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Back to the Roots: Measuring Motoric Correlates of Ur-Emotions

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Emotions have been a key research topic of psychology ever since; yet, what emotions really 'are', and what the underlying structure—across people and cultures—really 'is', remains a matter of debate. Kafka (1950) has postulated four so called "Ur-Affekte" (ur-emotions), referencing Karl Bühler, and sees basic motoric responses of an organism at the heart of these emotions. Following Kafka, one can try to bring oneself nearer towards or further away from an object; or can try to bring this object nearer or further away. This concept has been taken up, e.g. by Parrott (2010), searching for "underlying structure[s] or abstract feature[s] of an actual emotion" (p. 20).

At the same time, current approaches to measure emotions all have their drawbacks. From verbal reports to EDA, EEG and fMRI—there's no method that is able to measure emotions with high temporal resolution 'in' the situation while providing a clear relation of data and emotion at the same time. To overcome these drawbacks, we propose posturography which we employed with low cost commercial hard- and software. The utilized setting (a Nintendo Balance Board) shows high temporal resolution (100Hz) and is capable of reliably tracking a person's balance control. A pilot study (n=5) showed high and distinct postural responses to visual emotional stimuli. In a further study (n=21) we presented 23 distinct high-quality images (selected in a pre-study, rated for emotional intensity and value) in randomized order, each preceded and followed by an isoluminant mask, while the subject was standing on the balance board.

With these data, we can relate the motoric responses—intensity and direction, as a pattern over each picture's presentation time—to the emotional content. This combination allows new insights into the basic states of action readiness that go along with the perception as well as with the cognitive and emotional appraisal of visual stimuli.

Once this relation is established and refined in further research, the 'emotional footprint' can serve as cost-effective measurement device in aesthetic research; and at the same time stimulate the research about

emotions, about the basic motoric roots of cognitive and affective processes.

References

Kafka, G. (1950). Über Uraffekte. Acta Psychologica, 7, 257–278.

Parrott, W.G. (2010). Ur-Emotions and Your Emotions: Reconceptualizing Basic Emotion. Emotion review, 2(1), 14–21.

The Role of Causal Models in Causal-based Categorization

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Research about how people categorize exemplars with causally linked features has found two competing effects. The causal-status hypothesis proposes that people consider causally more central features (e.g., a cause in a common-cause model) more than causally less central features (e.g., the effects in a common-cause model). In contrast, the coherence hypothesis claims that people often focus upon feature patterns that are more or less coherent with respect to the causal relations between the features (i.e., a cause and its effect are both present or both absent). According to coherence, individual feature values are not important for people when categorizing exemplars with causally linked features. We conducted experiments to analyze the conditions that influence the strength of the causal-status and the coherence effect. Following up on the proposal that categorization can be seen as inference to the best explanation (e.g., Murphy & Medin, 1985), we propose that causal models might serve different explanatory roles. First, a causal model can serve as an explanation why the prototype of a category is as it is. Second, a causal model can also serve as an explanation why an exemplar might deviate from the prototype. Depending on role, we expected a stronger causal-status or a stronger coherence effect, respectively.

In the experiment, our participants learned non-real world categories as used by Rehder (2003) and others, including the causal links between category features (i.e., the category's causal model). They, then, had to give a category membership rating for 16 exemplars that were presented