

## From Mirror Neurons to Moral Neuropolitics

Gary Olson

Empathy is the only human superpower—it can shrink distance, cut through social and power hierarchies, transcend differences, and provoke political and social change.

—Elizabeth Thomas

The success of the abolitionist movement lay in its making real for people in Britain and America the slave ship's pervasive and utterly instrumental terror, which was indeed its defining feature.

—Marcus Rediker

The official directives needn't be explicit to be well understood: Do not let too much empathy move in unauthorized directions.

—Norman Solomon

In his magisterial study, *The Slave Ship*, maritime historian Marcus Rediker has documented the role played by emotional and especially visual appeals in ending the trans-Atlantic slave trade. Not unlike the structural violence endemic to global capitalism today, the abolitionist James Field Stanfield argued that the terrible truths of the slave trade “had been withheld from the public eye by every effort that interest, ingenuity, and influence, could devise.” (Rediker, 2007, p. 133)

Therefore, “Stanfield appealed to the immediate, visceral experience of the slave ship, over and against abstract knowledge about the slave trade, as decisive to abolition. . . .” (p. 156) The abolitionist's most potent weapon was the dissemination of drawings of the slave ship Brooks. Rediker asserts that these images were “to be among the most effective propaganda any social movement has ever created.” (p. 308)

Based on recent findings from neuroscience we can plausibly deduce that the mirror neurons of the viewer were engaged by these images of others suffering. The appeal was to the public's awakened sense of compassion and revulsion toward graphic depictions of the wholesale violence, barbarity, and torture routinely practiced on these Atlantic voyages. Rediker notes that the images would instantaneously “make the viewer identify and sympathize with the ‘injured Africans’ on the lower deck of the ship . . .” while also producing a sense of moral outrage. (p. 315)

In our own day, the nonprofit Edge Foundation recently asked some of the world's most eminent scientists, “What are you optimistic about? Why?” In response, the prominent neuroscientist Marco Iacoboni cited the proliferating experimental work into the neural mechanisms that reveal how humans are “wired for empathy.” This is the aforementioned

discovery of the mirror neuron system or MNS. The work shows that the same affective brain circuits are automatically mobilized upon feeling one's own pain and the pain of others.

Iacoboni's optimism is grounded in his belief that with the popularization of scientific insights, these findings in neuroscience will seep into public awareness and "... this explicit level of understanding our empathic nature will at some point dissolve the massive belief systems that dominate our societies and that threaten to destroy us." (Iacoboni, 2007, p. 14, 2008) In similar fashion, Steven Pinker concludes a recent piece on the science of morality with these challenging but hopeful words from Anton Chekov, "Man will become better when you show him what he is like." (Pinker, 2008)

In 1996, through single cell recordings in macaque monkeys researchers reported the discovery of a class of brain cells dubbed "mirror neurons" (Gallese, 1996). Located in area F5 of the premotor cortex, these mirror neurons fired not only when the monkey made an action, but also when the monkey was observing somebody else making the same action. The monkey's neurons were "mirroring" the activity she was observing. Later on, by mapping regions of the human brain using Functional Magnetic Resonance Imaging (fMRI), it was discovered that human areas that presumably had mirror neurons also communicated with the brain's emotional or limbic system, facilitating connection with another's feelings, probably by mirroring those feelings. This neural circuitry is presumed to be the basis of empathic behavior, in which actions in response to the distress of others are virtually instantaneous. As Goleman puts it, "That this flow from empathy to action occurs with such automaticity hints at circuitry dedicated to this very sequence." For example, in the case of hearing a child's anguished scream, "To feel distress stirs an urge to help" (Goleman, 2006, p. 60).

The existence of empathy, mirror neurons was only inferred by these fMRI studies. But in 2007, Iacoboni, the neurosurgeon Itzhak Fried and their associates at the University of California at Los Angeles (UCLA), studied brain activity in people who had already been wired up by Fried who was attempting to uncover the origins of their epileptic seizures. Through the insertion of electrodes into the frontal lobes, this team of scientists identified several mirror neurons that were activated by both performance and observation of an activity.

Valayanur Ramachandran, director of the Center for Brain and Cognition at the University of California at San Diego (UCSD) observes, "We used to say, metaphorically, that 'I can feel another's pain,' but now we know that my mirror neurons can literally feel your pain." (Slack, 2007) Ramachandran, who calls them "empathy neurons" or "Dalai Lama neurons," writes that "In essence the neuron is part of a network that allows you to see the world 'from the other person's point of view,' hence the name 'mirror neuron.'" (Ramachandran, 2006)

Giacomo Rizzolatti, the Italian neuroscientist who discovered mirror neurons, notes that this hardwired system is what permits us "to grasp the minds of others not through conceptual reasoning but through direct simulation by feeling, not by thinking" (Rizzolatti in Goleman, 2006). As Decety notes, empathy then allows us to "forge connections with people whose lives seem utterly alien from us" (Decety, 2006, p. 2). Where comparable experience is lacking, this "cognitive empathy" builds on the neural basis and allows one to "actively project oneself into the shoes of another person" by trying to imagine the other person's situation (Preston, in press),

Preston and de Waal (2002). Empathy is “other directed” and recognizes the other’s humanity. Little wonder that some scientists believe the discovery of mirror neurons is the most significant neurological finding in decades, perhaps rivaling what the discovery of DNA was for biology. (Ramachandran, 2006)

The neuroscience of empathy parallels investigations being undertaken in cognate fields. Some forty years ago the celebrated primatologist Jane Goodall observed and wrote about chimpanzee emotions, social relationships, and “chimpanzee culture,” but experts remained highly skeptical. A decade ago the famed primate scientist Frans B.M. de Waal (1996) wrote about the antecedents to morality in *Good Natured: The Origins of Right and Wrong in Humans and Other Animals*, but scientific consensus remained elusive. All that’s changed. As a recent editorial in the journal *Nature* (2007) put it, it’s now “unassailable fact” that human minds, including aspects of moral thought, are the product of evolution from earlier primates. According to de Waal “You don’t hear any debate now.” In his more recent work, de Waal plausibly argues that human morality—including our capacity to empathize—is a natural outgrowth or inheritance of behavior from our closest evolutionary relatives.

