

THE EFFICIENT COGNITIVE PROCESS OF MORAL  
REALISM AND ITS CONNECTION TO EVOLUTIONARY  
PSYCHOLOGY AND NEUROBIOLOGY

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Two things fill the mind with ever new and increasing admiration and awe, the oftener and more steadily we reflect on them, the starry heavens above and the moral law within.

Immanuel Kant

The human moral sense, it will be argued to be better understood, requires some reference to its evolutionary history and its neurobiological foundations. Morality is included in what gives meaning to our lives as humans. Moral goodness is what gives us an idea of what we should be to be worthy as humans. We demand it of our politicians, seek it out in our acquaintances, and hope to instill it in our children. It is integral to our religions and is bigger than any of us and outside of us. The rules that morality invokes are said to be universal and principled. Rape and murder are evil and to be outlawed objectively and universally. It is considered allowable to punish one who breaks a moral rule; moreover it is usually thought wrong not to do so. The focus on which behaviors are moral, and which are immoral shifts slightly with the sands of the popular culture. Smoking has recently come to be seen as a moral issue. Smoking was to be avoided for health reasons: one had a moral responsibility for self preservation and to maintain one's health for family members. With the discovery of the ill effects of second hand smoke, smoking began to be seen as more and more of a moral issue; images of smoking are to be excluded from films; floors in hotels and entire buildings are now considered "smoke free" zones; smokers are to be kept away from the rest of people. Punitive damages are sought from the suppliers of tobacco products. In the present culture, some former moral failings are now seen as amoral or "lifestyle choices": divorce, single parenthood, illegitimacy, marijuana use, and homosexuality. The popular language has been sanitized. "Bowery Bums" and "Hoboes" are now the homeless; drug addiction is a disease; syphilis is now a "sexually transmitted infection."

Jean Piaget and Lawrence Kohlberg saw it to be the province of schools to teach moral reasoning. Proponents of this approach were relieved that this type of education was not indoctrination but an effort to document the lines of reasoning. Human morality was systematized into stages. Two of Kohlberg's stages were combined over time. Criticism that the higher level of moral reasoning seemed more Democratic than Republican was addressed. Moral reasoning was considered as levels of rights and justice and ethical distinctions. It came to be seen as the pursuit of abstraction for men or sophistication in thinking. Research done by Rest and others showed that philosophy majors had a higher moral level score than seminarians. One of Kohlberg's students, Carol Gilligan dedicated her thesis to Kohlberg and went on to show that women operate less often from the "bottom line" approaches of moral abstraction than men and respond to the reconciliation of twin principles of responsibility and caring. Recent psychological work of Jonathan Haidt and others point to the fact that people do not generally engage in moral reasoning, but in moral rationalization: they begin with the conclusion, triggered by a primitive emotion and then work backward to a plausible justification. Reason is held to enter the picture after a moral decision is made. Instant life-or-death decisions are made first. "Human behavior derives above all from fast, automated, emotional judgments and only secondarily from slower conscious processes." (Frans de Waal) Disgust about anything often just makes us mean.

A thought experiment constructed by the philosophers, Phillipa Foot and Judith Jarvis Thompson called the Trolley problem highlights the distinction between convictions and justifications. A runaway train with no one on board is heading into a group of five people down the track. The people can be saved if a switch is thrown that will divert the train onto a siding which will kill one person working on the spur. Is it moral to throw the switch, killing one person to save five? Almost everyone says "yes." The same train and the same five people are in trouble and you are on a bridge high over the track. You can save the people by pushing a large man off the bridge. You, yourself are too small to stop the train. Both dilemmas present the option of saving five lives by sacrificing one. The standard of the greatest good for the greatest number would render these morally equivalent options. Most people would pull the switch in the first

