

The Better Angels of Our Nature: Why Violence Has Declined

by STEVEN PINKER (Professor of Psychology at Harvard University)

Summary

The book's title was taken from the ending of U.S. President Abraham Lincoln's first inaugural address. Pinker uses the phrase as a metaphor for four human motivations – empathy, self-control, the "moral sense", and reason – that, he writes, can "orient us away from violence and towards cooperation and altruism."^{[3]:xxv}

Pinker presents a large amount of data (and statistical analysis thereof) that, he argues, demonstrate that violence has been in decline over millennia and that the present is probably the most peaceful time in the history of the human species. The decline in violence, he argues, is enormous in magnitude, visible on both long and short time scales and found in many domains including military conflict, homicide, genocide, torture, criminal justice, and treatment of children, homosexuals, animals and racial and ethnic minorities. He stresses that "The decline, to be sure, has not been smooth; it has not brought violence down to zero; and it is not guaranteed to continue."^[4]

Pinker argues that the radical declines in violent behavior that he documents do not result from major changes in human biology or cognition. He specifically rejects the view that humans are necessarily violent, and thus have to undergo radical change in order to become more peaceable. However, Pinker also rejects what he regards as the simplistic nature versus nurture argument, which would imply that the radical change must therefore have come purely from external "(nurture)" sources. Instead, he argues: "The way to explain the decline of violence is to identify the changes in our cultural and material milieu that have given our peaceable motives the upper hand."^[4]

Pinker identifies five "historical forces" that have favored "our peaceable motives" and "have driven the multiple declines in violence".^[3] They are:

- The Leviathan – the rise of the modern nation-state and judiciary "with a monopoly on the legitimate use of force", which can defuse the [individual] temptation of exploitative attack, inhibit the impulse for revenge and circumvent self-serving biases.
- Commerce – the rise of technological progress [allowing] the ***exchange of goods and services*** over longer distances and larger groups of trading partners, so that other people become more valuable alive than dead and are less likely to become targets of demonization and dehumanization.
- Feminization – increasing respect for the interests and values of women.
- Cosmopolitanism – the rise of forces such as literacy, mobility, and mass media, which can prompt people to take the perspectives of people unlike themselves and to expand their circle of sympathy to embrace them.
- The Escalator of Reason – an ***intensifying application of knowledge and rationality to human affairs*** which can force people to recognize the futility of cycles of violence, to ramp down the privileging of their own interests over others and to reframe violence as a problem to be solved rather than a contest to be won."^{[3]:xxvi}

Outline

The first section of the book, chapters 2 through 7, seeks to demonstrate and to analyze historical trends related to declines of violence on different scales. Chapter 8 discusses five "inner demons" - psychological systems that can lead to violence. Chapter 9 examines four "better angels" or motives that can incline people away from violence. The last chapter examines the five historical forces listed above that have led to declines in violence.

Six trends of declining violence (Chapters 2 through 7)

1. The Pacification Process: Pinker describes this as the transition from the anarchy of hunting, gathering, and horticultural societies to the first agricultural civilizations with cities and governments, beginning around five thousand years ago which brought a reduction in the chronic raiding and feuding that characterized life in a state of nature and a more or less fivefold decrease in rates of violent death.^{[3]:xxiv}
2. The Civilizing Process: Pinker argues that "between the late Middle Ages and the 20th century, European countries saw a tenfold-to-fiftyfold decline in their rates of homicide." He attributes the idea of the Civilizing Process to the sociologist Norbert Elias, who attributed this surprising decline to the consolidation of a patchwork of feudal territories into large kingdoms with centralized authority and an infrastructure on commerce.^[3]
3. The Humanitarian Revolution – Pinker attributes this term and concept to the historian Lynn Hunt. He says this revolution "unfolded on the [shorter] scale of centuries and took off around the time of the *Age of Reason* and the European Enlightenment in the 17th and 18th centuries." Although, he also points to historical antecedents and to "parallels elsewhere in the world", he writes: "It saw the first organized movements to abolish slavery, dueling, judicial torture, superstitious killing, sadistic punishment, and cruelty to animals, together with the first stirrings of systematic pacifism."^[3]
4. The Long Peace: a term he attributes to the historian John Lewis Gaddis's *The Long Peace: Inquiries into the history of the Cold War*. Pinker states this fourth "major transition" took place after the end of World War II. During it, he says, the great powers, and the developed states in general, have stopped waging war on one another.^[3]
5. The New Peace: Pinker calls this trend "more tenuous", but since the end of the Cold War in 1989, organized conflicts of all kinds - civil wars, genocides, repression by autocratic governments, and terrorist attacks - have declined throughout the world.^[3]
6. The Rights Revolutions: The postwar period has seen, Pinker argues, "a growing revulsion against aggression on smaller scales, including violence against ethnic minorities, women, children, homosexuals, and animals. These spin-offs from the concept of human rights – civil rights, women's rights, children's rights, gay rights, and animal rights – were asserted in a cascade of movements from the late 1950s to the present day."^{[3]:xxiv-xxv}