Overwhelming evidence has been marshaled to support E.O. Wilson’s early claim that not only were selfish individuals sanctioned but “Compassion is selective and often ultimately self-serving.” (Wilson, 1978)

Following Darwin, highly sophisticated studies by biologists Robert Boyd and Peter Richerson posit that large-scale cooperation within the human species—including with genetically unrelated individuals within a group—was favored by selection. (Hauser, 2006, p. 416) Evolution selected for the trait of empathy because there were survival benefits in coming to grips with others. In his book *People of the Lake* (1978), the world-renowned paleoanthropologist Richard Leakey unequivocally declares, “We are human because our ancestors learned to share their food and their skills in an honored network of obligation.”

Studies have shown that empathy is present in very young children, even at eighteen months of age and possibly younger. In the primate world, Warneken and colleagues at the Max Planck Institute at Leipzig, Germany, recently found that chimps extend help to unrelated chimps and unfamiliar humans, even when inconvenienced and regardless of any expectation of reward. This suggests that empathy may lie behind this natural tendency to help and that it was a factor in the social life of the common ancestor to chimpanzees and humans at the split some six million years ago (*New Scientist*, 2007; Warneken and Tomasello, 2006). It’s now indisputable that we share moral faculties with other species (de Waal, 2006; Trivers, 1971; Katz, 2000; Gintis, 2005; Hauser, 2006; Bekoff, 2007; Pierce, 2007). Pierce notes that there are “countless anecdotal accounts of elephants showing empathy toward sick and dying animals, both kin and non-kin (2007, p. 6). And recent research in Kenya has conclusively documented elephant’s open grieving/empathy for other dead elephants.

Mogil and his team at McGill University recently demonstrated that mice feel distress when they observe other mice experiencing pain. They tentatively concluded that the mice engaged visual cues to bring about this empathic response (Mogil, 2006; Ganguli, 2006). De

Waal's response to this study: "This is a highly significant finding and should open the eyes of people who think empathy is limited to our species." (Carey, 2006)

Additionally, Grufman and other scientists at the National Institutes of Health have offered persuasive evidence that altruistic acts activate a primitive part of the brain, producing a pleasurable response (2007). And recent research by Koenigs and colleagues (2007) indicates that within the brain's prefrontal cortex, the ventromedial prefrontal cortex or VMPC is required for emotions and moral judgment. Damage to the VMPC has been linked to psychopathic behavior and individuals with psychopathic tendencies present significant empathic impairment. (Blair, 2005, pp. 53-56)

A study by Miller (2001) and colleagues of the brain disorder frontotemporal dementia (FTD) is also instructive. FTD attacks the frontal lobes and anterior temporal lobes, the site of one's sense of self. One early system of FTD is the loss of empathy and the brain wave activity of mirror neurons in individuals with autism reveals misfiring.

While there are reasons to remain skeptical (see below) about the progressive political implications flowing from this work, a body of impressive empirical evidence reveals that the roots of prosocial behavior, including moral sentiments like empathy, precede the evolution of culture. This work sustains Noam Chomsky's visionary writing about a human moral instinct and his assertion that, while the principles of our moral nature have been poorly understood, "we can hardly doubt their existence or their central role in our intellectual and moral lives." (Chomsky, 1971, n.p., 1988; 2005, p. 263)

In his influential book *Mutual Aid* (1972, p. 57; 1902), the Russian revolutionary anarchist, geographer, and naturalist Petr Kropotkin, maintained that ". . . under any circumstances sociability is the greatest advantage in the struggle for life. Those species which willingly abandon it are doomed to decay." Special cooperation provided an evolutionary advantage, a "natural" strategy for survival.

Kropotkin readily acknowledged the role of competition, but he asserted that mutual aid was a "moral instinct" and "natural law." Based on his extensive studies of the animal world, he believed that this predisposition toward helping one another—human sociality—was of "prehuman origin." Killen and Cords, in a fittingly titled piece "Prince Kropotkin's Ghost," suggest that recent research in developmental psychology and primatology seems to vindicate Kropotkin's century-old assertions (2002).

So where does this leave us? If morality is rooted in biology, in the raw material or building blocks for the evolution of its expression, we now have a pending fortuitous marriage of hard science and secular morality in the most profound sense. The technical details of the social neuroscientific analysis supporting these assertions lie outside this paper, but suffice it to note that progress is proceeding at an exponential pace, the new discoveries are persuasive (Iacoboni, 2008; Lamm, 2007; Jackson, 2006) and our understanding of empathy has increased dramatically in barely a decade.

That said, one of the most vexing problems that remains to be explained is why so little progress has been made in extending this empathic orientation to distant lives, to those outside certain in-group moral circles. That is, given a world rife with overt and structural violence, one is forced to explain why our deep-seated moral intuition doesn't produce a more ameliorating effect, a more peaceful world. Iacoboni suggests this disjuncture is explained by massive belief systems, including political and religious ones, operating on the reflective and deliberate level. As de Waal reminds us, evolutionarily, empathy is the original starting point out of which sprang culture and language. But over time, the culture filters and influences how empathy evolves and is expressed. (de Waal, 2007, p. 50) These belief systems tend to override the automatic, pre-reflective, neurobiological traits that should bring people together. Iacoboni hypothesizes the presence of what he labels super mirror neurons in the frontal lobe area of the brain. These more complex, highly developed super mirror neurons may control the so-called lower-level or classic neurons. This research—arguably the apex of the cutting edge of neuroscience work today—is in the preliminary stages but further investigation might suggest how cognitive resistance works to sort, inhibit or otherwise modulate neurophysiological responses.

