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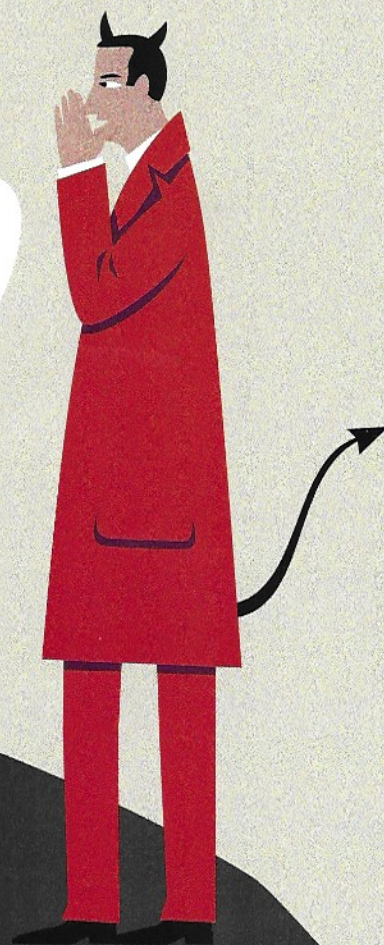
EDITION

THE SCIENCE OF GOOD & EVIL

WHAT MAKES
US MORAL

GOOD DEEDS,
GOOD HEALTH

UNDERSTANDING
THE DARK SIDE



PLUS
DO ANIMALS
HAVE ETHICS?

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THE ROOTS OF GOOD AND EVIL

There are evolutionary advantages to nearly all aspects of human behavior. If empathy and goodness are writ deep in our genes, so too are cruelty and savagery. Both sides of our behavior have helped us survive

BY MARKHAM HEID

ON A JANUARY AFTERNOON IN 2007, WESLEY AUTREY, a 50-year-old construction worker and Navy veteran, was standing on a New York subway platform with his two young daughters. As the family waited for their train to arrive, a seizure took hold of a 20-year-old man standing near them. The man fell onto the tracks, and a moment later, the lights of an oncoming train appeared in the tunnel.

With little time to think, Autrey leaped down onto the tracks and covered the stranger's body with his own—pressing the still-convulsing man down into the floor of the track between the rails. Five cars rolled over the two of them before the train finally stopped. Neither man was badly injured.

Selflessness. Altruism. Kindness. Honesty. These are the qualities most of us associate with goodness. And when we hear of a person who demonstrates

these qualities to a degree we find unusual—in many cases, practically unimaginable—we think of that person as a hero. Few of us ever display the brand of heroism Wesley Autrey did. But most of us strive to be good.

At our weaker moments, though, we may fail—often in ways that can leave us feeling just plain ashamed. “If you find yourself in a situation where you can get away with something, the impulse to do that can be too strong to resist,” says Frank McAndrew, a professor of psychology at Knox College in Illinois and the author of *Out of the Ooze: Navigating the 21st Century with a Stone-Age Mind*. “We’re all looking to do well, but we all have a dark side.” When that dark side shows itself, we can act with dishonesty, duplicity, cruelty and selfishness—all of which we consider characteristic of evil.

If only we could shed these ignoble tendencies and fully embrace our better natures, the world would be a finer place. So why haven't we done that? To evolution-minded researchers like McAndrew, the answer is obvious: both good and evil have served our species well.

WHY WE ARE THE WAY WE ARE

YOU ARE A ONE-IN-A-MILLION SUCCESS STORY. YOU (like every other living thing on Earth) owe your existence to an unbroken chain of ancestors, stretching back to the primordial soup, who each did what was necessary to survive and pass on its genes to offspring. If even one of your ancestors had come up short—if they'd succumbed to a competitor or failed to land a mate—you wouldn't be here.

Evolutionary biologists understand this, and so they tend not to apply value judgments to human traits. Or, more accurately, they don't believe values determine the traits we possess. "The process of natural selection is value-free," says David Buss, a professor of psychology at the University of Texas at Austin and the author of *Evolutionary Psychology: The New Science of the Mind*. Whatever qualities humans have today—whether we view them as noble or deplorable—are the ones that would have increased our ancestors' odds for "replicative success."

Put another way, the stuff that makes us who we are—our capacity for kindness and generosity, as well as for greed and violence—exists in each of us because these abilities conferred some reproductive advantage on our forebears. "Our inherent human nature has adaptations that evolved to be beneficial not from a moral sense, but from a fitness sense," Buss explains.

Take, for example, a mother's love for her child. Maternal love may seem "natural" to us, but it does not exist in every species. Evolutionary scientists view it as an adaptation that offered our mammalian ancestors a clear advantage. "Maternal love exists in our species because ancestral mothers who had this motivational system had more surviving children than those who did not," says Leda Cosmides, a

distinguished professor of evolutionary psychology at the University of California, Santa Barbara. Unlike the unfortunate children born to prehistoric mothers who didn't care much for them, the offspring of loving moms survived to pass that trait on to their own offspring.

