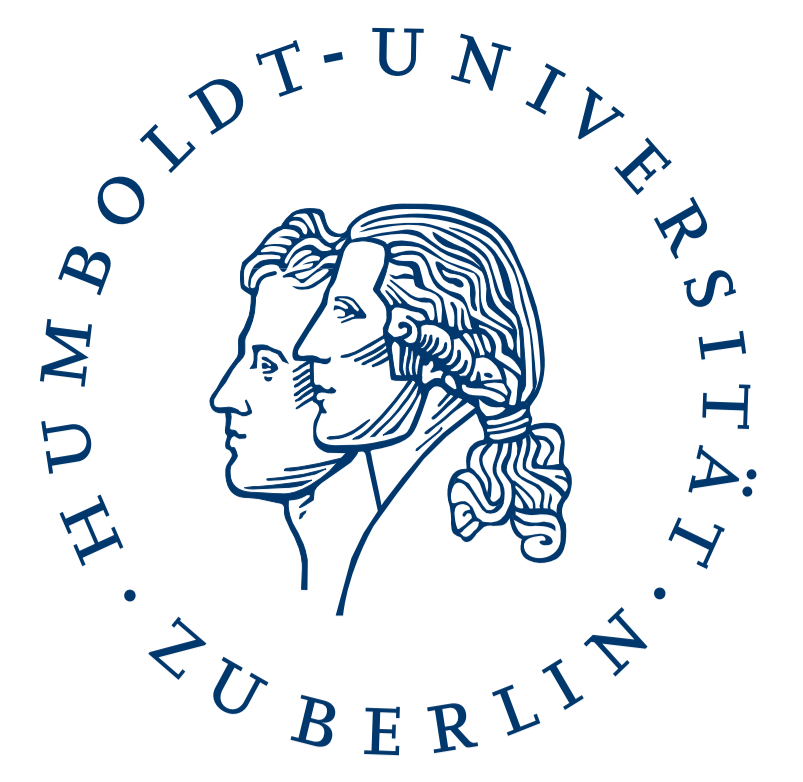


# Emotional Appeals Are Associated With Specific Mental Images



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## Abstract

Emotional facial expressions have a communicative function. Besides information about the internal states (emotions) and the intentions of the expresser (action tendencies), they also communicate what the expresser wants the observer to do (appeals). Yet, there is very little research on the association of appeals with specific emotions. The present study has the aim to study the mental association of appeals and expressions through reverse correlation.

Using reverse correlation, we estimated the observer-specific internal representations of expressions associated with four different appeals. A second group of 148 participants rated the resulting expressions.

We predicted and found that the appeal to celebrate was uniquely associated with a happy expression and the appeal to empathize with a sad expression. A pleading appeal to stop was more strongly associated with sadness than with anger, whereas a command to stop what one is doing was more strongly associated with anger.

The results show that observers internally represent appeals as specific emotional expressions.

## Introduction

The present study had the goal to assess the mental associations between emotional appeals and emotional expressions.

**Appeals.** Amongst other functions, emotional expressions also convey what the expresser wants the perceiver to do (Fridlund, 1994; Scarantino, 2019). We focused on three appeals: the appeal to celebrate/affiliate, the appeal to empathize and the appeal to stop what one is doing both as a plea and as a command.

**Reverse Correlation** is a procedure that allows to identify the visual features of the internal mental representations that drive social judgements. Participants are presented with a neutral face to which random noise is added and asked to classify the face+noise combinations in terms of similarity with the judgment of interest. Figure 1 presents an example for a pair of stimuli used in our experiment. This task is repeated several hundred times and then the faces associated with the judgment are averaged. Random noise that is not associated with the judgments cancels out. Noise that happens to be associated with the judgment is selected across many faces and correspondingly changes the original image systematically. What is obtained through this process is a so-called classification image, which shows the facial features that drive the social judgement of interest.

