The modality-switch effect: New insights from language processing

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Several studies on perception showed that there is a cognitive cost in shifting attention between events in different modalities (see Spence et al., 2001). This effect, known as Modality-Shifting Effect or Modality-Switch Effect (MSE, Pecher et al., 2003 and 2004), has also been found in studies where perceptual detection influenced conceptual processing (van Dantzig et al., 2008). The present study aims at investigating the MSE by priming conceptual processing with a perceptual linguistically described stimulus. Participants were first primed with a sentence describing a perceptual event (e.g., “The light enlightens”), then asked to perform a property-verification task on a concept-property pair (e.g., “Butter is yellowish”). Crucially, the prime sentence could share (i.e., visual - visual, auditory - auditory; compatible condition) or not (i.e., visual - auditory; auditory - visual, incompatible condition) the target modality. As expected, participants showed a better performance for the compatible compared to the incompatible condition, indicating a facilitation for the processing of a target whose modality was formerly primed. These results showed that the modality of concepts can be primed through language, supporting the embodied and grounded cognition view, which claims that sensory information and conceptual representation are closely related.