Five inner demons (Chapter 8)

Pinker rejects what he calls the "Hydraulic Theory of Violence" – the idea "that humans harbor an inner drive toward aggression (a death instinct or thirst for blood), which builds up inside us and must periodically be discharged. Nothing could be further from contemporary scientific understanding of the psychology of violence." Instead, he argues, research suggests that "aggression is not a single motive, let alone a mounting urge. It is the output of several

psychological systems that differ in their environmental triggers, their internal logic, their neurological basis, and their social distribution." He examines five such systems:

1. *Predatory or Practical Violence*: violence deployed as a practical means to an end.^{[3]: 613}
2. *Dominance*: the urge for authority, prestige, glory, and power. Pinker argues that dominance motivations can occur within individuals and coalitions of racial, ethnic, religious, or national groups.^{[3]: 631}
3. *Revenge*: the moralistic urge toward retribution, punishment, and justice.^{[3]: 639}
4. *Sadism*: the deliberate infliction of pain for no purpose but to enjoy a person's suffering.^{[3]: 660}
5. *Ideology*: a shared belief system, usually involving a vision of utopia, that justifies unlimited violence in pursuit of unlimited good.^[3]

Four better angels (Chapter 9)

Pinker examines four motives that can orient [humans] away from violence and towards cooperation and altruism. He identifies:

1. *Empathy*: which prompts us to feel the pain of others and to align their interests with our own.
2. *Self-Control*: which allows us to anticipate the consequences of acting on our impulses and to inhibit them accordingly.
3. *The Moral Sense*: which sanctifies a set of norms and taboos that govern the interactions among people in a culture. These sometimes decrease violence but can also increase it when the norms are tribal, authoritarian, or puritanical.
4. *Reason*: which allows us to extract ourselves from our parochial vantage points.

In this chapter Pinker also examines and partially rejects the idea that humans have evolved in the biological sense to become less violent.

MORAL TRIBES: Emotion, Reason, and the Gap Between Us and Them

by **Joshua Greene** (Professor of Psychology at the Center for Brain Science at Harvard University)

Moral Tribes Key Idea #1: Cooperation between groups is often undermined by self-interest or a group's own sense of morality.

The world is changing rapidly, but humans are still biologically much the same. Evolution has given us the skills to cooperate *within* groups, but unfortunately, our ability to cooperate *between* groups still leaves much to be desired. The history of conflict is enough to tell us that.

Mutually beneficial cooperation is endangered by many things, but the clearest threat is what's known as *the tragedy of the commons*.

This is fancy sociology speak for the conflict between self-interest and collective interest: in other words, *Me Versus Us/ You*.

Imagine that Art is journeying alone through the Wild West. He spots the silhouette of another traveler up ahead at a watering hole. Art isn't sure whether the stranger is armed, but Art does have his pistols with him. They meet and size each other up as their horses drink at the watering hole.

If Art thinks selfishly, there's little to be lost if he shoots Bud, the stranger. There'd be no chance of Art getting robbed, for starters. But let's say that Art opts not to shoot Bud, for now. When Art later nods off, Bud spikes his whiskey with poison. Bud, you see, is also afraid of being robbed. When Art wakes, he changes his mind and shoots Bud dead. Then he unwittingly knocks back the poisoned whiskey and dies. If Art and Bud had been less self-interested and instead acted cooperatively, neither would have died. That's the tragedy of the commons.

A second threat to mutually beneficial cooperation is known as *the tragedy of commonsense morality*. This time it's a question of *Us Versus Them*. In other words, one group sets its own values against those of another.

An excellent example of this mentality is demonstrated by the story of the Danish political newspaper *Jyllands-Posten*. In response to the Islamic hadith forbidding visual depictions of the Prophet Muhammad, it published a series of cartoons satirizing Muhammad in 2005. The general

climate was also important: there was an ongoing debate about journalists self-censoring their views on Islam.

Global media outlets followed the controversy. Before long, violent protests sprang up around the Muslim world. Over a hundred people were killed, and Danish embassies in Syria, Lebanon and Iran were set on fire.

The two groups – Danish journalists and Muslims – were each fighting for what they saw as commonsense morality. The journalists hated feeling censored, while Muslims didn't want their religion disrespected. But the end result was conflict. This is how commonsense morality can lead to tragedy.

Moral Tribes Key Idea #2: The prisoner's dilemma gives us an insight into the functioning of moral principles.

