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VIEWING FINGERS OF THE SAME HAND CAN DISTURB TACTILE ATTENTIONAL SELECTION

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Viewing the body has been shown to enhance tactile spatial resolution by modifying the cortical representation of the viewed body part in primary somatosensory cortex (SI). Here we report that vision can have detrimental effects on tactile spatial processing when adjacent body parts that compete for attentional selection are viewed simultaneously. In Experiment 1, we used somatosensory event-related potentials(ERPs) to demonstrate that viewing two fingers of the same hand substantially delays selecting one over the other. Importantly, a detrimental effect of vision does not arise when selecting between fingers of different hands. In Experiment 2, we replicated the within-hand selection task and manipulated hand posture. We found that the detrimental effect of vision on tactile attentional selection depends on the separation of adjacent fingers in external space. Taken together, we peopose that visual exposure disturbs tactile selection by smearing the cortical boundaries of adjacent finger representations in S1, only, when these are viewed close together.