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Goodness by Execution. A Review of Richard Wrangham (2019), *The goodness paradox: the strange relationship between virtue and violence in human evolution* (New York: Pantheon Books)

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Humans are exceptionally low in reactive aggression and far more socially tolerant than other primate species, including even the relatively peaceable bonobos. At the same time, however, humans can be extraordinarily violent, especially against strangers, outsiders, and troublemakers, similar to behaviors observed in chimpanzees. In his latest book, *The goodness paradox*, Harvard primatologist Richard Wrangham makes the case that execution by male coalition members of troublemakers was a key selective force for self-domestication (especially low reactive aggression and greater social tolerance) in humans.

The goodness paradox brings together insights won from a lifetime studying chimpanzees, bonobos, and humans, and in which Wrangham frames aggression and violence in two forms: reactive and proactive. Reactive aggression is an emotional reaction based on anger or fear in response to an immediate provocation or threat. According to Wrangham, nearly 100% of female chimpanzees are physically assaulted by males, whereas a much smaller (but still regrettable) percentage of female humans experience physical violence from their partners. On the other hand, proactive aggression is aggression that is planned and premeditated, conducted deliberately and calmly, and often in coalitionary groups. Humans display the highest levels of proactive aggression of any species (p. 31).

Physical aggression occurs in humans at less than 1% of the frequency of its occurrence in chimpanzees (p. 30). Chimpanzees have been observed brutally and fatally attacking, as part of a group, lone chimpanzees from neighboring territories. Even bonobos, known for their tameness and peacefulness compared to chimpanzees, are far more aggressive than humans, on average. Among our closest great ape relatives, therefore, reactive aggression is common, although less so in bonobos than in chimpanzees. Wrangham reviews physiological and behavioral traits in chimpanzees that reflect this high level of reactive aggression, including sexual dimorphism in body size and canine length, alongside social groups dominated by alpha males. In bonobos, in contrast, there is lesser sexual dimorphism in body size and canine length and more peaceful social interactions in which females are socially prominent, a series of traits that Wrangham argues are products of a "domestication syndrome." Accordingly, bonobos, which are as closely related to humans as are chimpanzees, display much less reactive aggression than chimpanzees and are relatively peaceful and cooperative. Chimpanzees and bonobos, respectively, demonstrate the violence and virtuousness observed in modern humans. However, differences in the evolutionary trajectories of chimpanzees and bonobos may provide clues to humans' dual nature of violence and virtuousness.

In general, humans are a remarkably tolerant species. Humans are relatively nonaggressive in regards to violence within their group or local community; yet, humans also have the potential to inflict violence and to cause death on unimaginable scales during times of

war. Millions of people died as a result of the two world wars, and countless others have died in other wars throughout history. Wrangham implies that evolution by natural selection has made the killing of outgroup strangers sometimes pleasurable, because those that found greater enjoyment in killing tended to reap the benefits, such as the acquisition of status and resources. An evolutionary perspective therefore suggests a diabolical but adaptive logic for war and killing. There is thus a paradox involving our relatively nonviolent nature within our local groups and our extraordinarily violent nature in other contexts, such as during war with outgroups. According to Wrangham, our evolutionary history predisposes us to both high levels of proactive aggression and low levels of reactive aggression.

In building his argument, Wrangham introduces an artificial selection component to the evolution of human psychology. Russian scientist Dmitri Belyaev selected for tameness in silver foxes by breeding from those foxes that were less aggressive toward their human handlers. The result after just a handful of generations was silver foxes that looked and behaved like domesticated dogs. Wrangham argues that humans demonstrate the same phenomenon, a consequence of selection for tameness or docility over human evolutionary history. Humans have ruthlessly executed the most violent and troublemaking among them and have thus removed the genes that code for those behaviors. Over evolutionary time, the consequence is a reduction in reactive aggression and, eventually, self-domestication. Execution, combined with other selective forces, selected for sociality and cooperativeness in humans.