A famous thought experiment is often cited when questions of morality arise. It's called *the prisoner's dilemma*. To explain it we'll have to return to our friends Art and Bud.

This time, Art and Bud have teamed up and started robbing banks together. Eventually, the sheriff arrests them, but he doesn't have enough evidence to pin the crime on the pair. To get solid convictions, the sheriff needs to wheedle a confession out of them. So the heisters are split up and given a moral puzzle: if Art confesses but Bud doesn't, then Art receives a one-year sentence and Bud gets ten, and vice versa. However, if they both confess, they each get an eight-year sentence. And if they keep quiet? Well, that's two years each.

This begs the question: which moral principles dictate Art and Bud's decision-making?

First off, their choices are probably affected by their relationship to one another.

If Art and Bud were brothers, they'd be significantly less inclined to confess and so betray their sibling.

Equally, if they thought that they could have a successful future partnership as bank robbers, staying quiet would certainly do them both good.

However, if the pair of strangers didn't care about each other, they'd be much more likely to confess. After all, that way they'd each receive a one-year or an eight-year sentence instead of a two-year or a ten-year one.

No matter what the other does, the end result for either is better if they choose to confess. That means the most likely outcome is that they'd get eight years each.

There's another factor that might affect the decision-making process: possible future repercussions.

For instance, Art could threaten Bud with murder if he dares to confess. However, intimidation isn't always the best strategy. In this case, Art would have to wait ten years before he could get his hands on Bud. And besides, murder is a risky business.

Now imagine the two are part of a cartel, the League of Tight-Lipped Bank Robbers. Each member swears to keep to a strict code of silence. He who fails to cooperate must face violent repercussions from the others. In this case, Art and Bud won't be singing any time soon.

We read dozens of other great books like *Moral Tribes*, and summarised their ideas in this article called *Life purpose*
[Check it out here!](#)

Moral Tribes Key Idea #3: Utilitarianism recognizes that each of us deserves equal happiness but undervalues people's rights in the process.

Ask yourself, why did you go to work today? Most likely for your paycheck. And why do you need the money? For food. And the food? Well, it's because you want to keep living. And why live? So you can spend your time with friends and family, and be happy. No matter what the precise sequence is, you're going to realize that what matters, in the end, is happiness.

This is where *utilitarianism* can be your guide. The philosophy holds that the most important concern when making moral decisions is happiness.

To better understand this, let's look at another famous thought experiment, *the footbridge dilemma*.

Imagine that a train carriage is hurtling out of control toward five railway workers. If struck, they will be killed. You are standing on a footbridge overlooking the tracks. Next to you is another man carrying a large backpack. You realize the only way to save the five workers is to hurl this heavily loaded man onto the tracks below. This would kill him instantaneously but also stop the carriage and save the workers. So is pushing the man off the bridge morally acceptable?

Well, according to the principles of utilitarianism, you're going to have to give him a shove. As each life is equal, this will ensure the greater happiness of the five at the cost of one life.

It's easy to see the problem with utilitarianism when we roleplay the footbridge dilemma: it clearly doesn't value individual rights at all highly.

That's because utilitarians think it's fine to overlook an individual's happiness if the end result is greater overall happiness.

Here's another example: imagine you live in a society where a minority of the populace is enslaved. If the majority are happy with this state of affairs, their overall happiness totals more than that of the enslaved minority. That's fine as far as utilitarianism is concerned, but extremely morally dubious.

Slavery generates riches for some, but incredible anguish for others. When we look at the positives and negatives, it's clear that the moral negatives shouldn't be ignored. You can't just weigh one against the other.

If we use utilitarianism to make moral decisions, we shouldn't forget the inalienable rights of individuals in the process. These rights should not be dismissed just because the happiness of a majority group is quantifiably larger.

Moral Tribes Key Idea #4: Moral thinking comes in two modes: automatic or manual.

The modern camera is a wonder of technology. A photographer can choose the automatic point-and-shoot mode or else use the manual setting, exerting greater control over the outcome. It's a nice analogy for moral thinking, where we also have two modes: *automatic* and *manual*.

The researchers Baba Shiv and Alexander Fedorikhin proved this in an experiment in 1999. In their study, the participants were told to memorize a number, walk down a hallway and tell a tester the number.

Half of the participants were given a two-digit number to memorize, the other half a seven-digit number. Clearly, the second group had the greater cognitive task.

In the hallway, subjects were instructed to take one of two snack options, either a healthy piece of fruit or a slice of rich chocolate cake.

It turned out that those under a higher cognitive load were 50 percent more likely to opt for the chocolate cake.

This happened because they were in *automatic mode*. In other words, they were guided by intuition and emotion.

