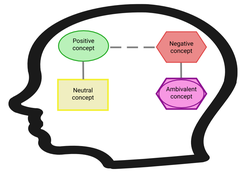
# Cognitive Affective Maps to Motivate Attitude Change

# An Experimental Study Design




livMatS

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## Background

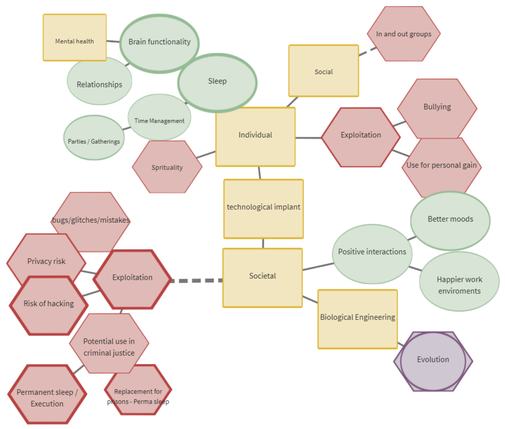
Recently, data collection and analyses tools for Cognitive-Affective Maps (CAMs) as a quantitative and qualitative research tool have been developed to identify, visually represent and analyze existing belief structures. In comparison to associative methods or semantic networks CAMs also include affective evaluations. It is assumed that concepts are changed or added if they correspond to the „most coherent account of what we want to understand“ (see Thagard 2006).

**Elements of a CAM**:

- Participants can freely add concepts (also called nodes), which are linked by connections (also called edges)
- Concepts incorporate so-called affective valences by representing whether a person associates positive (green), negative (red), neutral (yellow) or ambivalent (purple) emotions with a drawn concept
  - It is possible to specify the connections in different strengths and forms

## Example

**Figure 1** Ideas, thoughts and assessment regarding a fictional technological implant

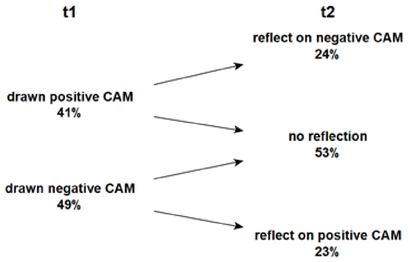



## Methods

**Study Design**:

- mixed design (2 time-points x 3 conditions); N = 75 (f = 26, m = 46, d = 1; age: M = 32.69, SD = 12.14)
- participants who drew a CAM with positive connotations at the first time-point elaborated a negative CAM and vice versa (neutral CAMs were randomly allocated)

**Figure 2** Allocation to experimental condition




## Results

- elaborating on a CAM with opposing valence lead to a significant change in the affective evaluation of the own CAM
  - affective evaluations were stronger for participants who elaborated a negative CAM (-0.76) compared to participants who elaborated a positive CAM (.52); applying multivariate multilevel models participants have drawn more concepts when reflecting on a opposing CAM

**Figure 3** Mean valence of CAMs

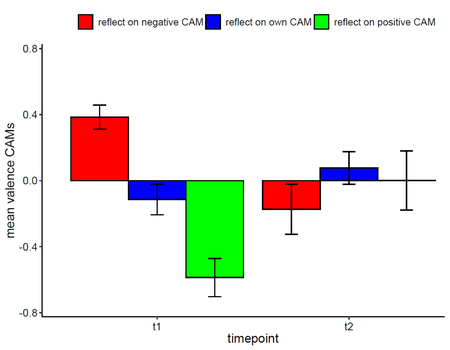
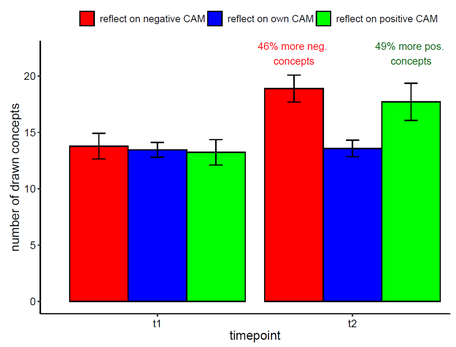



**Figure 4** Number of drawn concepts




- results are supported by relative high re-test stability: Pearson's product-moment correlations between the mean valence and number of drawn concepts within the control group are very large ($r(38) = 0.63$, 95% CI [0.40, 0.79]; respective $r(38) = 0.68$, 95% CI [0.47, 0.82])

## Conclusion

- elaboration of a CAM of opposite affective connotation could motivate attitude change (Gros et al., 2021)
  - which is supported by a high re-test stability of CAMs

**Possible Application-Case – adapted of the Mediation Phase Model**:

- pre-mediation phase involves one-on-one talks, conflict analysis, and implementation planning
- search for a solution involves creative brainstorming, allowing all ideas, followed by filtering out inappropriate or unfeasible solutions through discussion
- agreement, involves a thorough examination of the chosen solution before a binding agreement is signed when all parties are satisfied (see Proksch, 2018)

## References

Gros, W., Reuter, L., Stumpf, M., & Kiesel, A. (2021). CAMediaid: Multimethod approach to assess Cognitive-Affective Maps in mediation - A quantitative validation study. https://doi.org/10.13140/RG.2.2.12436.78726

Proksch, S. (2018). Mediation: Die Kunst der professionellen Konfliktlösung. Springer Fachmedien. https://doi.org/10.1007/978-3-658-22980-1

Thagard, P. (2006). Hot Thought: Mechanisms and Applications of Emotional Cognition. MIT Press.

## Further information

central webpage:

https://drawyourminds.de/

online-documentation:

https://osf.io/q5hj4

## Acknowledgements

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