

The effect of visual, auditory, and tactile distractors on people's awareness of tactile change

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Many studies of change detection have revealed that people are surprisingly poor at detecting changes between two consecutively presented scenes under a variety of different conditions (as, for example, when the two to-be-compared displays are separated by a blank or mask). This failure, known as 'change blindness', has been reported within vision, audition, and, more recently, within touch as well. In the study reported here, we investigated participants' ability to detect changes between two consecutively-presented vibrotactile patterns presented on the fingertips of both hands. The two to-be-compared patterns were presented either consecutively, separated by an empty interval, or else separated by the presentation of a tactile, visual, or auditory mask. Performance was impaired when an empty interval was inserted between the two consecutively-presented patterns as compared with the consecutive presentation condition. Performance was further impaired both when a tactile mask was introduced between the two to-be-compared displays, and when a visual mask was used instead. Interestingly, however, the presentation of the auditory mask had no effect on participants' performance. These results are discussed in relation to the role played by multisensory and spatial information processing in people's awareness of tactile information.