

The biological basis for empathy essay examples

[Sociology](#), [Violence](#)



Abstract

This paper analyzes leading theories of thoughts on the physical basis for empathy. Human emotions have long been the subject of philosophical inquiries and only recently has the advent of psychology allowed us to study the physical brain structures fueling these discoveries. Researchers have seen that cells called mirror cells and certain assemblies of parts of the brain are strongly associated with our ability to empathize, though much research needs to be done for this conclusions to be verified and expanded.

Empathy is intrinsic to the human experience. Some would argue empathy is the trait that makes us most human. Psychologist Martin L. Hoffman writes in his book *Empathy and Moral Development: Implication for Caring and Justice* that “ Since the Holocaust, cultural relativism is dead” (Hoffman, 2001).

Using this emotionally charged allusion, he continues an argument stating that we no longer have the luxuries of thought that led to the belief that one cultures value is as good as another. Rather than appealing to proof provided by a higher power to make his argument, Hoffman, appeals to the psychophysiological structure responsible for empathy as the basis for logic for core values within a culture. This essay explores theories on the physical structures thought to be the underlying physical basis for the emotional response of empathy, which some psychologists, such as Hoffman, believe to be the human basis for morality.

While Hoffman applauds Kohlberg and his followers for advocating a universal principle of justice, on the grounds of it being too vague, Hoffman believes that when one gets down to actual human behavior that “ Empathy “ may lay claim to being a universal prosocial [sic] moral motive, at least in

societies that place high value on caring and justice.” (Hoffman, 2001).

A PhD student writing in Neuroscience & Neurology points out in “ I Feel Your Pain” that there is not currently in the field across the board agreement about what are the underlying structures that lead to the empathetic response. A recent study carried out by researchers from the University of Valencia have suggested that their research points to empathy sharing neural structures with the same neural assemblies responsible for violence (Moya-Albiol, 2010).

The study found a connection between the prefrontal and temporal cortex, the amygdala and parts of the limbic system that included insula and the cingulate cortex which the researchers said played a “ Fundamental role in all situations in which empathy appears” (Moya-Albiol, 2010).

If these findings are true, then that would mean, as the study points out, that the same cerebral circuits that wire the brain for empathy could be similar to those involved with violence.

It has been widely shown that empathy has the effect of reducing violence behavior, and it could be because when the brain structures are in use by one emotion it may prevent the other. The researchers see this as positive and could lead to educating people to be more empathetic as a way of bringing about peace and reducing conflict in the world.

The Moya-Albiol study is in line with study on empathetic deficits following prefrontal brain damages as studied by researchers from The University of Haifa collaborating with the Rambam Medical Center. Their work found that “ Impaired empathic response [had] been described in patients following brain injury, suggesting that empathy may be a fundamental aspect of the social

behavior disturbed by brain damage.” (S. G. Shamay-Tsory, R. Tomer, B. D. Berger, and J. Aharon-Peretz, 2003).

These researchers were quick to point out that more work needs to be done before confident conclusions can be drawn from their work. They found that the empathetic response of patients with damage to their prefrontal cortex was $n = 25$ compared to healthy control subjects who had $n = 19$. The nine patients with most profound empathy deficiency had damage to the right ventromedial, showing the importance of this brain structure on empathy. Their research shows how prefrontal structures play an key part in a network facilitating the empathic response and particularly that the right ventromedial cortex has a distinctive function in mixing cognition and affect to yield the empathic response.

On the level of neural circuitry, mirror neurons, have been given credit an attention in their role of producing an empathetic response. A Newyork Times article summarizing the conclusions of a team of researchers led by Giacomo Rizzolatti, a neuroscientists at the University of Parma, was titled “ Cells That Read Minds” referring to mirror neurons ability to mimic the state of another human being observed by the subject being studied.

One of their preliminary findings that led to more testing was that when a monkey observed humans or other monkeys put peanuts to their mouths, some of the same cells fired as when the monkey brought peanuts to it’s own mouth. (Blakeslee, 2006). The researchers tested the monkeys with a varieties of foods, fruits, and sweets and found the results to be consistent. Further studies found that . Humans also process mirror neurons that are far cleverer, more elastic and more highly evolved than the ones seen in

monkeys—a fact that points to our advanced sociality. Dr. Rizzolatti underscores the importance of the mirror neurons and their function. " Our survival depends on understanding the actions, intentions and emotions of others." (Blakeslee, 2006).

Mirror neurons can be triggered by merely seeing someone pick up an object and know they are going to pick up that object without using the thinking mind to arrive at the conclusions. Mirror neurons are shape shifting cells, which become what they see happening by casual agents in the outside world.

However, the places where mirror neurons congregate do not provide a clean cross-over to the organs associated with empathy. Mirror neurons have been observed in various several areas of the brain: the posterior parietal lobe, the premotor cortex, and the superior temporal sulcus. While this provides some overlap to the Haifa study, it also contains different conclusions on the physical structures underlying our empathy.

More research may one day establish an overriding theory that takes into account not just mirror neurons, but also the structures they work with to create the empathetic response. Empathy is an emotion which is often considered as having imbibed humanity with that which makes us human, our ability to concern ourselves with not just our own personal well-being, but with the well-being of humans at large. Researchers are currently piecing together the system by which fuels the empathy that governs so much of humanity's daily life.

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