

The role of ~~the~~ vision in ~~b~~Body representations: a study on hand distortions in blind and sighted individuals

Michelle Giraud^{1*}, Luigi Tamè² & Elena Nava¹

*corresponding author

¹Department of Psychology, University of Milano-Bicocca;

²School of Psychology, University of Kent.

Several studies have shown ~~that, in~~ healthy individuals, ~~the presence present of~~ large distortions ~~across different body parts,~~ as assessed through ~~tactile for distance estimation.~~ ~~perception of two tactile stimuli represented on different body parts.~~ The tactile distance between two touches on the dorsum of the hand is perceived as larger when they are oriented mediolaterally than proximodistally.

Interestingly, studies have revealed that ~~by~~ Other studies showed that a temporarily altered visual experience of the body, ~~the perception of tactile distances affects perceived~~ varies, suggesting that vision might play a crucial role in bodily distortions and more generally in the perception of body ~~image~~ tactile distances. This ~~might be due to is because~~ the system that tends to preserve tactile size constancy by rescaling the distorted body representation into an object-centred space. This rescaling requires that the brain possesses a representation of the physical size of the stimulated body part. However, it is unclear what ~~role~~ vision ~~plays's role is~~ in tactile size constancy.

Here, we investigated the role of vision in body representation by asking blind and sighted individuals to estimate tactile distances between pairs of points on the ~~back of the~~ dorsum of ~~their hand~~ and on their fingers. The results showed that, regardless of visual experience, both groups ~~of subjects~~ showed typical hand/~~fingers~~ distortions. ~~This suggests~~ that visual information does not seem to influence ~~body representation tested using a tactile task.~~ ~~image,~~ at least hand perception. Therefore, ~~Our results also suggest that,~~ at least, the participants' representation of the back of the hand. ~~However, concerning the fingers, blind and sighted individuals show a difference in how they perceive them.~~ This seems to align with the idea that ~~the~~ rescaling of distorted body representations induced by touch ~~seems not to be~~ ~~are not~~ ~~visually-driven.~~ ~~occurs on the basis of visual cues.~~