dilemma; they would not throw the man in the second in a Web-based experiment involving 200,000 people from over a hundred countries who shared their verdicts in a design of psychologists Fiery Cushman and Liane Young and the biologist Marc Hauser. In this research, the college sophomore was not over-represented. Children, psychopaths, men women, Blacks and Whites, teenagers, old people, Hindus, Muslims, Buddhists Christians, Jews, and atheists, the educated and the uneducated, all were polled. The conclusion “most people” involved most people. These thought experiments were originally designed to assess agency and responsibility. Evolution may have instilled in us revulsion to man-handling an innocent. This evolutionary explanation may be the basis for helping us understand ideas about agency and responsibility in a realistic setting. The world was shocked when the first pictures of famine hit the television screen in the 1980’s. Networks pulled back on these pictures at first after the initial revulsion but later on showed these routinely as the audience became acclimatized to seeing starving children with distended stomachs and flies arching around their heads. In a similar vein most people would stop to aid a solitary stranger bleeding at the side of the road. The same intuition is not applied to the mail solicitation we receive asking us to care for the homeless, save starving children, cure preventable diseases for 10, 20, or more dollars. Brain areas respond to dilemmas that put the reader “up close and personal” to the plight of an unfortunate as these areas deal with emotion and social cognition. Impersonal direct mail appeals are less likely to involve the same brain areas. Evolution suggests that natural selection does favor altruistic instinct under the right conditions and that is how a neuroscientist thinks altruism came to be. Altruistic instincts may reflect the environment from which they evolved rather than our present environment. If we are able to save someone we see directly, we are inclined to do so. Campaigns for those across the world arouse our brain less.

The followings of trolleyology were substantiated neurally. Joshua Greene and cognitive neuroscientist Jonathan Cohen with his colleagues used a functional MRI to find signs of conflict between emotional areas of the brain (these would resist harming someone) and rational areas (these would calculate the greater number of saved lives.) Emotions concerning other people involve the medial frontal lobes; the dorsolateral frontal lobes are involved in mental

computation; the anterior cingulate cortex registers a conflict between an urge from one part of the brain and advice coming from another section. When people were reasoning out a “hands-off dilemma” or switching the train to the spur with the single worker, only the area involved in rational calculation lit up.

Evolutionary psychology (how evolutionary theory can be studied to see how it influences behavior) may have its origin in Darwin (1872) who attempted to demonstrate that there is nothing unique about human facial expressions; these were remarkably consistent across cultures and consistently continuous between humans and other animals. The field, itself has evolved reaching the level of becoming a separate category as a descriptor in Psych-Info in the year 2003. Philosophers may be left to wonder if this evolutionary crawl may be set out to take over their field. Science may be set out to subsume the province of philosophy. Darwin’s work was neglected for years because of the commitment of social scientists to cultural determinism. A return to some of the implications may now be necessary. Happiness is our most distinctive facial expression; fear and surprise are sometimes harder to disentangle. Contempt and pain appear to be separate and are more recognizable. All the chief expressions exhibited by man are seen to be the same throughout the world. This very argument points to a single near human parent stock from which all the races descended – an instance of psychic unity of humankind.

The idea that instinct is antithetical to learning has been the single greatest obstacle to applying evolutionary theory to psychology. There may have been a negative reaction to Freud’s reliance on the explanatory power of various instincts. There is a tendency to quickly reach for an explanation to explain what is difficult to explain and scientists shifted to cultural rather than evolutionary research as an explanation of various phenomena. The urge, wish, or choice to shop is cultural probably not instinctual. Eating a pet rabbit with a name is considered repulsive; this may be instinctual.

Increasing learning ability in moral education, for example, is not a matter of escaping from instinctive control; it is a process of developing a large and more powerful array of learning and reasoning processes. Learning and reasoning depend on a battery of specialized

innate modules that structure information processing in different cognitive domains. One of the best examples of this is the recognition of individual faces and facial expression of emotion. The mind is now seen to be less plastic and does have an innate structure. Concepts are like a Lego set not like modeling clay. We can not construct thoughts in any possible shape; there is a selection of different basic processes that can fit together only in certain ways and not others. Each “Lego piece” is a computational device with its own rules of association, combination and exclusion.

Human moral universals (Brown) include moral concepts and emotions and the basic difference between right and wrong, empathy, fairness, generosity, rights and obligations, murder and violence, redress of wrongs sanctions for wrongs against the community, shame, and taboos. While there may not be a specific moral gene, certain common features abound. Conscientiousness and agreeableness are traits found in identical twins even when reared apart. “Antisocial personality disorder” is a serious diagnosis evident in some form from an early age. Bullying often follows the practice of animal torture. Lying without remorse, joy at the pain of others; and stealing are considered predictors that when further developed, may lead to a bad adult outcome. Our moral sense though evolved by evolution and developed by culture to overvalue self, kin and tribe can end us on the road to community as we reason to include a larger and larger circle of our fellow humans. It is for explanations like these that better understanding of the evolutionary track and the neurobiological substrate would add to our understanding of morality. Stephen Jay Gould asserted that the most evolutionary studies can hope to do is set out the conditions under which certain morals or values came to be. It is outside the province of evolutionary biology to rule on the validity of these values. The workings of human emotions and cognitions provide a wealth of resources that can inform in a practical way moral reasoning about what is good or right to do. Science and subjective experience may fuse not into a collective hallucination but into persuasive hypotheses as in the following examples:

