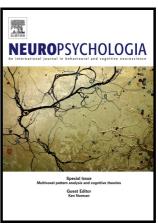
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ACCEPTED MANUSCRIPT

Congruency of body-related information induces somatosensory reorganization

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**Abstract** 

Chronic pain and impaired tactile sensitivity are frequently associated with "blurred"

representations in the somatosensory cortex. The factors that produce such

somatosensory blurring, however, remain poorly understood. We manipulated visuo-

tactile congruence to investigate its role in promoting somatosensory reorganization.

To this aim we used the mirror box illusion that produced in participants the

subjective feeling of looking directly at their left hand, though they were seeing the

reflection of their right hand. Simultaneous touches were applied to the middle or ring

finger of each hand. In one session, the same fingers were touched (for example both

middle fingers), producing a *congruent* percept; in the other session different fingers

were touched, producing an incongruent percept. In the somatosensory system,

suppressive interactions between adjacent stimuli are an index of intracortical

inhibitory function. After each congruent and incongruent session, we recorded

somatosensory evoked potential (SEPs) elicited by electrocutaneous stimulation of the

left ring and middle fingers, either individually or simultaneously. A somatosensory

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