Esposito, 2012).

Differences in gender:

- women are more expressive of emotion in general, and better at decoding emotion (Brody & Hall, 2008, Schmid et al., 2011].

Goals

- To investigate whether the decoding processing of the emotional states depends on the familiarity of the languages and on both receivers and senders' gender

by comparing the ability of Lithuanian male and female participants in decoding male and female emotional expressions, dynamically presented through American* and Italian** facial and vocal emotional expressions

*American English, a globally spread language (Crystal, 2003, Riviello et al.2011),

**Italian, a country specific language (Esposito et al, 2009)

Two databases of emotional expressions of *happiness*, *sarcasm/irony*, *fear*, *anger*, *surprise*, and *sadness* extracted from American and Italian movies:

- 10 stimuli for each emotion: 5 expressed by an actor and 5 by an actress, for a total of 60 American and 60 Italian video-clips
- the audio and the video alone were extracted from each complete stimulus → 180 Italian and 180 American English emotional stimuli
- for each database: 60 stimuli only audio, 60 only video, and 60 audio and video

Stimuli Specification

- In each video-clip, protagonist's face and the upper part of the body are clearly visible
- The semantic meaning of the utterances produced by actor/actresses is not clearly expressing the portrayed emotional state and its intensity level is moderate
- The emotional labels assigned to the stimuli were first given by two experts and then by three naïve judges independently



Participants



A total of 180, balanced by gender, Lithuanian participants

- principally recruited among university students
- their age ranged from 18 to 35
- all of them used English as second language, whereas they did not have any knowledge of Italian language.

Procedure

To explore the role of language:

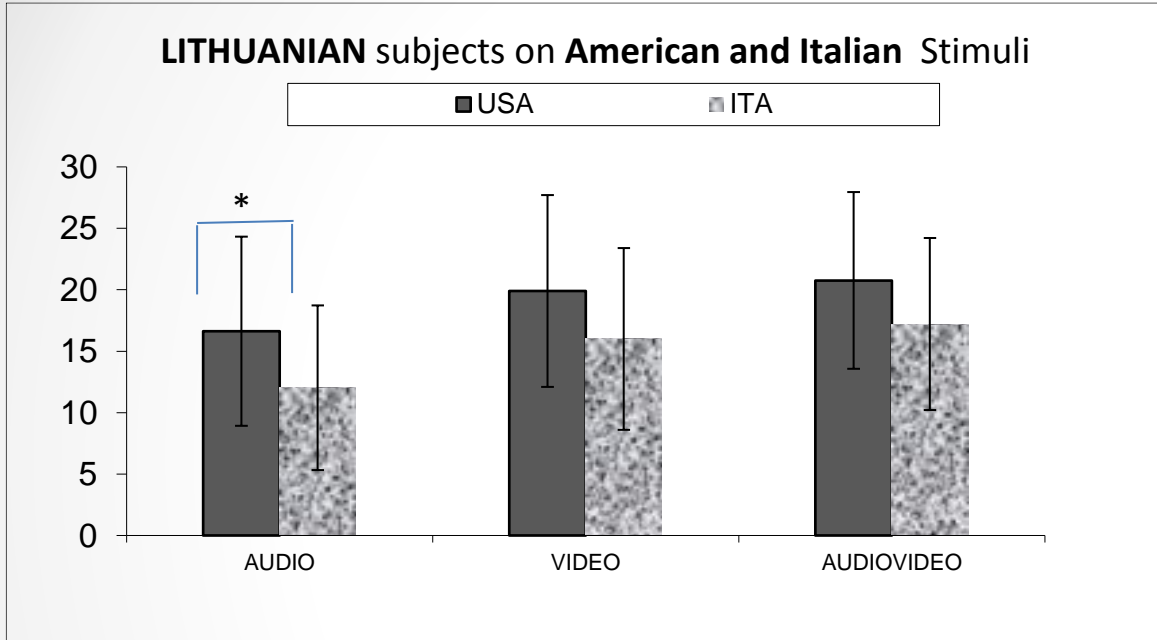
- 180 subjects → 6 groups of 30 (15 males, 15 females)
↓
- 3 comparisons: each 2 groups of 30 subjects respectively tested on American and Italian Audio, American and Italian mute Video and Italian Audio-Video.

