

# Individual Affective Space (Individueller affektiver Raum)

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## Background

- Emotion perception is highly idiosyncratic
- Emotion perception may be best depicted as multidimensional representation of individual affective spaces (IAS)<sup>1</sup>
- How to assess IAS
  - Inverse multidimensional scaling (iMDS) with arrangement task<sup>2</sup>
  - Pairwise comparisons (PC)
  - Multiple fixed rating scales, e.g. Self-Assessment Manikin (SAM)<sup>3</sup>

## Aim of the study

Identifying the best out of three methods to assess an IAS

## Protocol

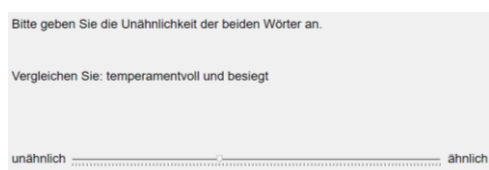
- Four sampling points over one week
- T1: Preliminary survey
- T2: iMDS + PC
- T3: iMDS + PC + Scale ratings
- T4: Scale ratings

## Methods

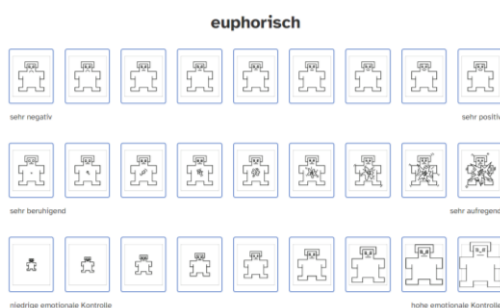
### • Inverse multidimensional scaling (iMDS)<sup>2</sup>:



### • Pairwise comparisons (PC):



### • Scale ratings: Self-Assessment Manikin (SAM)<sup>3</sup>

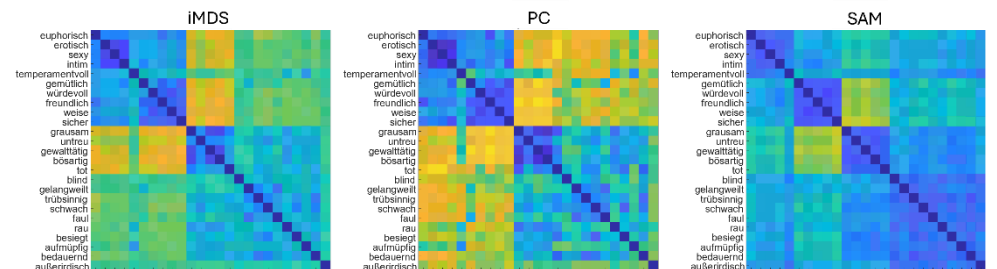


## Sample

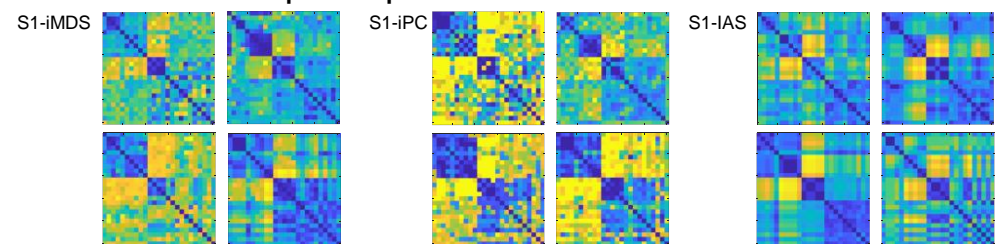
n = 102  
 age 22.89 (SD = 2.68)  
 gender female: n = 52  
 male: n = 50

## Results

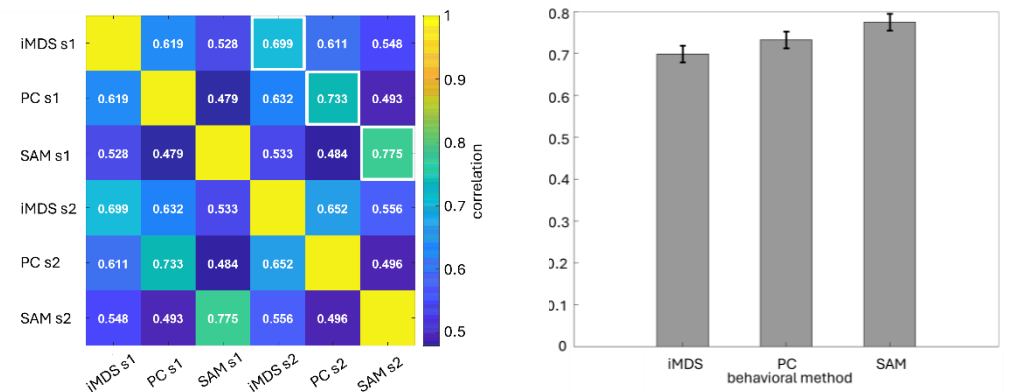
### I. Different methods yield IASs with certain consistency over all participants



→ Nevertheless, substantially different IASs between and within participants

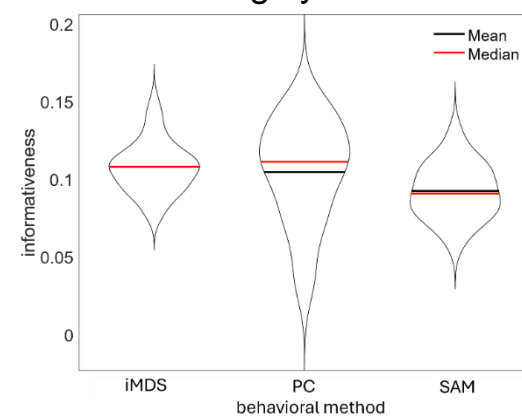


### II. SAM sig. outperforms iMDS and PC in terms of test-retest-reliability (SAM > PC > iMDS)



### III. Tendency for higher informativeness in iMDS and PC compared to SAM (iMDS ≥ PC > SAM)

→ PC highly variable



## Summary & Outlook

- Higher test-retest-reliability in SAM than in iMDS and PC
- Tendency for higher informativeness in iMDS and PC than in SAM
- Outlook:
  1. Analyzing on an individual level (dimensionality, associations with gender / personality traits...)
  2. Examining predictive value of IAS for acute stress reactions and stress in everyday life
  3. Examining the influence of depression on IAS

## Literature

1. Ansteeg, L., Leoné, F., & Dijkstra, T. (2022). Characterizing the semantic and form-based similarity spaces of the mental lexicon by means of the multi-arrangement method. *Frontiers in Psychology*, 13, 945094.  
 2. Kriegeskorte, N., & Mur, M. (2012). Inverse MDS: Inferring dissimilarity structure from multiple item arrangements. *Frontiers in Psychology*, 3.  
 3. Bradley, M. M., & Lang, P. J. (1994). Measuring emotion: The self-assessment manikin and the semantic differential. *Journal of Behavior Therapy and Experimental Psychiatry*, 25(1), 49–59.