Hence a few cautionary notes are warranted. The first is that social context and triggering conditions are critical because, where there is conscious and massive elite manipulation, it becomes exceedingly difficult to get in touch with our moral faculties. Ervin Staub, a pioneering investigator in the field, acknowledges that even if empathy is rooted in nature, people will not act on it “. . . unless they have certain kinds of life experiences that shape their orientation toward other human beings and toward themselves (Staub, 2002, p. 222). As Jensen puts it, “The way we are educated and entertained keep us from knowing about or understanding the pain of others” (2002, 2008). Circumstances may preclude and overwhelm our perceptions, rendering us incapable of recognizing and giving expression to moral sentiments (Albert, n.d.; and also, Pinker, 2002). For example, the fear-mongering of artificially created scarcity may attenuate the empathic response.

The limitations placed on exposure to powerful images that might stir deep emotions within the American public is another. The recent destruction of CIA videotapes showing the torture of prisoners is one example. Landstuhl regional medical center in Germany, which routinely receives grotesquely maimed soldiers from Iraq, is off-limits for photos and reporters are closely monitored by military escorts. And we know the Pentagon forbids media photo coverage of the remains of soldiers departing from Ramstein Air Base in Germany or coffins returning to Dover, Delaware. (Tami Silco, who took the now-famous photo of 20 flag-draped coffins leaving Kuwait, lost her job.) Coverage of memorial services for the fallen are also forbidden even if the unit gives its approval.

Conversely, the virtually ubiquitous feedback loop of the towers falling on September 11 tended to create a feeling within the viewer that she was in fact falling, producing both identification with falling victims and a powerful sense of fear of “terrorism.” (Lakoff, 2001)

The second cautionary note is Hauser's (2006) observation that proximity was undoubtedly a factor in the expression of empathy. In our evolutionary past an attachment to the larger human family was virtually incomprehensible and therefore the emotional connection was lacking. Joshua Greene, a philosopher and neuroscientist, adds that “We evolved in a world

where people in trouble right in front of you existed, so our emotions were tuned to them, whereas we didn't face the other kind of situation." He suggests that to extend this immediate emotion-linked morality—one based on fundamental brain circuits—to unseen victims requires paying less attention to intuition and more to the cognitive dimension. If this boundary isn't contrived, it would seem, at a minimum, circumstantial and thus worthy of reassessing morality (Greene, 2007, n.p.). Given some of the positive dimensions of globalization, the potential for identifying with the "stranger" has never been more auspicious.

But not in every case. Carlisle (2007) notes that through the use of technology (including long-range killing and new types of training) the military has attempted to desensitize and circumvent the natural empathic response most soldiers experience toward their opponents. She cautions that ". . . with less opportunity to mirror other human's suffering that results in empathy, over time our capacity to empathize may disappear altogether." For a careful study of human's innate aversion to taking life and how the military has conditioned soldiers to overcome it—and the resulting psychological damage—the best treatment is Lt. Col. David Grossman's *On Killing* (1996).

It may be helpful, as Halpern (1993, p. 169) suggests, to think of empathy as a sort of spark of natural curiosity, prompting a need for further understanding and deeper questioning. However, our understanding of how or whether political engagement follows remains in its infancy and considerable work remains to be done. Almost a century ago, Stein (1917) wrote about empathy as "the experience of foreign consciousness in general." Salles' film *The Motorcycle Diaries* addresses empathy, albeit indirectly. The film follows Ernesto Guevara de la Serna and his friend Alberto Granada on an eight-month trek across Argentina, Peru, Colombia, Chile and Venezuela.

When leaving his leafy, upper middle-class suburb (his father is an architect) in Buenos Aires in 1952, Guevara is 23 and one semester from earning his medical degree. The young men embark on an adventure, a last fling before settling down to careers and lives of privilege. They are preoccupied with women, fun and adventure and certainly not seeking or expecting a life-transforming odyssey.

The film's power is in its depiction of Guevara's emerging political awareness that occurs as a consequence of unfiltered cumulative experiences. During their 8,000-mile journey, they encounter massive poverty, exploitation, and brutal working conditions, all consequences of an unjust international economic order. By the end Guevara has turned away from being a doctor because medicine is limited to treating the symptoms of poverty. For him, revolution becomes the expression of empathy, the only effective way to address suffering's root causes. This requires melding the cognitive component of empathy with engagement, with resistance against asymmetrical power, always an inherently political act. Otherwise, empathy has no meaning. [This roughly parallels the political practice of brahma-viharas by engaged Buddhists.] In his own oft-quoted words (not included in the film) Guevara stated that "The true revolutionary is guided by a great feeling of love."

Paul Farmer, the contemporary medical anthropologist, infectious disease specialist and international public health activist, has adopted different tactics but his diagnosis of the "pathologies of power" is remarkably similar to Guevara. He also writes approvingly of Cuba's

health programs, comparing them with his long work experience in Haiti. Both individuals were motivated early on by the belief that artificial epidemics have their origin in unjust socioeconomic structures, hence the need for social medicine, a “politics as medicine on a grand scale.” Both viewed “politics as medicine on a grand scale” and committed themselves to acting on behalf of the poor. Both exemplify exceptional social outliers of engaged empathy and the interplay of affective, cognitive and moral components. For Farmer’s radical critique of structural violence and the connections between disease and social inequality, see (Farmer, 2003; Kidder, 2003). Again, it remains to be explained why there is such a paucity of real world examples of empathic behavior. Why is U.S. culture characterized by a massive empathy deficit of almost pathological proportions? And what might be reasonably expected from a wider public understanding of the nature of empathy?