Our automatic mode only cares for what we can get in the moment. In this case, the rich charms of cake were hard to resist. The automatic mode is built up from our accumulated responses shaped by genes, cultural experiences, as well as trial and error.

Manual mode, however, works differently. In it, reasoning and thinking play a key role.

The controlled manual mode mulls over short- and long-term benefits. So in Shiv and Fedorikhin's experiment, it reminded participants with lower cognitive loads that the fruit was better for them.

The general lesson here is clear: automatic thinking leads to more errors but allows for easier decision-making, without overloading the conscious mind. Equally, as we saw with the participants who had to remember seven digits, the automatic mode is a fallback option when the manual mode is busy.

Moral Tribes Key Idea #5: Who we help depends on how personal our connection to them feels.

Imagine you're walking in a park, dressed up in very expensive \$500 clothing. You see a child drowning in a pond. Theoretically, it'd be easy enough to save the child's life by diving in yourself, but you'd destroy your clothes in the process. Of course, that's no real dilemma at all: you'd choose the child over your clothes every time.

The real question is, why is it morally acceptable to spend so much on a suit in the first place. Just think – that money could have been used by a charity for all sorts of things, saving many more children.

Much the same dynamic exists for empathy. It turns out that the strength of empathy is determined by two factors: physical distance and personal connection.

The author and his colleague Jay Musen conducted an experiment to investigate this relationship more fully. Participants were instructed to envisage two scenarios.

In the first, subjects were asked to imagine vacationing in a country and experiencing a catastrophic typhoon. In the second, the subjects visualized having a friend there who gave them a live audio-visual feed of the aftermath. Of those who projected themselves as being physically on the scene, 68 percent said they were morally obliged to help, compared with just 34 percent of the live-feed group.

The same phenomenon can be witnessed in real-world scenarios. For example, in 1987, an 18-month-old girl fell down a well in Texas. She was trapped there for almost 60 hours. In support of the rescue effort, her family received more than \$700,000 from strangers. Happily, the toddler was rescued by emergency services.

But what's interesting is that the donated money could have saved the lives of thousands dying in developing countries. So why was it given for this cause only?

We feel a responsibility to help due to our feelings of anxiety and guilt but only if we feel a connection to the case. The girl down the well felt personal, even to faraway strangers.

When our ties to the event are weaker, we feel less compelled to act because we feel more distance, even if the disaster is larger in scale.

Moral Tribes Key Idea #6: Beliefs and values tend to be justified by rights and duties, but a pragmatic approach is more illuminating.

One of the most contentious debates boiling in the world today revolves around abortion.

Generally speaking, pro-choice advocates and pro-lifers justify their points of view by looking at *rights* and *duties*.

Pro-choicers view abortion as a facet of women's *rights* – of course they should be able to make decisions about their bodies.

Equally, pro-lifers claim to oppose abortion due to their *duty* to protect all life.

These two arguments are therefore grounded in two completely different concepts. As a result, the only common ground they can debate is the question of when life actually begins.

Pro-life arguments focus on the potential of the human life that abortion terminates. For most pro-lifers, it's a *person's* life that begins at conception, the moment sperm and egg merge.

Pro-choicers, on the other hand, don't believe life begins at conception, but rather when a fetus has basic consciousness, meaning they have an awareness of their body and can feel pain. But focusing on when life begins does not actually answer the question of why exactly is or isn't early-term abortion *morally* justified?

In this case, utilitarianism can offer a pragmatic way to approach the debate.

Instead of worrying about when life begins, we should pose moral questions. For instance, would banning abortion impact society as a whole positively or negatively?

If abortions were outlawed, what would happen? Perhaps people would alter their sexual behavior, despite it being a satisfying part of life. Furthermore, some women might seek illegal abortions or go abroad for them, which could be dangerous. And finally, some women might give birth to babies whom they're not in a position to care for properly, either emotionally or financially.

Meanwhile, without abortions, more babies would be born. They could also experience happiness, thereby technically increasing overall happiness in the world. But then, by the same measure, should we not ban contraceptives and abstinence too, which also prevent babies from being born? In fact, would the moral imperative for adults be to pump out as many happy babies as possible? This seems like too harsh a demand.

One could also argue that the possibility of having abortions leads to an increase in harmful sex, for instance, between teenagers who are not yet ready for it. But it's not clear if banning abortions would actually reduce the amount of harmful sex, because presumably teenagers who are more mature and mindful of their choices are also the most likely to be sexually active.

Based on this reasoning, it seems that pro-choicers would have much stronger grounds for their perspective, as the possibility of legal abortion maximizes society's happiness at large.