- 1 Two parties are subjectively better off in the zero-sum game if they both act in a non-selfish way versus each one acting selfishly.

- 2 Morality can not simply mean what is best for one reasoner. If I ask you to do something for me, I need to imply I would do the same to you. My interest in time will switch to become yours. The interchangeability of perspectives is in the Golden rule, the social contract of Rousseau, and even implicit in Kohlberg's stages of morality. In a community very different emotions cause people to love companions because interests are yoked or it seems they are members of a family, fraternal brothers in the fire department, best friends since primary school and members of the same group where other bonds prevail.

Culture selects which of the basic themes will prevail. As an example, does reciprocity trump authority?

- 1 What disloyal man would not give a high paying job in his company to anyone else besides his brother?
- 2 It is not a problem if someone has enough money to buy oneself out of the draft for military service.
- 3 People with money should be able to pay for the adoption they want.

Haidt counts 5 universal moral themes: the impulse to avoid harm, fairness, community (group pecking order of dominance and appeasement and loyalty), authority and purity (disgust at potential disease, defilement and incest) as primary moral colors that have an evolutionary basis. The impulse to be altruistic rests when the favor helps the recipient more than it costs the giver with the expectation that fortune will return the compliment soon if the "shoe gets on the other foot". Sympathy prompts a person to make the first offer to someone in need. Anger results if a cheater or a taker accepts without intention of reciprocity, to refuse help in the future, or to cut the person off. Gratitude is a gift or reward for past favors. Guilt causes a cheater to change his ways, make amends for the wrong and to behave better in the future.

David Hume insisted that moral philosophy had to be grounded in facts about human nature available from history and psychology. Truth is not arrived at by a vote. Nor is it to be understood as that which the experts will ultimately agree upon (Ambrose

Bierce). Ethics is based on how people usually think. Norms when understood properly are within the realms for most humans to obey psychologically and thus, real within the realms of the possible. The pursuit of the good and the living of a virtuous life require virtues of kindness and honesty. A good society should aspire to cultivate these virtues in its citizens. Character Education is necessary, but not enough to insure that people will behave well in bad situations.

Humans are often heroic and risk their lives for other as evidenced by firemen going into the World Trade Center. The men who tried to sneak into lifeboats dressed as women, as the Titanic sank (in film accounts, if not in reality) were treated disparagingly. How does self-sacrifice evolve? Primal impulses similar to lust or greed are just aimed in the other direction: holding a door open, rushing to help someone who has fallen, and stopping at the scene of a car accident. Civilization is not just a wallpaper covering a sea of savage id impulses. Altruism is extreme self sacrifice and also built-in.

To the biologist social behaviors are seen as one of the precursors of morality. If morality grew out of behavioral rules shaped by evolution; it is the tasks of biologists, not philosophers or theologians to say what the rules are. It is unlikely that moral philosophers will allow the annexation of their turf without some opposition. The book *Sociobiology* by Edward O Wilson written in 1975 may be credited as the start of the suggestion that ethics be moved from the domain of the philosopher and temporarily assigned to the province of biology or biologized. An analogy to language acquisition was drawn. It was Noam Chomsky who posited that we are born with a “universal grammar” that forces us to analyze speech in terms of structure. The “Language Acquisition Device” was the useful explanatory vehicle to explain the origin of language, or how we learn grammatical structure with no conscious awareness of the rules in play. The theoretical difficulties of behaviorism in explaining language were sidestepped. Before the LAD, the behavioral explanation for language acquisition centered on a randomly emitted correct language utterance that would be reinforced and strengthened. No provision was made in behaviorism for the fact that the average child was capable of generating sensible sentences in agreement with a Basic English grammar book—some sentences may have never been uttered before. The exceptions or irregular verbs were put there to