Hauser posits a “universal moral grammar,” hardwired into our neural circuits via evolution; this neural machinery precedes conscious decisions in life-and-death situations. However, we observe “nurture entering the picture to set the parameters and guide us toward the acquisition of particular moral systems.” At other points he suggests that environmental factors can push individuals toward defective moral reasoning, and the various outcomes for a given local culture are virtually limitless. (Hauser, 2006) For me, this discussion of cultural variation fails to give sufficient attention to the socioeconomic variables responsible for shaping the culture. As Goldschmidt argues, “It all has to do with the quality of justice and the availability of opportunity” (2006, p. 151) Earlier, Goldschmidt (1999, n.p.) argued that, “Culturally derived motives may replace, supplement or override genetically programmed behavior.”

To reiterate, the neurophysiological data strongly suggests that morality is grounded in biology. As Greene contends, it’s not “handed down” from on high by religious authorities or philosophers but “handed up” as a consequence of the brain’s evolutionary processes. (Greene in Vedantam, 2007). However, as Rizzolatti and Craighero (2006) wisely remind us, “To use the mirror mechanism—a biological mechanism—strictly in a positive way, a further—cultural—addition is necessary.”

Neither a reductive biological explanation nor a culture-inevitably-trumps-nature argument is defensible. Instead, I’m comfortable with what the political theorist William Connolly (2002) describes as “. . . politics through which cultural life mixes into the composition of body/brain process. And vice versa.” (Connolly, to my knowledge the first person to employ the term *neuropolitics*, doesn’t explore the mirror neurons/politics of empathy link in his erudite inquiry.)

Recent work by Molnar-Szakacs and colleagues suggests that cultural stimuli imprint and influence certain neurobiological responses and subsequent behavior. Further, the culture and ethnicity of those conveying the messages seems to be a critical variable. Using transcranial magnetic stimulation (TMS) they found significant measurable difference in mirror neural activity in their subjects depending on whether the information provider shared the subject’s cultural/ethnic background. Molnar-Szakacs conclude, “Our data shows that both ethnicity and culture interact to influence activity in the brain, specifically within the mirror neuron network involved in social communication and interaction.” (Molnar-Szakacs, 2007; Preston, 2006; and in press). While one hesitates to draw any firm conclusions from this very preliminary research,

further investigation of the links between culture and the encoding of mirror neurons is certainly warranted, not the least for its possibly profound political implications.

Here we return to our earlier question regarding the relative absence of widespread empathic responses within society. Cultures are rarely neutral, innocent phenomena but are consciously set up to reward some people and penalize others. As Parenti (2006) forcefully asserts, certain aspects of culture can function as instruments of social power and social domination through ideological indoctrination.

Culture is contested terrain and studying it can reveal how power is exercised and on whose behalf. Lakoff (2005) reminds us that in cognitive linguistics certain values like compassion are termed “contested concepts” because although a core meaning might be assumed, those holding a wildly different ideological commitment can appropriate and direct them toward other ends. The primer here is Gramsci’s (1971) classic analysis of cultural hegemony in which capitalism maintains domination, in part, through subtly but actively creating society’s prevailing cultural norms. This consensual control is achieved through mass media, education, religion and popular culture as subordinate classes assimilate certain ideas as “common sense.”

Cohen and Rogers, in parsing Chomsky’s critique of elites, note that “Once an unjust order exists, those benefitting from it have both an interest in maintaining it and, by virtue of their social advantages, the power to do so.” (Cohen, 1991, p. 17) (For a concise but not uncritical treatment of Chomsky’s social and ethical views, see Cohen, 1991.) Clearly, the vaunted human capacity for verbal communication cuts both ways. In the wrong hands, this capacity is often abused by consciously quelling the empathic response. When de Waal writes, “Animals are no moral philosophers,” I’m left to wonder if he isn’t favoring the former in this comparison. (de Waal, 1996b, n.p.)

One of the methods employed within capitalist democracies is Chomsky and Herman’s “manufacture of consent,” a form of highly sophisticated thought control. Potentially active citizens must be “distracted from their real interests and deliberately confused about the way the world works.” (Cohen, 1991, p. 7; Chomsky, 1988)

For this essay, and following Chomsky, I’m arguing that the human brain is the primary target of this perverse “nurture” or propaganda. In the context of this paper we might rephrase this as the human brain’s mirror neuron network is the target of this manufacturing of ignorance and indifference because exposure to certain new truths about empathy—hard evidence about our innate moral nature—poses a direct threat to elite interests. There’s no ghost in the machine, but the capitalist machine attempts to keep people in line with an ideological ghost, the notion of a self constructed on market values. But “. . . if no one saw himself or herself as capitalism needs them to do, their own self-respect would bar the system from exploiting and manipulating them.” (Kelleher, 2007) That is, given the apparent universality of this biological predisposition toward empathy, we have a potent scientific baseline upon which to launch further critiques of elite manipulation, this cultivation of callousness.



First, the evolutionary and biological origins of empathy contribute robust empirical evidence—not wishful thinking or even logical inference—on behalf of a case for organizing vastly better societies. In that vein, this new research is entirely consistent with work on the nature of authentic love and the concrete expression in that love in the form of care, effort, responsibility, courage and respect. As Eagleton reminds us, if others are also engaging in this behavior “. . . the result is a form of reciprocal service which provides the context for each self to flourish. The traditional name for this reciprocity is love.” Because reciprocity mandates equality and an end to exploitation and oppression, it follows that “a just, compassionate treatment of other people is on the grand scale of things one of the conditions for one’s own thriving.” And as social animals, when we act in this way we are realizing our natures “at their finest.” (2007, pp. 170, 159-150, and 173). (Allot (1992) provides an early account of the evolutionary history of love and its significance for human development and survival.)

