

## Further Reading, Mirror Neurons, 'The Body Keeps The Score' (extract) – Bessel Van Der Kolk

“Mirror neurons explained many previously unexplainable aspects of the mind, such as empathy, imitation, synchrony, and even the development of language... When people are in sync with each other, they tend to stand or sit similar ways, and their voices take on the same rhythms.”

- from 'The Body Keeps the Score', Bessel Van De Kolk

“The frontal lobes (of the brain) are also the seat of **empathy** – our ability to “feel into” someone else.

One of the truly sensational discoveries of modern neuroscience took place in 1994, when in a lucky accident a group of Italian scientists identified specialised cells in the cortex that came to be known as **mirror neurons**. The researchers had attached electrodes to individual neurons in a monkey's pre-motor area, then set up a computer to monitor precisely which neurons fired when the monkey picked up a peanut or grasped a banana. At one point an experimenter was putting food pellets into a box when he looked up at the computer. The monkey's brain cells were firing at the exact location where the motor command neurons were located. But the monkey wasn't eating or moving. He was watching the researcher, and his brain was vicariously mirroring the researcher's actions.

Numerous other experiments followed around the world, and it soon became clear that **mirror neurons explained many previously unexplainable aspects of the mind**, such as empathy, imitation, synchrony, and even the development of language. One writer compared mirror neurons to "neural WiFi" – we pick up not only another person's movement but her emotional state and intentions as well. When people are in sync with each other, they tend to stand or sit similar ways, and their voices take on the same rhythms. But our mirror neurons also make us vulnerable to others' negativity, so that we respond to their anger with fury or are dragged down by their depression...

Trauma almost invariably involves not being seen, not being mirrored, and not being taken-into account. Treatment needs to reactivate the capacity to safely mirror, and be mirrored, by others, but also to resist being hijacked by others' negative emotions.

(The Body Keeps the Score, Bessel Van Der Kolk, 2014, p58-59)