

Sensory augmentation: extending the body or incorporation into the body?

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My most recent research was on artificial extensions of human embodiment, and the distinction between extension and incorporation. Some of my recent work investigates the role of a pre-existing body-model that is an enabling constraint for the incorporation of objects into the body. This body-model is also a basis for the distinction between body extensions (e.g., in the case of tool-use) and incorporation (e.g., in the case of successful prosthesis use). It is argued that, in the case of incorporation, changes in the sense of body-ownership involve a reorganization of the body-model, whereas extension of the body with tools does not involve changes in the sense of body-ownership (De Preester & Tsakiris, in press, 'Body-extension versus body-incorporation: is there a need for a body-model?', *Phenomenology and the cognitive sciences*; De Preester, The bodily origins of technics: Heidegger, cognitive science and the prosthetic subject, to appear in *Heidegger and Cognitive Science* eds. Kiverstein & Wheeler, MacMillan).

In the course of the above research, I had to constrain myself to motor extensions of the body, i.e. to the replacement of lacking limbs or parts thereof, and to extensions of effectors of the body. The major reason was that the involvement of *sensory* extensions, augmentations or improvements of the body seem to imply a different 'logic', i.e. a different kind or reorganisation, of the feeling of embodiment. Nonetheless, the idea that the status of the apparatuses used for sensory augmentation is still unclear, and remains suspended between considering them as part of the sensory body or as extension of the sensory-motor body, not only holds in the context of tools and prostheses, but also in the context of sensory augmentation.

The workshop on sensory augmentation can offer the occasion to think further about a possible distinction between extension and/or incorporation for sensory prostheses, and not only for replacement parts for limbs or parts of limbs. In the case of sensory prostheses, we may go further than replacements (e.g. one modality for another), and arrive at truly new extensions of our sensory embodiment, i.e. not constrained by a pre-existing body-model.