Predatory urges, cruelty, barbarism and more are also aspects of our nature and have their evolutionary origins and neural correlates. As Chomsky has written, “If you see somebody beating a child to death, should you say, “Well, you know that’s human nature—which it is in fact: there certainly are conditions under which people will act just like that. To the extent the statement is true, and there is such an extent, it’s just not relevant: human nature also has the capacity to lead to selflessness, and cooperation, and sacrifice, and support, and solidarity, and tremendous courage, and lots of other things too.” (Chomsky, 2002, p. 356) The critical question is how to determine which will prevail, how to realize a form of global environment that enhances the opportunity for the empathic aspect of our nature to flourish.

I’ve noted elsewhere that Fromm’s classic, *The Art of Loving*, is a blistering indictment of the social and economic forces that deny us life’s most rewarding experience and “the only satisfying answer to the problem of human existence.” For Fromm, grasping how society shapes our human instincts, hence our behavior, is in turn the key to understanding why “love thy neighbor,” the love of the stranger, is so elusive in modern society.

The global capitalist culture with its premium on accumulation and profits not only devalues an empathic disposition but produces a stunted character where everything is transformed into a commodity, not only things, but individuals themselves. The very capacity to practice empathy (love) is subordinated to our state religion of the market in which each person seeks advantage in an alienating and endless commodity-greedy competition.

Over five decades ago, Fromm persuasively argued that “The principles of capitalist society and the principles of love are incompatible.” (Fromm, 1956, p. 110) Any honest person knows that the dominant features of capitalist society tend to produce individuals who are estranged from themselves, crippled personalities robbed of their humanity and in a constant struggle to express empathic love. Little wonder that Fromm believed radical changes in our social structure and economic institutions were needed if empathy/love is to be anything more than a rare individual achievement and a socially marginal phenomenon. He understood that only when the economic system serves women and men, rather than the opposite, will this be possible (Olson, 2006).

The dominant cultural narrative of hyper-individualism is challenged and the insidiously effective scapegoating of human nature that claims we are motivated by greedy, dog-eat-dog “individual self-interest is all” is undermined. From doctrines of original sin and Ayn Rand to mainstream economics and David Brooks (2007), certain interpretations of human nature have invariably functioned to retard class consciousness. These new research findings help to refute the allegation that people are naturally uncooperative, an argument frequently employed to intimidate and convince people that it’s futile to seek a better society for everyone. Stripped of yet another rationalization for empire, predatory behavior on behalf of the capitalist mode of production becomes ever more transparent. And learning about the conscious suppression of this essential core of our nature should beg additional troubling questions about the motives behind other elite-generated ideologies, from neo-liberalism to the “war on terror.”

Second, there are implications for students and teachers. Cultivating empathic engagement through education remains a poorly understood enterprise. College students, for example, may hear the ‘cry of the people’ but the moral sound waves are muted as they pass through a series of powerful cultural baffles. Williams (1986, p. 143) notes that “While they may be models of compassion and generosity to those in their immediate circles, many of our students today have a blind spot for their responsibilities in the socio-political order. In the traditional vocabulary they are strong on charity but weak on justice.”

Nussbaum (1997) defends American liberal education’s record at cultivating an empathic imagination. She claims that understanding the lives of strangers and achieving cosmopolitan global citizenship can be realized through the arts and literary humanities. There is little solid evidence to substantiate this optimism and my own take on empathy-enhancing practices within U.S. colleges and universities is considerably less sanguine. Nussbaum’s episodic examples of stepping into the mental shoes of other people are rarely accompanied by plausible answers as why these people may be lacking shoes—or decent jobs, minimum healthcare, and long-life expectancy. The space within educational settings has been egregiously underutilized, in part, because we don’t know enough about propitious interstices where critical pedagogy could make a difference. Arguably the most serious barrier is the cynical, even despairing doubt about the existence of a moral instinct for empathy. The new research puts this doubt to rest and rightly shifts the emphasis to strategies for cultivating empathy and identifying with “the other.” Joining the affective and cognitive dimensions of empathy may require risky forms of radical pedagogy (Olson, 2006, 2007a; Gallo, 1989). An intriguing implication is that the perceived character of the teacher being “mirrored” may be at least as important as the message being imparted. Evidence produced from a game situation with medical students strongly hints that empathic responses can be significantly enhanced by increased knowledge about the specific needs of others—in this case, the elderly (Varkey, 2006). Presumably, limited prior experiences would affect one’s emotional response. Again, this is a political culture/information acquisition issue that demands further study.

Third, for many people the basic incompatibility between global capitalism and the lived expression of moral sentiments may become obvious for the first time. (Olson, 2006, 2005) For example, the failure to engage this moral sentiment has radical implications, not the least being consequences for the planet. Within the next 100 years, one-half of all species now living will be extinct. Great apes, polar bears, tigers and elephants are all on the road to extinction due to

rapacious growth, habitat destruction, and poaching. These human activities, not random extinction, will be the undoing of millions of years of evolution (Purvis, 2000). As Leakey puts it, “Whatever way you look at it, we’re destroying the Earth at a rate comparable with the impact of a giant asteroid slamming into the planet. . . .” And researchers at McGill University have shown that economic inequality is linked to high rates of biodiversity loss. The authors suggest that economic reforms may be the prerequisite to saving the richness of the ecosystem and urge that “. . . if we can learn to share the economic resources more fairly with fellow members of our own species, it may help to share ecological resources with our fellow species.” (Mikkelsen, 2007, p. 5)

While one hesitates imputing too much transformative potential to this emotional capacity, there is nothing inconsistent about drawing more attention to inter-species empathy and eco-empathy. The latter may be essential for the protection of biotic communities. Decety and Lamm (2006, p. 4) remind us that “. . . one of the most striking aspects of human empathy is that it can be felt for virtually any target, even targets of a different species.”