Wrangham's "execution hypothesis" thus proposes that "selection against aggressiveness and in favor of greater docility came from execution of the most antisocial individuals" (p. 149). Our ancestors included groups of cooperating adult males that eliminated bullies and other miscreants by killing them. This phenomenon transformed human societies from alpha-male dominated hierarchies to coalitions of egalitarian males that displayed little tolerance for aggressive and disruptive behavior. With an enhanced ability to gossip, plan, and coordinate attacks, egalitarian coalitions of men achieved an overwhelming power not available to individual alpha-males and other bullies. This selection for more docile humans occurred over thousands of generations, resulting in self-domesticated modern humans. As Wrangham reviews, every known ancient civilization deployed capital punishment against antisocial and violent troublemakers, as reflected in evidence of ancient remains. Capital punishment "was present in all the earliest civilizations, from Egyptian, Babylonian, Assyrian, Persian, Greek, and Roman to Indian, Chinese, Inca, and Aztec" (p. 167). Wrangham draws on ethnographic records to document that human societies have routinely executed tyrannical men. He later argues that although the death penalty once served a defensible purpose, it now should be abandoned and buried in the past because it undermines human dignity and targets the poor and disadvantaged.

Capital punishment, in short, kept reactive aggression in check through cooperative and proactive aggression. Coalitionary proactive aggression may have enabled humans to become more democratic, but it has not disabled our destructive capacity, or the rise of alpha-like groups. Capital punishment may have contributed to the development and successful rise of peaceful urban environments, morality, governments, and even religion-seeking tendencies. Wrangham also notes, however, that capital punishment, "enables the functioning of states, and gives us war, castes, the butchery of helpless adults, and many other forms of irresistible coercion."

It took *Homo sapiens* 300,000 years to travel out of Africa and colonize the world while successfully competing against Neanderthals and other early humans, who were physically stronger and better adapted to colder climates. However, evolution by natural selection provided modern humans with abilities including language and other cognitive skills. In killing

tyrannically violent and antisocial individuals over thousands of generations, humans consequently began to display characteristics of self-domestication syndrome.

According to Wrangham, humans' proactive aggression reduced their reactive aggression over evolutionary time. Intelligence and social cooperation cannot fully account for the docility and relative lack of reactive aggression in modern humans. Why did this happen to us and not other apes? Wrangham turns for an answer to language; the evolution of language allowed humans to engage in "coalitionary proactive behavior," whereby several individuals conspired to coordinate acts of violence or punishment against aggressive bullies. Among our ancestors, coalitionary proactive aggression had the effect of culling reactive aggressors, resulting in self-domestication and facilitating the evolution of our moral senses.

Wrangham reminds the reader that genes do not determine behavior, and that we are not prisoners of our biology or that which is "natural." Our evolutionary past and self-domestication can explain much of our moral behavior. In ancestral environments in which egalitarian male coalitions had the power to kill violent and tyrannical nonconformists, reputation became important. This emergence of social reputation explains the evolution of emotions such as guilt, embarrassment, and self-consciousness.

In *The goodness paradox,* Wrangham thus grapples with a fundamental question about human nature: Are we violent or virtuous? Because of different selection pressures on aggression within-group and between-groups, he concludes that we are both: we are one of the most altruistic species, while also one of the most violent species. The paradox, then, is that we can be remarkably peaceful and extraordinarily violent at different times and in different circumstances. Indeed, the human ability to build language-based coalitions to use violence can also be deployed to stop violence.

Wrangham contends that to understand this duality of human nature, we must incorporate selective breeding and self-domestication into our arguments built on evolution by natural selection. While inter-group warfare selected for more powerful and cooperative groups, the execution of tyrannical males by coalitions of egalitarian men selected for powerful in-group motives and altruism. In Wrangham's own words, "The egalitarianism found among all mobile hunter-gatherers indicates that the most aggressive individuals were eliminated. The ironic and disturbing conclusion is that egalitarianism, a system that appeals because of its lack of domineering behavior, is made possible by the most domineering behavior in the human arsenal" (p.177). Goodness by execution.