## Method

### Participants

Reverse correlation task: 21 men and 46 women ( $M_{age} = 24.8$ ,  $SD = 5.5$ )

Rating task: 86 men, 61 women, 1 other, ( $M_{age} = 38.9$ ,  $SD = 11.9$ )

Example stimuli for the reverse correlation task participants were asked which of the two faces conveys a certain appeal more than the other

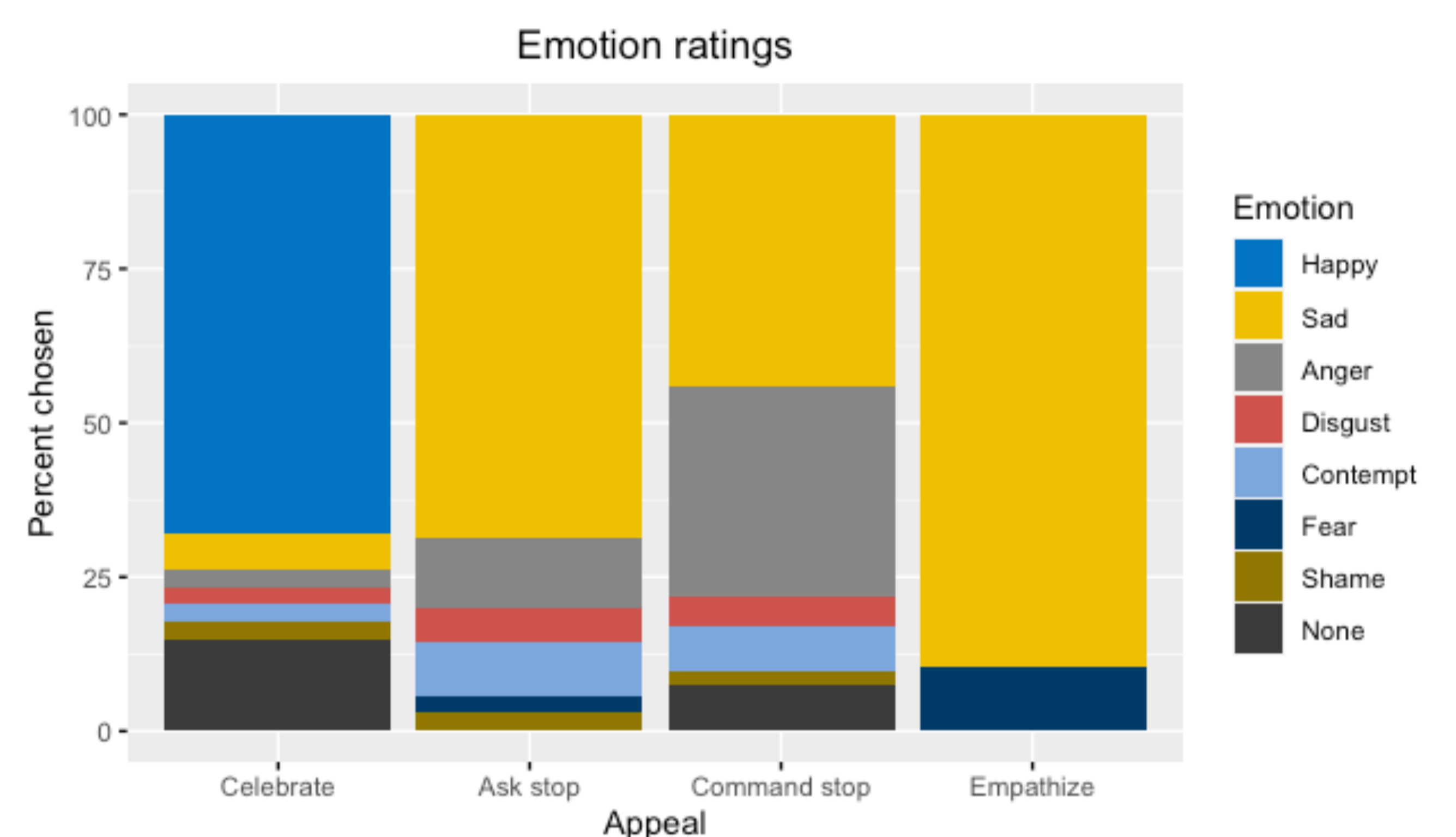
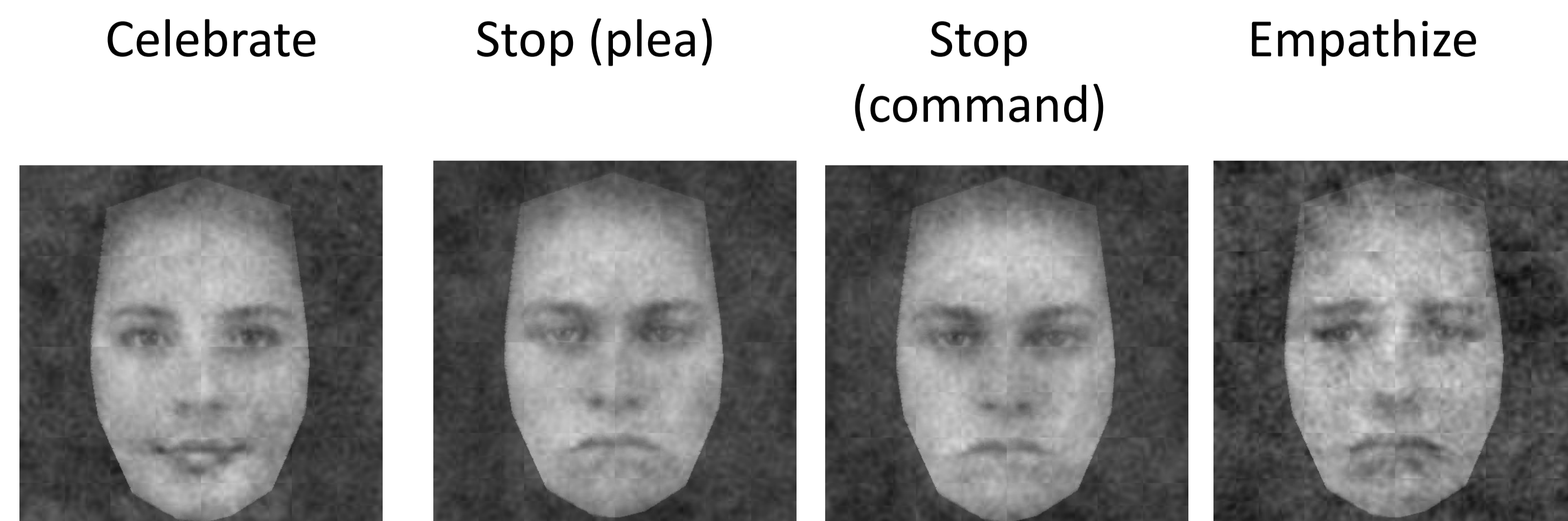


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## Results

The averaged faces for the appeals (see below) were rated by 148 participants



As predicted, the appeal to celebrate was uniquely associated with a happy expression and the appeal to empathize with a sad expression. A pleading appeal to stop was more strongly associated with sadness than with anger, whereas a command to stop was more strongly associated with anger.

## Conclusion

The results show that specific mental representations of emotional expressions are spontaneously associated with appeals. This suggests that it is not the case that “a range of emotions can co-occur with any social motive” (Fridlund 1994, p. 139). Rather certain appeals like the appeal to celebrate and the appeal to empathize are predominantly associated with one specific emotional expression. And even when the same appeal can be conveyed by multiple emotional expressions - as is the case for the two appeals to stop, it cannot be conveyed by just any emotional expression – there are systematic and predictable correlations between emotional expressions and appeals, in line with the Theory of Affective Pragmatics (Scarantino, 2019).

## References

- Scarantino, A. (2019). Affective Pragmatics Extended: From Natural to Overt Expressions of Emotions. In *The Social Nature of Emotion Expression* (pp. 49-81). Springer.
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