This was foreshadowed at least fifty years ago when Paul Mattick, writing about Kropotkin’s notion of mutual aid, noted that “. . . For a long time, however, survival in the animal world has not depended upon the practice of either mutual aid or competition but has been determined by the decisions of men as to which species should live and thrive and which should be exterminated. . . . [W]herever man rules, the “laws of nature” with regard to animal life cease to exist.” This applies no less to humans and Mattick rightly observed that the demands of capital accumulation and capitalist social relations override and preclude mutual aid. As such, neuroscience findings are welcome and necessary but insufficient in themselves. For empathy to flourish requires the elimination of class relations (Mattick, 1956, pp. 2-3).

Fourth, equally alarming for elites, awareness of this reality contains the potential to encourage “destabilizing” but humanity-affirming cosmopolitan attitudes toward the faceless “other,” both here and abroad. In de Waal’s apt words, “Empathy can override every rule about how to treat others.” (de Waal, 2005, p. 9) Amin (2003), for example, proposes that the new Europe be reframed by an ethos of empathy and engagement with the stranger as its core value. The diminution of empathy within the culture reduces pro-social behavior and social cohesiveness. Given the dangerous centrifugal forces of ethno-nationalism and xenophobia, nothing less than this unifying motif will suffice, while providing space for a yet undefined Europe, a people to come.

Finally, as de Waal observes, “If we could manage to see people on other continents as part of us, drawing them into our circle of reciprocity and empathy, we would be building upon rather than going against our nature.” (de Waal, 2005, p. 9) An ethos of empathy is an essential part of what it means to be human and empathically impaired societies, societies that fail to gratify this need should be found wanting. We’ve been systematically denied a deeper and more fulfilling engagement with this moral sentiment. I would argue that the tremendous amount of deception and fraud expended on behalf of overriding empathy is a cause for hope and cautious optimism. Paradoxically, the relative absence of widespread empathic behavior is in fact a searing tribute to its potentially subversive power.

Is it too much to hope that we're on the verge of discovering a scientifically based, Archimedean moral point from which to lever public discourse toward an appreciation of our true nature, which in turn might release powerful emancipatory forces?

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Gary Olson, Ph.D. chairs the Political Science Department at Moravian College in Bethlehem, PA. He may be reached at [olson@moravian.edu](mailto:olson@moravian.edu).

## References

- Albert, M. (n.d.) "Universal Grammar and Linguistics," [www.zmag.org/Zmag/articles](http://www.zmag.org/Zmag/articles)
- Allot, R. (1992) "Evolutionary Aspects of Love and Empathy," *Journal of Social and Evolutionary Systems*, 15, 4, 353-370.
- Amin, A. (2003) "From ethnicity to empathy: a new idea of Europe," [www.opendemocracy.net/debates/articles/24-7-2004](http://www.opendemocracy.net/debates/articles/24-7-2004).
- Barber, N. (2004) *Kindness in a Cruel World*. New York: Pantheon, pp. 203-231.
- Blair, J., Mitchell, D., and Blair, K. (2005) *The Psychopath: Emotion and The Brain*. Oxford, UK: Blackwell.
- Blakeslee, S. (2006) "Cells That Read Minds," *The New York Times*, 1/10/06.
- Brooks, D. (2007) "Human Nature Redux," *The New York Times*, 2/16/2007.
- Carey, B. (2006) "Messages from Mouse to Mouse: I feel your pain," *New York Times*, July 4.
- Carlisle, J. (2007) "Empathy, Mirror-Neurons, Technology and War." [www.associatedcontent.com/article/474799/empathy\\_mirrorneuronstechnology-and.html](http://www.associatedcontent.com/article/474799/empathy_mirrorneuronstechnology-and.html).
- Chomsky, N. (1971) Human Nature: Justice versus Power, Noam Chomsky debates Michel Foucault. [www.chomsky.info/debates](http://www.chomsky.info/debates)
- Chomsky, N. (1988) *Language and Problems of Knowledge: The Managua Lectures*. Cambridge, MA: MIT Press.
- Chomsky, N. (2002) *Understanding Power: The Indispensable Chomsky*. New York: The New Press.
- Chomsky, N. (2005a) "What We Know," *Boston Review* (Summer)
- Chomsky, N. (2005b) "Universals of Human Nature," *Psychotherapy and Psychomatics*, 74.
- Chomsky, N. and Herman, E. (1988) *Manufacturing Consent: The Political Economy of the Mass Media*. New York: Pantheon.
- Cohen, J. and Rogers, J. (1991) "Knowledge, Morality and Hope: The Social Thought of Noam Chomsky," *New Left Review*, 187, pp. 5-27.
- Connolly, W. (2002) *Neuropolitics*. Minneapolis: University of Minnesota Press.

- D'Addelfico, G. (n.d.) *The Educative Value of Empathy with the Capability Approach*, [www.capabilityapproach.com/pubs/13dAddelfic](http://www.capabilityapproach.com/pubs/13dAddelfic).
- Decety, J. (2006) "Mirrored Emotion," Interview, *The University of Chicago Magazine*, 94, 4, pp. 1-9.
- Decety, J. and Lamm, C. (2006) "Human Empathy through the Lense of Social Neuroscience," *The Scientific World Journal*, 6, September, 1-25.
- de Waal, F.B.M. (1996a) *Good Natured: The Origins of Right and Wrong in Primates and Other Animals*. Cambridge, MA: Harvard University Press.
- de Waal, F.B.M. (1996b) *Emory Magazine*, Summer: In Brief.
- de Waal, F.B.M. (2006) *Primates and Philosophers: How Morality Evolved*. Princeton, NJ: Princeton University Press.
- de Waal, F.B.M. (2005-06) "The Evolution of Empathy," *Greater Good*, Fall-Winter, pp. 8-9.
- de Waal, F.B.M. (2007) "The 'Russian Doll' Model of Empathy and Imitation," in S. Braten (Ed.) (2007) *On Being Moved*. Amsterdam: John Benjamins Publishing Company.
- Eagleton, T. (2007) *The Meaning of Life*. New York: Oxford University Press
- Editorial (2007) "Evolution and the Brain," *Nature*, 447, 7146, 14 June.
- Egan, D. (2007) "How Horror Sparks Our Brains," [theyee.ca/News/2007/03/02MirrorNeurons](http://theyee.ca/News/2007/03/02MirrorNeurons).
- Farmer, P. (2003) *Pathologies of Power: Health, Human Rights, and the New War on the Poor*. Berkeley, CA: University of California Press.
- Fromm, E. (1956) *The Art of Loving*. New York: Harper & Row.
- Gallese, V., Fadiga, L., Fogassi., and Rizzolatti, G. (1996) "Action recognition in the premotor cortex," *Brain*, 119: 593-609.
- Gallo, D. (1989) "Educating for Empathy, Reason, and Imagination," *Journal of Creative Behavior*, 23, 2, pp. 98-115.
- Ganguli, I. (2006) "Mice show evidence of empathy," *The Scientist*, June 30, <http://www.the-scientist.com/news/display/23764>.
- Gintis, H., Bowles, S., Boyd, R., and Fehr, E. (2004) "Explaining altruistic behavior in humans," *Evolution and Human Behavior*, 24, pp. 153-172.

