

Tactile Change Blindness Induced by Tactile and Visual Distractors

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Abstract. Change blindness studies have revealed people's inability to detect changes between two consecutively presented scenes when they are separated by a distractor. This failure has been reported within vision, audition, and touch but also crossmodally. In particular, participants' performance in detecting changes in position between two tactile scenes is impaired not only when a tactile mask is introduced between the two to-be-compared displays but also when a visual mask is used instead. Interestingly, with similar procedure, there is no effect of auditory masks on a tactile task or of tactile masks on a visual task (Auvray et al., 2007, 2008; Gallace et al., 2006). Such crossmodal change blindness effect also occurs when participants perform a different task. In a recent experiment, participants had to detect changes in the frequency of presentation of tactile stimuli. The two to-be-compared sequences of three tactile stimuli were presented either at a same or at a different rate. They were presented either consecutively, separated by an empty interval, a tactile, visual, or auditory mask. The visual and tactile masks significantly impaired participants' performance whereas the auditory mask had no effect on performance. These findings are discussed in relation to the crossmodal nature of attention.