Individual Differences in Value-Driven Attentional Capture:

VDAC magnitude is not a reliable trait measure.

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Value-Driven Attentional Capture

Numerous studies have employed variants of a paradigm used to measure value-driven attention capture (VDAC)¹, the slowing of responses in the presence of a task-irrelevant, but previously reward-associated stimulus (e.g., color).

Training: Search for green or red circle

Test: Search for unique shape (color irrelevant)

Individual Differences

Small group-level effects are consistently replicated, but there are large individual differences in VDAC. Many participants show no, or even negative, VDAC²,³. Anderson et al., 2016

Participants who report color-value mappings show greater capture.

Post-study Reports of Color-Value Associations

Reward VDAC by Group

Correct Reports by Training Duration

Conclusions

• The standard VDAC paradigm does not produce consistent or correlated individual differences in VDAC magnitude across or within sessions, for either reinforcement context. This raises concerns regarding its reliability as a performance measure.

• This paradigm might be most sensitive to state-dependent, rather than trait-dependent, influences on performance (e.g., vigilance), although this requires further investigation.

• One factor likely underlying individual differences in reward VDAC effects is the degree to which the stimulus-value associations are learned during training. Future studies should provide increased training (conditioning) and include assessments of learning independent of the VDAC RT-difference measure.