

Sensation

by Jess H. Brewer

At the crossroads of Descartes' Mind/Body segregation lies the problem of *sensation*: how, through our *senses*, we can interact with, detect, be informed about the physical world. I personally am of the opinion that such segregation is itself illusory: *mind* is an emergent phenomenon, a property inevitably arising from a sufficiently complex and sufficiently "trained" network of a sufficient number of neurons. But this problem transcends differences of opinion about the intrinsic nature of mind. As Descartes himself observed, *mind happens*; so it behooves us to treat it as a *real thing*, even if our inability to predict (or, so far, even *explain*) it puts it squarely in the container known as "magic".

So if "seeing is believing", let's explore *how* we "see" physically:

Photons with wavelengths in the visible range are produced somewhere outside our bodies and are either emitted or reflected from the object we "see". From there, a few of them reach the cornea and lens of our eye and are refocused on our retina upside down. The rod and cone cells of our retina absorb these photons and are sensitive to different colors, generating quasi-digital electrochemical impulses that say, "a red photon was absorbed at this location," and those impulses are transmitted down a massively parallel bundle of "wires" (the optic nerve) and dumped into our visual cortex, whose job is to interpret them in terms of elaborate *models* devised by "deep learning" from an enormous database of different things we have "seen" before.

These models can easily be fooled by optical illusions, and are also extremely *plastic*: if you put on glasses that "turn everything upside-down" it only takes a week or two before you adjust completely to the change and "see" the world normally. Take them off and it takes another week or two to readjust.

Where is the boundary between the physical network and the magic of sight? There isn't one. There *can't be* one. Thus economy alone demands that we remove the barrier separating Mind from Body. Mind is an emergent property of a sufficiently complex and properly connected Body.

Sensation, therefore, is an imaginary border between Mind and Body that we place wherever the politics of the moment require.