



Einladung
zum Forschungskolloquium Experimentelle Psychologie
am Mittwoch den 24.04.2024
um 14:15 Uhr, Waldweg-Altbau, Raum 0.705



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Contingent Suppression of Visual Attention: Novel Evidence for Proactive Top-Down Control Through Negative Search Criteria

Goal-directed behavior depends on the ability to selectively process relevant targets among irrelevant distractors. This ability is referred to as visual attention and comprises different bottom-up (stimulus-driven) and top-down (goal-directed) control mechanisms that enable selective processing and perception. While numerous studies have investigated how visual attention facilitates target processing, it is unclear whether target selection can also benefit from the top-down suppression of distractors. In this talk, I will present recent findings from three studies employing a novel experimental design to investigate suppression as proactive top-down control of visual attention. The first study showed that during the search for targets by a task-relevant negative feature (e.g., a horizontal bar that was not red), peripheral singleton cues carrying the negative feature (e.g., red) elicited slower reaction times when presented at the same (valid condition) versus a different position (invalid condition) than the target. In contrast, nonmatching cues carrying a task-irrelevant feature triggered no significant reaction time difference between valid and invalid conditions. These findings suggested top-down selective suppression of the negative cue contingent on participants' use of the negative feature during the target search. The second study explored the role of dimensional weighting in the suppression of visual attention using a similar approach, and it was shown that the negative feature was top-down suppressed, although participants concurrently searched for a target feature within the same dimension. Finally, in a third study, we investigated the flexibility of top-down suppression, and results showed that even when the same feature served as a positive and negative feature and search tasks alternated unpredictably from trial to trial, top-down control flexibly initiated and switched between attentional capture and suppression based on participants' current search goals. In conclusion, this talk will offer novel insights into search-goal contingent suppression and discuss possible avenues for future research on the output-selectivity of proactive top-down control through attentional capture and suppression to better understand the mechanisms shaping human goal-directed behavior.