To explore gender effect:

- Comparisons*: the two subgroups (male and female subjects) tested on female and male stimuli, separately.
- Comparisons*: male and female stimuli within each subgroup (male or female subjects)

* separately performed for each modality (audio, mute video and audio-video) and for each language (American and Italian)

Results: Language



ANOVA: *Cultural context and the Language of the Stimuli* (American and Italian) as between subjects variable, while *Emotions*, and *Actors' gender* (male and female) as within subjects variables. Significance was established for $\alpha=.05$.

- **American/Italian Audio: $F(1, 8) = 17.75, p = .003^*$**
- American/Italian MUTE VIDEO: $F(1, 8) = 1.95, p = .2$
- American and Italian AUDIO-VIDEO: $F(1, 8) = 1.504, p = .255$

Results: Subjects' Gender

		F/M subjects	
ITALIAN STIMULI		AMERICAN STIMULI	
Male Audio F (1,8)=20.4, p=.013*	Female Audio F (1,8)=1.380, p= .272	Male Audio F (1,8)=.563, p=.475	Female Audio F (1,8)=1.776, p=.219
Male Subj M= 4,933 SD:2,7			
Female Subj M= 6,1 SD:2,7*			
Male Mute Video F (1,8)=.001, p=.975	Female Mute Video F (1,8)= .019, p=.895	Male Mute Video F (1,8)= .144, p=.714	Female Mute Video F (1,8)=.009, p=.926
Male Audio-Video F (1,8)=.126, p=.732	Female Audio-Video F (1,8)=.469, p=.513	Male Audio-Video F (1,8)=1.140, p=.317	Female Audio-Video F (1,8)= .013, p=.913

- The ANOVAS considered *Subjects' gender* (male and female) as a between subjects variable, and *Emotions* (happiness, fear, anger, irony, surprise and sadness) as a within subjects variable. Significance was established for $\alpha=.05$.

Results: Actors' Gender

ITALIAN STIMULI	
Male subjects	Female subjects
Male/Female Audio F (1,8)=19.7, p=.002*	Male/Female Audio F (1,8)= 7.8, p= .024*
Male audio stimuli: M= 4.93, SD= 2.74/ Female audio stimuli: M= 6.7, SD=3.76*	Male audio stimuli: M=6.1, SD= 2.73 Female audio stimuli: M= 7.2, SD= 3.9*
Male/Female Video F (1,8)=1.34, p=.724	Male/Female Video F (1,8)= .048, p=.832
Male/Female Audio-Video F (1,8)= .021, p=.888	Male/Female Audio-Video F (1,8)=.412, p=.539

AMERICAN STIMULI	
Male subjects	Female subjects
Male/Female Audio F (1,8)= .815, p=.393	Male/Female Audio F (1,8)= .369, p=.560
Male/Female Video F (1,8)= .358, p=.566	Male/Female Video F (1,8)=.452, p=.520
Male/Female Audio-Video F (1,8)= 5.45, p=.58	Male/Female Audio-Video F (1,8)= .423, p=.534

ANOVAS considered *Actor' gender* (male and female) as a between subjects variable and *Emotions* as a within subjects variable, with a significance established for $\alpha=.05$.

Conclusions

- The decoding process of the emotional states is influenced by the familiarity between the sender's and the receiver's language
- The processing of visual information allows similar decoding accuracy for both American and Italian data
- Familiarity with the language also plays a role in the assessment of gender differences in decoding emotions
 - the influence of gender in decoding emotions is subtle , but may emerge when difficulties occurs in processing emotions.



Thanks!