Major debates like these continuously swirl around us, whether they're over abortion, laws, taxes, healthcare, capital punishment, marriage equality, gun control or immigration policies. A better understanding of moral psychology can help us make progress even in these challenging debates.

Final summary

The key message in this book summary:

Humanity's sense of morality is built on evolution and cultural experiences. We often respond to situations around us automatically, without really thinking them through. But when it comes to moral dilemmas, this won't lead to the best result. Prioritizing our own interests often leads to poorer outcomes than cooperating would and also results in the tragedy of the commons. This is why careful moral reasoning is necessary, especially when it comes to contentious, impactful topics.

FRANS DE WAAL – OUR INNER APE - SUMMARY

We're all pretty familiar with Charles Darwin's theory of evolution. We know, for example, that in 1859, his *Origin of the Species* asserted that God did not create man and man's morality, but rather that all species of life had evolved over the course of millennia. During this process, he affirmed that genetic variations which contributed to the preservation of life survived while those which were not beneficial disappeared. Konrad Lorenz built on this argument in his 1963 text, *On Aggression*, in which he argued that evolution's purpose for each individual was not to preserve one's own life but rather to reproduce and pass on one's genes. This, he suggested, is where aggressive traits come in: for the moments when it's helpful to dominate others — whether they're members of your own species or otherwise — for the sake of passing on your genes.

Richard Dawkins concurred in 1975 and took this line of thought one step further with his concept of the “selfish” gene. Dawkins contended that the individual person is more or less irrelevant; rather, it's the individual gene which seeks to pass on copies of itself that matters and drives our actions. Operating on this assumption, Dawkins posited that the gene is selfish because it only interacts with others when such interaction would further its agenda or when it benefits those who carry the same genes, like close relatives. Our only redeeming quality in this process is our intellect or cerebral cortex, that ability to think through our decisions and ponder their moral implications is differentiates humans from animals and drives our acts of selflessness.

And though these are considered the primary leading works on the relationship between evolution and human morality, since the 1980s, many scholars have produced new texts which contradict the theories of Darwin, Lorenz, and Dawkins. And as you'll see through the course of this summary, Frans de Waal's study of reconciliation mechanisms among primates is one such rebuttal.

Chapter 1: Hippie Monkeys

If the bonobo species had a slogan, it would be “Make love, not war!” And although they're often called “pygmy chimpanzees” because of their physical similarities to chimps, bonobos actually couldn't be more different. For starters, they might be the same size, but they're also more delicate, have smaller heads, and possess the ability to walk upright. But that's not the most interesting thing about them. Their behavioral differences are the key feature which distinguish them from chimps and this was first discovered when an unsuspecting circus owner borrowed a male bonobo from another circus, hoping that he would breed with the troupe's female chimpanzees. And although he got his wish, he also got a lot more than he bargained for; the children of this chimp-bonobo pairing almost seemed to be sex-crazed! Not only were they constantly having sex with each other, they did it in so many bizarre combinations and positions that they were actually deemed too lewd to be used as performers for children's entertainment.

This behavior was also observed in the wild when some Japanese researchers traveled to the Congo to study bonobos and it revolutionized everything they'd previously thought about primates. Because after studying chimpanzees, gorillas, orangutans, and humans —

all of whom are pretty violent and all of whom commit rape — the researchers had included that all primate species engage in these displays of violence. But watching the bonobos proved them wrong! Because instead of fighting each other to the death, the bonobos simply have a lot of (consensual) sex. They also noticed that female bonobos don't experience discrimination or violence in the same way as females of other species; rather, they take an active and respected role in running their communities!

They also learned that bonobos are pansexual, which in their case means that they frequently have sex with members of their own species as well as with the opposite. Their sex habits are also strongly grounded in consent, as researchers noticed that partners look at each other's faces whilst having sex in order to gauge each other's reactions and respond accordingly. And perhaps even more intriguing is the fact that three out of four sexual encounters among bonobos have nothing to do with procreation. Instead, they engage in sex for fun, as a way of saying hello, and as a way of resolving conflicts — among many other reasons!

Chapter 2: Girl Power

Earlier, we mentioned that female bonobos are highly respected in their communities. But, as researchers discovered, their impact on other bonobos actually goes a lot deeper. Because although they are physically weaker than their male counterparts, field studies show that they're not simply prominent in bonobo society — they're actually the dominant gender! This is because female bonobos seem to have a concept of female solidarity and stick together to protect their interests. And because the males of their species are less socially adept and have less of a sense of gendered loyalty, a group of females can often overpower a group of males in any given situation.

