

# Local and Global Bodily Ownership: A Case for Representational Independence

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Many philosophers posit that a feeling of bodily ownership, sometimes referred to as a feeling of “mineness,” is a real and distinctive aspect of our phenomenology (Billon, 2017; de Vignemont, 2018; Peacocke, 2014). Empirical evidence not only supports positing this sense of bodily ownership as an aspect of phenomenology, but also suggests that individuals experience it for both their body parts and whole bodies. The rubber hand illusion offers evidence of a sense of body part ownership (local ownership): subjects report feeling as though a rubber hand belongs to them when it is stroked synchronously with their real, hidden hand (Botvinick & Cohen, 1998). Meanwhile, evidence for a sense of whole body ownership (global ownership) comes from the full-body illusion, where subjects report feeling as though a mannequin’s entire body belongs to them (Petkova & Ehrsson, 2008).

Are the representational bases of these two senses of ownership one and the same? For present purposes, I assume that both senses of ownership have some representational basis – that there are mental representations that ground, or correlate with, one’s feelings. My question, which I call the *mereological question* (following Orbán & Wong (2023)), is whether the representations that ground global ownership are the same as those that ground local ownership. In what follows, I synthesize recent empirical evidence to argue that they are not.

While addressing the mereological question offers to deepen our understanding of bodily self-consciousness, it has received relatively little attention in the philosophical literature. One prominent exception comes from Bermúdez (2017). While focused on judgments of ownership, Bermúdez’s representational account can equally apply to feelings of ownership. According to the account, both kinds of ownership are grounded in the same hierarchy of body part representations. Local ownership is grounded in the individual representations that compose the hierarchy, while global ownership is grounded in the hierarchy as a whole. By positing a single representational structure to explain both kinds of ownership, this account achieves ontological simplicity and broad scope.

Despite these theoretical virtues, recent empirical evidence – which has yet to be fully appreciated in the philosophical literature – challenges this picture. I draw on subjective reports and neuroimaging findings to argue for what I call *Representational Independence*: the representations that ground local ownership are not the same as those that ground global ownership. Specifically, no combination of body part ownership representations can ground whole body ownership – the latter requires distinct representations.

The strongest evidence for Representational Independence comes from subjective reports in experiments that aim to manipulate the senses of local and global ownership simultaneously. Using a version of the full-body illusion, O’Kane et al. (2024) found that in certain experimental conditions, participants reported feelings of ownership for a mannequin’s whole body while denying feelings of ownership for its parts; in other conditions, participants reported the reverse. These reports indicate a two-way dissociation between local and global ownership that is plausibly explained by their having distinct representational bases. Convergent evidence for Representational Independence comes from neuroimaging. fMRI studies suggest that a global ownership representation is instantiated in the left ventral premotor cortex. Activity in this region correlates with experiences of global ownership and is insensitive to information about specific body parts (Petkova et al., 2011; Gentile et al., 2015). If different neural activity patterns instantiate different representations, then this evidence suggests that global and local ownership are grounded in different representations, in line with Representational Independence.

These findings don’t merely challenge Bermúdez’s proposal; they act as constraints on future theories. Specifically, they suggest that a complete account of bodily ownership requires that at least some representations grounding global ownership are distinct from those grounding local ownership. This means that we cannot simply extend other representational accounts of local ownership, such as de Vignemont’s (2018), to cover global ownership.

A new account of whole body ownership is needed. To respect Representational Independence, I propose adding a single representation that grounds global ownership to one’s preferred theory of local ownership. I then sketch possibilities for what this representation could be, ranging from a minimal pointer akin to FINSTs (Pylyshyn, 1989), to a feature representation with the content *mine*, to a mental file used to track one’s whole body (Recanati, 2012). Finally, I suggest that positing a BODY mental file is particularly intriguing given its similarity to the SELF file used in thought. Not only would different aspects of self-related cognition rely on similar representational resources, but also this might hint at a developmental trajectory from the more primitive BODY file to the conceptual SELF file.

**Keywords:** bodily ownership, body representation, full-body illusion, self-consciousness, mental files

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