Asymmetries in cross-linguistic emotion recognition

Jiyoun Choi1, Mirjam Broersma1, Martijn Goudbeek2
1Max Planck Institute for Psycholinguistics, Nijmegen, Netherlands
2University of Tilburg, Netherlands

Theories on emotion recognition in speech do not predict any asymmetries in the cross-linguistic recognition of emotion. This study investigates the occurrence of such asymmetries.

Previous research

- **Universality**: especially “basic emotions” are universally recognized to some extent (Ekman et al., 1969).
- **Language-specificity**: emotions are better recognized in listeners’ native language (L1) than in other languages (Ellenbee and Ambady, 2002; Pell et al., 2009).
- **Language distance**: language-typological similarity facilitates cross-linguistic emotion recognition (Scherer et al., 2001).
- No current theories predict cross-linguistic perceptual asymmetries.
- Problem previous methodologies: lopsided (“many-to-1” / “1-to-many”) design.

This study

Questions

**Replication:**
1. Are listeners always better at emotion recognition in L1 > unknown language?
2. Does small language distance always improve emotion recognition?

**New question:** Are there asymmetries in cross-linguistic emotion recognition?
3a. Some emotions recognized better by one listener group than another?
3b. Some emotions expressed more effectively in one language than in another?

Experiment 1

(1) **Corpus recording**

**Speakers**
- 8 Dutch (M: 4; F: 4) & 8 Korean (M: 4; F: 4) professional actors

**Materials**
- A meaningless fixed phrase: [nuto hom spikkan]
  - all phonemes legal in Dutch, Korean, and English
  - all phonotactic combinations legal in Dutch, Korean, and English
  - no clearly embedded words in Dutch, Korean, and English

**Procedure**
- Recording 8 emotions using [nuto hom spikkan]¹

(2) **Judgment study**

**Participants**
- 24 Dutch (M: 11; F: 13) & 24 Korean listeners (M: 12; F: 12)

**Materials**
- 256 Dutch & 256 Korean utterances
  (each language: 8 emotions * 8 actors * 4 repetitions)

**Procedure**
- Dutch listeners: 256 Dutch stimuli; Korean listeners: 256 Korean stimuli
- Classify stimuli as one of 8 emotions or neutral
- Rate naturalness of the emotion (1: very unnatural – 4: very natural)

(3) **Corpus selection**
- 2 utterances of each actor-emotion pair were selected
  - with the highest standardized hit rate
  - in a tie: with the higher naturalness rating

Results

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<tr>
<th>Emotions</th>
<th>Positive</th>
<th>Negative</th>
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<th>High</th>
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<td>Joy</td>
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<td>Pride</td>
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<td>Sadness</td>
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<td>Imitation</td>
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1. For some emotions but not for all, recognition L1 > unknown language (e.g., Tenderness & Imitation).
2. For some emotions but not for all, clear effects of language distance (e.g., Joy & Pride: for American listeners, recognition Dutch > Korean).
3a. Some emotions recognized more effectively by one group than the others (e.g., Sadness for Korean listeners).
3b. Some emotions expressed more effectively in one language than in the other (e.g., Anger & Sadness in Dutch, and Fear in Korean).

Conclusion

Models of emotion recognition should be extended to include differential efficiency in expressing and decoding specific emotions in different languages.

References


Jiyoun.Choi@mpi.nl