This is in direct contrast to the behavior exhibited by female chimpanzees and researchers posit that geography has a lot to do with this. Because chimps live in the northern forest area of the Congo, they're often forced to split up to forage for food. This means that they primarily hunt alone or while carrying their young and have fewer opportunities to form strong social ties with the other females of their species. This indicates that environment plays a stronger role in social bonding and the development of gender roles than researchers had previously assumed. And in each case, we can see from these findings that the dominant gender is not determined by physical strength but by the ability to connect with a group.

Chapter 3: The Male Bonding Experience

While researching chimpanzees in the late 1980s, de Waal encountered a puzzling experience: just a few hours after a bloody fight between two chimpanzee males, the aggressors gave each other what appeared to be a very heartfelt hug in front of their entire group. This was puzzling to de Waal until further research showed him that, because male chimpanzees hunt in a group, group cohesion is of vital importance. This means that cooperation is imperative and it's in everyone's best interests to make up quickly and support each other. However, he also discovered that within this group, there are clear hierarchies.

The hierarchy centers around one alpha male whose leadership is respected by the entire group until one young male eventually stops taking orders. Something that seems to resemble an “election season” follows, as the new challenger seeks support among the other members. This behavior is evidenced by constant offers to groom other males, as grooming is an important social interaction for primates. Once the rival has enough support, a fight takes place and goes on for as long as it takes for one challenger to admit defeat. De Waal noted that in many species such as orangutans and gorillas, the loser is often killed or driven out of the group, but among chimpanzees, the rules are different. Instead, the rivals make up and the hierarchy is simply re-structured.

Chapter 4: Nice Guys Finish Last

Although we most commonly associate that phrase with human males, it can be observed in the animal kingdom as well. In fact, de Waal’s study of chimpanzees has confirmed that only the most powerful males are rewarded with sex. This is especially significant because chimpanzee females only give birth to one child per pregnancy — cases of twins or triplets are almost unheard of — and they breastfeed for four years. During those four years, they are unable to get pregnant again, which means that male chimps have a very small window for potential sexual activity. This also increases the competition surrounding eligible females.

But while the males compete to have sex, female chimpanzees engage in a very different competition of their own. While they don’t have to compete for the possibility of sex or pregnancy, they are all fighting for survival, as resources are often so scarce as to prevent each mother from getting enough food for herself and her baby. For this reason, females are heavily invested in procreating with males whose genetics will create the strongest offspring and thus, those who are most likely to survive. That means that females are very eager to have sex with the alpha male, but they become a bit more selective about others in the group. Even when males distribute food from their hunts, a female is likely to be very reluctant to sleep with the hunters unless they get a sizable portion of the food. They are, however, a little more open-minded when it comes to members of the alpha male’s inner circle, which means it’s in the best interest of other males to ensure that they’re well-connected socially.

Chapter 5: The Physiology of Dominance

Because of humans’ evolution from primates, we can draw a number of conclusions about our early ancestors’ physiques by looking at the physical differences which can be found across the range of primate species. We can even narrow down these differences by gender. For example, male gorillas can weigh up to 661 lbs and they are three times heavier than the females of their species. By contrast, chimpanzee males are only a few centimeters bigger than their female counterparts, but they have a more significant muscle mass which causes them to weigh one and a half times more. Similarly, dominance functions differently in the lives and cultures of each species, with chimpanzee males being only slightly more dominant than the females and willing to concede defeat in a fight. The bonobos, however, are different, being only a bit larger and heavier than the

females. And as we've seen in previous chapters, bonobo males are also slightly more subservient.

In light of this, we can infer a few things about the impact of dominance on evolution. For one, we can assume that although the male bonobos must have been more dominant at some point, a social shift must have occurred later which prompted them to become smaller. If, for example, they eventually felt less pressure to fight and compete with one another, large muscles and brute strength would have lost their evolutionary benefits and thus ceased to become dominant traits. This also helps us learn a bit about the role of dominance in our life expectancy, because it stands to reason that if you're constantly battling for dominance, you're more likely to die young.

Lions are a perfect — and very drastic — example of this because lionesses can live for up to thirty years, while the average male life expectancy is a mere seven. The statistics are similar for male chimpanzees and humans, both of whom are more prone to dying in fights or from the elevated cortisol levels caused by the constant stress of battling for dominance. However, because bonobo males approach life through a “make love, not war” worldview, their stress levels are significantly lower and they lead longer, healthier lives, with their life expectancy matching that of their female counterparts. So, from this, we can infer that lowering our stress levels through a decrease in competition can extend our life expectancy!

We can also learn a bit about human evolution because, based on physical differences in humans' sizes, it seems apparent that men were the dominant gender at an early point in human evolution. We can infer this because the presence of a longer matriarchal phase in leadership would have created evolutionary developments similar to that of the bonobos.