- Gintis, H., Bowles, S., Boyd, R., and Fehr, E. (2005) *Moral Sentiments and Material Interests*. Cambridge, MA: MIT Press.
- Goldschmidt, W. (1999) "Causation to motivation: the margin between biology and culture" [www.sscnet.ucla.edu/anthro/bec/papers/Goldschmidt April 12](http://www.sscnet.ucla.edu/anthro/bec/papers/Goldschmidt%20April%2012).
- Goleman, Daniel. (2006) *Social Intelligence*. New York: Bantam.
- Gouskos, C. (2006) "Empathy and Conditioning Violence," [www.gamespot.com/features/6143438/index](http://www.gamespot.com/features/6143438/index).
- Grafman, J. (2007) in Vedantam, S., "If It Feels to be Good, It Might Be Only Natural," [www.washingtonpost.com/wp-dyn/content/article/2007/05/27](http://www.washingtonpost.com/wp-dyn/content/article/2007/05/27).
- Gramsci, A. (1971) *Selections from the Prison Notebooks*. New York: International Publishers.
- Green, J. (2007) in Vedantam, S., "If It Feels to be Good, It Might Be Only Natural," [www.washingtonpost.com/wp-dyn/content/article/2007/05/27](http://www.washingtonpost.com/wp-dyn/content/article/2007/05/27).
- Grossman, D. (1996) *On Killing: The Psychological Cost of Learning to Kill in War and Society*. Boston: Little, Brown and Company.
- Halpern, J. (1993) "Empathy: Using Resonance Emotions in the Service of Curiosity," in Howard M. Spiro et al, eds., *Empathy and the Practice of Medicine*. New Haven: Yale University Press.
- Hauser, M. D. (2006a) *Moral Minds*, New York: Harper Collins.
- Hauser, M. D. (2006b) "The Bookshelf Talks with Marc Hauser," *American Scientist*, [www.americanscientist.org](http://www.americanscientist.org)
- Iacoboni, M. (2007) "Neuroscience Will Change Society," EDGE, The World Question Center. <http://www.edge.org/q2007pp14-15>
- Iacoboni, M. (2008, proofs) *Mirroring People*. New York: Farrar, Strauss and Giroux.
- Jackson, P. L., Meltzoff, A. N., and Decety, J. (2004) "How do we perceive the pain of others?" *Neuroimage*, 125, pp. 5-9.
- Jackson, P. L., Rainville, P., and Decety, J. (2006) "To what extent do we share the pain of others?" *PAIN*, 125, pp. 5-9.
- Jensen, R. (3/20/02) "The Politics of Pain and Pleasure." *Counterpunch*.
- Katz, L. D., ed. (2000) *Evolutionary Origins of Morality*. Bowling Green, OH: Imprint Academic.

- Kelleher, W.J. (2007) "Critique of Steven Pinker's Blank Slate," <http://www.empathicscience.org/pinker.html>
- Kidder, T. (2003) *Mountains Beyond Mountains*. New York: Random.
- Killen, M. and Cords, M. (2002) "Prince Kropotkin's Ghost," *American Scientist*, 90, 3, p. 208.
- Koenigs, M. et al. (2007) "Damage to the Prefrontal Cortex Increases Utilitarian Moral Judgments," *Nature*, Apr 19 446 (7138): 908-11.
- Kropotkin, P. (1972) *Mutual Aid*. Boston: Extending Horizons; originally (1902), London: Heinemann.
- Lakoff, G. (2001) "Metaphors of Terror," [www.press.uchicago.edu/News/911lakoff/html](http://www.press.uchicago.edu/News/911lakoff/html)
- Lakoff, G. (2005) "On Theology and Politics," [www.rockridgeinstitute.org/research/lakoff/TheologyAndPolitics.pdf](http://www.rockridgeinstitute.org/research/lakoff/TheologyAndPolitics.pdf)
- Lamm, C., Batson, C., and Decety, J. (2007) "The Neural Substrate of Human Empathy: Effects of Perspective-taking and Cognitive Appraisal," *Journal of Cognitive Neural Science*, 19: 1, pp. 42-58.
- Leakey, R. and Lewin, R. (1978) *People of the Lake*. New York: Doubleday.
- Mattick, P. (1956) "Kropotkin on Mutual Aid – Review," *Western Socialist*, Boston (January-February) in [www.marxists.org/archive/mattick-paul/1956/kropotkin.htm](http://www.marxists.org/archive/mattick-paul/1956/kropotkin.htm)
- May, T. (2006) "Terms of Empathy," (Dana Foundation) [www.dana.org/news/brainwork/detail.aspx](http://www.dana.org/news/brainwork/detail.aspx)
- Mikkelsen, G. M., Gonzalez, A., and Peterson, G. D. (2007) "Economic Inequality Predicts Biodiversity Loss," *PLoS ONE* 2 (5):e444.doi:10.1371/journal.pone.0000444.
- Miller, B., Seeley, P., Mychack P., Rosen, H., Mena, I., and Boone, K. (2001) "Neuroautonomy of the self: Evidence from patients with frontotemporal dementia," *Neurology*, 57, 5, pp. 817-821.
- Mogil, J.S. (2006) "Social Modulation of Pain as Evidence for Empathy in Mice," *Science*, 312, 5782, pp. 1967-1970.
- Molnar-Szakacs, I., Wu, A., Robles, F., and Iacoboni, M. (2007) "Do You See What I Mean? Corticospinal Excitability During Observation of Culture Specific Gestures," *PLoS ONE*, 2 (7): e626, doi:10.1371/journal.pone.0000626.



