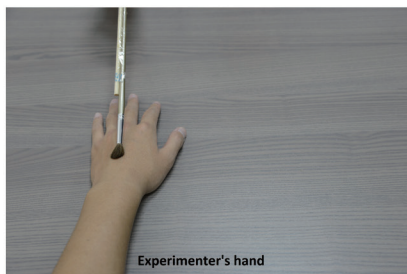
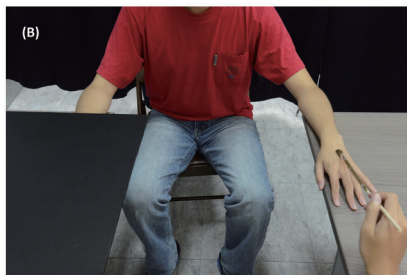
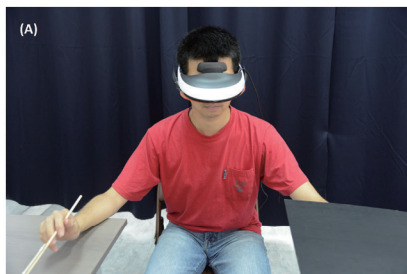


# Self-touching illusion and bodily self-consciousness

Walking into a coffee shop, I quickly get a cappuccino and take a sip to enjoy the taste and aroma. Two fundamental types of **bodily self-consciousness** are involved here. First, I experience the hand holding the cup as my hand, and I experience this particular body that just walked in as my body.



This is the sense of **body ownership**, the experience of what it is like to feel a body part or a whole body as mine. The second type is the sense that I am the unique subject of those conscious experiences. For instance, I have an implicit sense that it is me who is experiencing the specific aroma and taste of cappuccino, it is me who is having the tactile sensations of holding the coffee mug, etc. This is the sense of **experiential ownership**, which corresponds to the sense of “**self-as-subject**” in the philosophical literature.

In the **NeuroPhilosophy Lab**, we recently investigated two issues regarding the subjective experience of one's body. First, is the experience of owning a full body fundamentally different from the experience of owning a body part? Second, when I experience a bodily sensation, does this guarantee that I cannot be wrong about whether it is me who feels it? We conducted a series of experiments that combined the rubber hand illusion (RHI) and the “body swap illusion.” The subject wore a head-mounted display (HMD) connected to a stereo camera set on the experimenter's head. Sitting face to face, the subject and the experimenter used their right hand, which held a paintbrush, to brush each other's left hand. Through the HMD, the subject adopted the experimenter's **first-person perspective (1PP)** as if it was his/her own 1PP. The subject watched the experimenter's hand from the adopted 1PP and/or the subject's own hand from the adopted

**third-person perspective (3PP)** in the opposite direction (180°) or the subject's full body from the adopted 3PP (180° with or without face). The synchronous full-body conditions generated a “**self-touching illusion**”: many participants expressed that they felt that they were “brushing [their] own hand!” We found that (1) the sense of body-part ownership and the sense of full-body ownership are not fundamentally different from each other; and (2) our data present a strong case against the mainstream philosophical view called the immunity principle (IEM). We argue that it is possible for misrepresentation to occur in the subject's sense of experiential ownership. These findings suggest that not only the sense of body ownership but also the sense of experiential ownership call for interdisciplinary studies.

## Reference

Caleb Liang,\* Si-Yan Chang, Wen-Yeo Chen, Hsu-Chia Huang and Yen-Tung Lee, (2015). Body ownership and experiential ownership in the self-touching *illusion*. *Frontiers in Psychology*, 5:1591. DOI: 10.3389/fpsyg.2014.01591.

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