

## **Neural relationship between Vision and Touch in the Human Brain**

Low vision alters our reliance on other senses, including touch. A proper correspondence between what we see (e.g. "I see a mosquito on a finger") and what we feel (e.g. "I feel a mosquito bite on a finger") is essential to create an accurate sense of body ownership ("*this* bitten finger is *my* finger"). Experimentally, this is shown by the so-called "Rubber Hand Illusion (RHI)", during which the congruency between a "visual stroking" of a fake hand (seen, but not felt) and the "tactile stroking" of one's own hand (felt, but not seen) leads to the illusion that the fake hand belongs to us. The onset of the RHI is a sign that, in normal conditions, vision has a preeminent role over touch and drives the sense of body ownership. But what if vision becomes weaker? Will it still be dominant over touch? The present project will address this point by merging human brain imaging and robotics to provide new neurophysiological evidence on (a) the effects of low vision on the reweighting of touch and (b) the consequent feeling of body ownership. Using this approach, the project will reveal the neural compensatory mechanisms in association with low vision, with evident relevance for clinics and real-life situations.