- New Scientist (2007) “‘Altruistic’ chimps acted for the benefit of others,” NewScientist.com. 25 June.
- Nussbaum, M. (1997) *Cultivating Humanity*. Cambridge: Harvard University Press.
- Nussbaum, M. (2001) *Upheavals of Thought: The Intelligence of Emotions*. Cambridge, UK: Cambridge University Press.
- Nussbaum, M. (2006) *Frontiers of Justice*. Cambridge, MA: The Belknap Press of Harvard University.
- Olson, G. (2005) “Scapegoating Human Nature,” *ZNet*, 11/30/05.
- Olson, G. (2006) “Graduates face choice between love or ‘selling out.’” *ZNet Commentary*.
- Olson, G. (2007a, 1987) “Execution Class,” *Z Magazine*, 20, 3, March, 2007.
- Olson, G. (2007b) “Neuroscience and Moral Politics: Chomsky’s Intellectual Progeny,” <http://www.identitytheory.com/social/olson> neuro.php
- Parenti, M. (2006) *The Culture Struggle*. NY: Seven Stories Press.
- Pierce, J. (2007) “Mice in the Sink: On the Expression of Empathy in Animals.” [www.environmentalphilosophy.org/ISEEIAEPpapers/2007/Pierce.pdf](http://www.environmentalphilosophy.org/ISEEIAEPpapers/2007/Pierce.pdf).
- Pinker, S. (2002) *The Blank Slate*. New York: Viking.
- Pinker, S. (2008) “What Makes Us Want to Be Good?” *The New York Times*, 1/12/08.
- Preston, S. and de Waal, F.B.M. (2002) “Empathy: Its ultimate and proximate bases,” *Behavior and Brain Sciences*, 25, pp. 1-72.
- Preston, S. (2006-2007) “Averting the Tragedy of the Commons,” *SHIFT*, 13, pp. 25-28.
- Preston, S., Bechara, A., Damasio, H., Grabowski, T. J., Stansfield, S. M., and Damasio, A. R. (in press) “The Neural Substrates of Cognitive Empathy.” *Social Neuroscience*.
- Purvis, A., Agapow, P-M., Gittleman, J., and Mace, G. (2000) “Non-random extinction and loss of evolutionary history,” *Science*, 288, 5464, pp. 328-330.
- Ramachandran, V. (2000) “Mirror Neurons and Imitation Learning as the Driving Force Behind ‘the Great Leap Forward’ in Human Evolution,” *Edge*, 69, June 29, 2000, [www.edge.org/3rdculture/ramachandran/ramachandranindex.html](http://www.edge.org/3rdculture/ramachandran/ramachandranindex.html).
- Ramachandran, V. (2006) “Mirror Neurons and the Brain in the Vat,” *Edge*, January 10, 2006, [www.edge.org/3rdculture/ramachandran06/Ramachandran06index.html+jam](http://www.edge.org/3rdculture/ramachandran06/Ramachandran06index.html+jam).

- Rediker, M. (2007) *The Slave Ship*. New York: Viking.
- Rizzolatti, G., Fadiga, L., Gallea, V., and Fogassi, L. (1996) "Premotor cortex and the recognition of motor actions," *Cognitive Brain Research*, 3, pp. 131-141.
- Rizzolatti, G. and Craighero, L. (2006) "Mirror neuron: a neurological approach to empathy," [www.robotcub.org/misc/review 2/06](http://www.robotcub.org/misc/review_2/06) Rizzolatti Craighero.pdf
- Slack, G. (2007) "I feel your pain," [www.Salon.com](http://www.Salon.com) 2007/11/05.
- Solomon, N. (4/17/03) "Media and the Politics of Empathy," *Media Beat*.
- Staub, Ervin (2002) In Davidson, R.J. and Harrington, A. (Eds.) *Visions of Compassion*. New York: Oxford University Press.
- Stein, E. (1989) *On the problem of empathy*. Washington: ICS Publications. (Original work published in 1917) as found in D'Addelfico (n.d.).
- Thomas, E. (2006) "Empathetic" [www.temple.edu/tyler/empathetic/essay.html](http://www.temple.edu/tyler/empathetic/essay.html)
- Trivers, R. (1971) "The evolution of reciprocal altruism," *Quarterly Review of Biology*, 46, pp. 35-57.
- Varkey, P., Chutka, D.S. and Lesnick, T.G. (2006) "The aging game: improving medical students' attitudes toward caring for the elderly," *J. Am. Med. Directors Assoc.* 7, 224-229 in Decety, J. and Lamm, C. (2006).
- Warneken, F. and Tomasello, M. (2006) "Altruistic Helping in Human Infants and Young Chimpanzees," *Science*, 311, No. 5765, pp. 1301-1303.
- Williams, O. (1986) in Johnson, D. (Ed.) *Justice and Peace Education*. New York: Orbis.
- Wilson, A.O. (1978) *On Human Nature*. Cambridge: Harvard University Press