We are aware of our bodies. I see the world by opening my eyes and in so doing, I feel the motion of my eyelid. I feel that my legs are crossed and that my arm is raising; I feel tired and thirsty; I feel cold; I feel my teeth begin to chatter; my back itches. The way we relate to our body, including the way we perceive it, control it and affectively react to what happens to it, is unlike the way we relate to other objects.

[...] One strategy to analyse the phenomenology of bodily awareness is to track its origin. As said earlier, we perceive our body not only from the outside, but also from the inside. Although widely accepted, the distinction between the two experiential modes of presentation of the body is rarely spelled out and often reduced to the dichotomy between external senses and body senses, which include touch, proprioception, the vestibular, the nociceptive and the interoceptive systems.

F. de Vignemont, "Bodily Awareness", The Stanford Encyclopedia of Philosophy
URL = http://plato.stanford.edu/entries/bodily-awareness/

It is a powerful illusion. In a similar series of studies, conducted by Vilayanur Ramachandran and described in his book Phantoms in the Brain, people were asked to place their left hand below a table, and an experimenter then stroked the hidden hand and the tabletop simultaneously. Once again, their sense of self shifted, with about 50 per cent of people feeling as if the wooden tabletop had become part of them.

To explain what’s going on here, let’s use a simple analogy. Imagine walking around in a new city and suddenly realizing that you are lost. The only way forward is to go hunting for a signpost. Similarly, when your brain is trying to decide where ‘you’ are it has to rely on the equivalent of signposts, namely, information from your senses.

Most of the time this works really well. Your brain might, for example, see your hand and feel pressure from your fingertip, and so correctly assume that ‘you’ are in your arm. However, in the same way that people sometimes mess around with signposts and point them in the wrong direction, so once in a while
your brain will mess up. The rubber hand experiment is one of those situations. During the study, your brain ‘feels’ your left hand being stroked, ‘sees’ a dummy hand or wooden table being subjected to simultaneous stroking, concludes that ‘you’ must therefore be located in the dummy hand or table, and constructs a sense of self that is consistent with this idea. In short, the sense of where you are is not hard-wired into your brain. Instead, it is the result of your brain constantly using information from your senses to come up with a sensible guess. Because of this, the sense of ‘you’ being inside your body is subject to change at a moment’s notice. [...] The dummy hand and virtual reality experiments demonstrate that the everyday feeling of being inside your body is constructed by the brain from sensory information. Alter that information and it is relatively easy to get people to feel as if they are outside of their bodies. Of course, people don’t have access to rubber hands and aren’t wired into virtual reality systems when they have out-of-body experiences. However, many researchers now think that this strangely counter-intuitive idea is essential to understanding the nature of these episodes.