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### **Top-down modulation of masked priming by task sets**

In classical theories of automaticity, unconscious automatic processes are usually thought to occur autonomously and independently of higher-level top-down factors such as attention, intentions and task sets. However, recent research has challenged this view: There is evidence that a prototypical example of an automatic process, priming elicited by unconsciously perceived masked stimuli, depends on attention and action intentions similar to conscious controlled processes. This demonstrates the necessity to refine the classical concept of automaticity. My colleagues and I investigate the functional and neuronal mechanisms underlying the modulatory influences of top-down factors on priming. Based on a gating framework, we assess how previously activated task sets affect priming effects elicited by unconsciously perceived masked stimuli. A newly developed cueing task allows us to systematically assess within one and the same paradigm the effects (i) of different task sets (e.g., attentional focus on perceptual or semantic word features) (ii) on different forms of priming (e.g., priming based on word meaning or on sensory-motor preparation) (iii) elicited by unconsciously and consciously perceived stimuli, respectively. This research will help us to address the question whether conscious and unconscious perception are governed by the same set of computational principles.