Simply put, that system operates in our brains and gives us the capacity to connect with others, to know and even feel what they feel, and to connect with the natural world. It is the heart of our capacity for empathy. From emotion research, we know that certain emotions correlate with certain actions in our own bodies—in facial muscles, in posture, and so on. When we feel happy, for instance, our facial muscles are prompted to produce a smile, as opposed to a frown or a baring of the teeth. We also know that the physical cues that broadcast emotion in others will usually trigger in an observer the same brain response that would accompany those physical cues of the same emotion in ourselves. That is why we can usually tell if someone else is happy or sad, or angry or bored—and why a smile is often unconsciously greeted with a smile or a yawn with a yawn.

All this is thanks to the mirror neuron system, which has circuitry connecting the brain's action centers and perception centers. As a consequence, what you see others doing is neurally paired with brain activity that could control your own actions. Muscles are activated by firing neurons, and many of the same neurons are firing whether you are performing an action or whether you are seeing someone else performing the same action. This "mirroring" allows you to see the musculature tied to the emotions of others and sense in your brain what the same musculature would be like in your body, and hence the same emotions, in yourself. In short, it allows you to feel the emotions of others! That is what empathy is about.

But this effect has further repercussions in the brain. Neuroscientists have discovered a brain overlap, too, between imagining and doing. Many of the same neural regions are activated when we form mental images as when we actually see. The same holds true for whether we imagine moving or are actually moving. That means that we have the capacity to empathize not only with someone present, but also with someone we can imagine, remember, read about, dream about, and so on. That is why we can be deeply moved by a novel or a movie, or even a newspaper story.

Neuroscientists have also shown that, when someone is in love and they see their loved one in pain, the pain center in their own brain is activated. Emotional pain is real.