trip up the child and the non-English speaker. The child assumed incorrectly that there was a set of rules that were never broken in the generation of English. Piaget had long argued that the response was there first. Marc Hauser proposed in *Moral Minds* that the brain has a similar wired mechanism that allows for the acquisition of moral rules similar to a universal moral grammar book, where actions may be analyzed in terms of moral structure with just as little awareness. Dr de Waal of the Living links Center at Emory University presents a more moderate position and argues that social animals have had to restrain the range of their group behaviors for community living to be more manageable. Humans have inherited some of these constraints and these form a set of behaviors that helped form human morality. These emotional building blocks are central for monkey society and eventually human morality. Great Apes and humans seem to have an ability to console losers after an intense fight with a rival. This level of empathy has been located. Morality can not be far behind. Frans de Waal selects concern for others and the understanding of social rules center to how we should be treated. People and primates overlap at this “lower level.” Patterns of behaviors we share with our primates’ ancestors are relevant to our ethical decisions. Empathy is required for social living. Every species of ape and monkey has its own protocol for reconciliation after fight. “Making up” is for the good of the community; it is not for individual good. Empathy, the ability to follow social rules once learned, peacemaking, and emotional states are also present in human experience, it is reasonable to expect that they exist in an earlier point in the evolutionary continuum. Human morality grew out of primate social behavior but with two major additions. Moral codes are reinforced with rewards, censure and public standing. Judgment and reasoning are added by humans and are not seen in the primate world. Natural selection favors organisms that survive and reproduce. Life choices take the interest of the whole community into account.

Religion is seen by O’Murchu as a recent addition in the last 5000 years to the previous 40,000 years of spirituality. Morality was there first as humans moved away from their primate ancestors. Religion appears to be connected to social life and the establishment of rules and to giving a narrative to follow- that is what religion really do. Human morality may have developed as a response of banding together against adversaries with moral restraints applied to the “in

group”, the “we”, or “us”; not to the outsiders, “them”. The irony of this development is that it is tied to warfare. Our noblest evolution is in response to our vilest tendency to make war. Sympathy leads us to decide who help and why and when. The examples from the field of trolleyology can help somewhat. Most people will not push a large person off a bridge to save others. Direct hands-on harm to another can be objected to. David Hume taught that moral judgments follow the emotions. Kant argued that morality must be based on reason. Reason is like a deep escalator once we step on it, we do not know where it takes us until we reach the higher end. The neuroscientific understanding of our morality into what now “is” can be understood. Biology helps us grasp why we hold a belief, it does not help us understand the ethics. Science deals with what is the case; ethics deals with what ought to be. The Humean belief is that one cannot derive an “ought” from an “is.” If a belief is held, the question of if we ought to continue to hold it remains. The history of moral thought needs to be taken into account as we review how we came from mistaking moral properties for natural properties (the naturalistic fallacy) Psychology has hinted that that which is natural is not always right or good. Principles of natural science may provide a foundation for normative ethics. The human moral nature, once better understood, will change our opinion of it and then it can serve as a basis for the ethics to which we aspire.

When directly confronted with need, we have emotional buttons pushed. Those out of sight remain out of our ethical mind. Moral judgment is after intuitive soul and emotional and therefore effortless after evolution. Moral judgment then needs to mature as we change ourselves better who we are, why we do what we do and what we ourselves ought to be.

It is always hazardous to combine information and theories from separate fields. The rules of operation of each discipline need be respected. When this does not happen explanations like the following appear...

In one episode of *Cheers*, Cliff is seated at the bar describing the Buffalo Theory to his buddy, Norm. I don't think I've ever heard the concept explained any better than this...

”Well you see, Norm, it is like this... A herd of Buffalo can only move as fast as the slowest buffalo. And when the herd is hunted, it is the slowest and weakest ones at the back that are killed first. This natural selection is good for the herd as a whole, because the general speed and health of the whole group keeps improving by the regular killing of the weakest members.

“In much the same way, the human brain can only operate as fast as the slowest brain cells. Now, as we know, excessive intake of alcohol kills brain cells. But naturally, it attacks the slowest and weakest brain cells first. In this way, regular consumption of beer eliminates the weaker brain cells, making the brain a faster and more efficient machine. “And that, Norm, is why you always feel smarter after a few beers.”