Chapter 6: Sperm Competition

We can also learn a great deal about evolution by studying testicle size and sperm competition among primates. For example, although male gorillas are massive, they have relatively small testicles. Even small differences in testicle sizes might engender a significant amount of competition between males, but because of the social hierarchy amongst gorillas, the alpha male exerts such power that he has no sperm competition; that is, no other males dare to take a chance with the females the alpha has selected for himself. By contrast, the testicles of a male chimpanzee are twice as big as those of even a silverback gorilla, the largest of the gorilla species. But where the silverback is the undisputed ruler of the gorillas, the head of a chimpanzee group is more like a chairman of a political party. Because although his sperm might have priority, he's still responsible for granting female access to the other males in his party and this can lead to a bit of competition.

Bonobo society, however, is free of competition. Because bonobos are pansexual and engaging in their own primate version of a sexual revolution, all male bonobos can have sex with all the females. The competition is thereby eliminated, occurring only within the female's reproductive organs as the strongest sperm races to her egg cells. Human society is therefore more comparable to the bonobos. Because we live in “multi-male societies” in which males and females have free access to one another, our sperm competition is also

relatively low by comparison. Combined with the fact that women don't typically make a habit of procreating with multiple random partners, we can infer that humans have an evolutionary predilection for preferring stable partnerships and equal access to sex.

Chapter 7: Marital Fidelity Prevents Infanticide

Twenty years ago, a study on lions in the wild observed something shocking: the day a new lion took control of his pride, he brutally slaughtered all the cubs in the pack in front of their mothers. This was baffling to researchers until they discovered that this was a strategic device to guarantee that the lionesses would be ready to mate with him more quickly. In fact, scientists even determined that the smell of the dead cubs' blood activated the mothers' ovulation cycles. Similar behaviors have since been observed in many other mammals and all varieties of primates, with the notable exception of bonobos. What makes the difference?

One distinguishing feature is the fact that, in all other species, female interests are pitted against those of the male. This puts all offspring in a precarious position because males are genetically motivated to eliminate the genes of their competitors. By contrast, females are motivated to preserve their own genes through the lives of their children, even at the risk of their male partnerships. This motivation is absent in bonobo society, however, and thus bonobos are the only species which does not commit infanticide. That's because their culture of free sex and minimized competition makes it evolutionarily pointless for males to kill offspring that might potentially be their own.

However, human women use the opposite strategy. Although their sexual playing field might be similar to that of the bonobos, they differ in that they attempt to form pair bonds with the fathers of their children rather than employing the bonobo strategy of allowing all available males to assume the child might be theirs. Ironically, however, they do not differ from bonobo females in their evolutionary instinct to continue having sex with other attractive partners, even though this actually contradicts pair bonding.

Chapter 8: "Exclusively Human" Qualities Aren't so Exclusive After All

Many characteristics such as a sense of fairness have often been wrongly attributed as being exclusive to humans and de Waal's study of capuchin monkeys proved this. His discovery occurred during an experiment which involved teaching two monkeys to hand pebbles to a researcher through their cage. As a reward for successfully passing the pebble, each monkey received a slice of cucumber. However, after twenty-five successful attempts, de Waal switched it up a little by rewarding one monkey with a cucumber and another with an even tastier grape. The monkey that received a cucumber immediately noticed the difference and de Waal observed him carefully checking his pebble before handing it to the scientist, which indicated that he had a concept of earning a lesser reward in exchange for low-quality work.

But when he could find nothing wrong with his pebbles and the inequality in the reward system was repeated, de Waal noted that the monkey became agitated and refused to continue participating, even demonstrating anger by throwing his pebbles at the researcher. Through this experiment, de Waal learned that primates are motivated by

something more than a simple sense of their own benefit. This was proved again when de Waal repeated the experiment with chimps and noticed that each of the chimps who were unfairly compensated declined to participate. He also discovered a new and interesting development when even the chimps who were rewarded with grapes began to reject their treats in solidarity with their friends who were treated unfairly. This indicated to de Waal that a collective sense of fairness appeared to be hardwired into their genetic makeup, much as we assume it is with humans.

Chapter 9: The Universality of Empathy

The ability to understand and identify with someone else's feelings is another quality we've often attributed exclusively to humans. But in fact, many animals have also demonstrated significant capacities for empathy, and this is especially true with the bonobos who can actually imagine how others feel. For example, in an experiment in which a scientist blindfolded one chimp and hid some food from him while another watched, the chimpanzee who had watched demonstrated clear signs of expecting his companion to be confused about the location of the food.

Chimpanzees also possess the ability to distinguish their own consciousness from that of others and they have been proven to use this skill for altruistic purposes. For example, if some chimps are unable to climb out of a ditch, their friends above ground will throw down a rope or a branch and use their own strength to help them climb out. This indicates that they understand their companions are in a predicament and they must feel scared and want out. They are even able to put themselves in the shoes of other species and understand their experiences as evidenced by one case study with a bonobo female and a bird. When a bird flew into the glass of her enclosure, she attempted to help it up and encourage it to fly again. But when she saw that the bird was injured and couldn't fly, she cared for it until it was better. When the bird's wing had healed, she gently carried it to the top of a tree, tenderly spread its wings apart, and threw it into the sky, indicating that she understood the bird wanted to fly and that she had the power to help.

Chapter 10: Cruelty To Strangers is Universal

Unfortunately, primates also share a number of negative characteristics which are not unique to humans. Renowned British primatologist Jane Goodall observed that chimpanzees even share our sense of xenophobia after witnessing an incident between rival groups of chimps. One night while patrolling the borders of their territory, a group of male chimps saw a male from the enemy group and dragged him into their territory before promptly beating him to death. This indicated to Goodall that xenophobia may be an intrinsic part of our evolutionary makeup; in short, we're hardwired to distrust strangers. Fortunately, however, xenophobia can be offset through actively practicing empathy, as evidenced by the behavior of the bonobos. Although they may not trust strangers from other tribes any more than other primates, they always de-escalate the situation through sex. They may not be willing to share food with the outsiders or groom them but they do appear to recognize that they're all the same species and that excessive hostility is

unwarranted. Their willingness to at least coexist with strangers suggests that there is hope for overcoming xenophobia in the animal kingdom as well as our own.

Chapter 11: Morality Runs Deeper Than Rationality

As humans, we like to think of ourselves as rational beings whose decisions are based on reason and free will. But the truth is that instead of processing decisions in our cerebral cortex, the part of our brain that is active in contemplating moral dilemmas is actually located in a deeper region of our brain, one which we share with primates. This was proven during an experiment in which participants were confronted with two versions of the famous philosophical “Trolley Problem” while their brain activity was scanned. In one version, you’re faced with the dilemma of being in a trolley without breaks which is speeding toward five rail workers. Your only options are to stay on your present course or divert the trolley onto another track, where you’ll only kill one innocent rail worker. The second version of this problem invites you to imagine that you’re standing on a bridge, watching as a trolley speeds out of control. It’s still about to hit five rail workers and you have the choice to push a very heavyset man down onto the tracks (because his weight would form a significant roadblock and prevent the trolley from hitting the five workers) or to simply watch and do nothing. Unarguably, either of these are very difficult dilemmas and each participant struggled greatly with their decision. But in the case of the first problem, 90% of participants showed activity only in their cerebral cortex — the rational decision-making center of our brains — and said they would throw the switch to kill one worker instead of five. However, when faced with the option of physically killing someone with their own two hands, very few participants were willing to do so and this decision triggered activity in a much deeper brain area.

This indicates that the moral prohibition of killing someone yourself — as opposed to more indirect methods like flipping a switch — is deeply rooted in our genetic makeup; we’re hardwired to revile the idea. Therefore, we not only share some sense of morality with primates, but this impression of right and wrong actually runs so deep as to override our sense of “rational” morality.

Chapter 12: Our Two Inner Apes

De Waal posits that all humans have two inner apes. The first is our “typical,” competitive ape, the one which engages in evolutionarily beneficial acts like competition and aggression and whose motivations are self-serving. But we also have a “collaborative” ape which inspires us to connect with others. This ape possesses a strong sense of social instincts and a desire for empathy and fairness. And although these apes might often be in competition with one other, the good news is that evolution has not caused one inner ape to suppress the other. Instead, they evolve, becoming more complex and collaborative as our world and the dilemmas we are faced with change. While our instincts may be motivated by primal impulses, we can learn to override them and draw positive qualities from each of our inner apes which will benefit us in life.

Chapter 13: Final Summary

Building on the concept of our two inner apes, it's important to understand that we cannot improve society or invest in a worldview which is predicated on changing our inner apes. Because although some social theories like communism posit that our competitive behaviors can be overcome, this assumption is evolutionary flawed. The more intelligent solution, therefore, is to acknowledge that the qualities which shape our inner apes will always be present and we can only achieve social change by using those qualities for good.

Because like all primates, humans are driven by a variety of motivations, some altruistic and some competitive. We are neither exclusively "good" nor "bad," but shaped by a combination of the two. And although we may be able to trace some of our behavior patterns back to chimpanzees and conclude that we're acting out of an inherited evolutionary pattern, that doesn't mean that we're genetically bound to follow that pattern without hope of change. As illustrated through the countless examples of primates we've seen throughout this book, humans have already evolved for the better and we can continue to do so. By using our advanced powers of knowledge and morality to analyze our inner apes, we can use our inherited evolutionary qualities for good.