A propensity to act with aggression, hate or violence would also have conferred advantages on our ancestors. "There are many adaptations that have evolved specifically to inflict costs on other human beings, and that includes adaptations to commit murder in certain predictable contexts," Buss says. While we all consider murder to be among the greatest evils, we don't tend to think the same of a homicide committed in self-defense. Back when life-or-death conflicts were regular occurrences, the ability and willingness to kill would have served your ancestors well.

Along with maternal love and situational aggression, innumerable other human adaptations arose in response to "selection pressures," which are the circumstances or factors that cause evolution to favor one "design" over another, Cosmides says.

The same process of natural selection explains, for example, why giraffes have long necks. One popular theory holds that as that species evolved, the members that

had the longest necks would have been able to access food that their stub-necked buddies couldn't reach. The long-necked giraffes therefore survived and reproduced at greater rates than the short-necked giraffes. And so over hundreds of thousands of years, the giraffe's neck gradually stretched to the astonishing lengths we see now. This process continues today. Giraffes (and every other species on Earth) are constantly adapting in response to their ever-changing environments and the corresponding selection pressures.

That goes for humans too. Cosmides says that selection pressures and the resulting adaptations determine everything about us—from how we look to how we interact with one another. And it's our species's special ability to form groups and work in concert that helps explain our views on good and evil.

A CAPACITY FOR
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OF US

TOGETHERNESS IS HAPPINESS

IN MOVIES AND NOVELS, THE BAD GUYS ARE UNmistakable. “The evil villain of fiction is typically out to get what others have,” says Jens Kjeldgaard-Christiansen, a pop-culture and moral-psychology researcher at Aarhus University in Denmark. “They care nothing for the good of the group or the community or society. They care only for themselves.”

Whether it’s a calculating killer or a mustache-twirling miser, we can all spot the baddie because he tends to exhibit one of two qualities: either he delights in pure malice or he acts selfishly and with only his own health or prosperity in mind.

These sorts of villains aren’t only the stuff of fiction. “Someone who defrauds thousands of retirees out of their savings just to be rich . . . I think many people would describe that person as not just bad, but evil,” says Joshua Greene, a professor of psychology at Harvard University and the author of *Moral Tribes: Emotion, Reason, and the Gap Between Us and Them*. Heroes are likewise hard to miss. They’re honest and altruistic—acting for the good of the many rather than for themselves.

But why should this be so? Why do we prize selflessness and cooperation while vilifying greed and self-interest? Our ideas of what is right and wrong may stem from a concept evolutionary biologists call reciprocal altruism. Reciprocal altruism is a type of two-person cooperation, Cosmides says. “I do something for you, and later you’ll do something for me.”

That give-and-take serves as the glue that holds groups together—whether that group is a small band of hunter-gatherers or the citizens of a modern society. One of the big assumptions undergirding the role of reciprocal altruism in human evolution is that groups of people, even when they’re unrelated, are better off than loners. Whether hunting woolly mammoths or cultivating wheat for food, human beings thrive when they work together. And so it makes sense that natural selection would favor cooperation.

“As an evolutionary psychologist, you always think about what life would have been like way back

when,” McAndrew says. And for a very long stretch of human history, “way back when” was a time when humans lived in groups of just 25 to 50 people.

“Human societies didn’t get significantly large until probably approximately 40,000 years ago,” says Richard Wrangham, a professor of biological anthropology at Harvard and the author of *The Goodness Paradox: The Strange Relationship Between Virtue and Violence in Human Evolution*. But Wrangham says modern humans actually started forming the kinds of social relationships that underpin the evolution of our social psychology roughly 300,000 years ago. And so in order to understand why humans today think and act the way we do, it’s necessary to consider which traits and behaviors would have been advantageous back when we lived in much smaller, more intimate societies.

“To be successful in those small groups, to have allies and to be attractive to mates, you needed to have a good reputation, meaning you were known as someone who could be counted on,” McAndrew says. “If the group did well, you did well, so it made sense to make some concessions and personal sacrifices.”

Those concessions, while not unique to our species, involve a type of group cooperation that is at least unusual

in nature. “Cooperation with individuals you’re not related to is rare—humans, chimpanzees and dolphins are three agreed-upon examples,” she says. Even in chimps and dolphins, cooperation is limited.

The immense benefits and complexity of human cooperation go a long way toward explaining the traits we consider to be good or virtuous, as well as those we think of as vile or sinister. If we are drawn to the honest and selfless, we recoil from the treacherous or selfish. It makes sense that we label the second group evil. “Evil people are committed to exploiting other people,” Greene says.

Throughout human history, the stories we tell each other have helped to cement these good-and-evil concepts in our heads. “Popular culture is absolutely bursting with stories of individuals facing terrible odds in the form of malicious agents who care

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HISTORIC DUALITY

The Altruistic, The Atrocious

The human pageant is filled with individuals who have inspired our awe for either their goodness or their malevolence. The Gandhis and Mother Teresas remind us of the potential of our baffling species. Sadly, so too do the Pol Pots and Pinochets.



MOHANDAS GANDHI

The father of India, he headed the country's nationalist movement against Britain with a doctrine of nonviolence and peaceful protest.

MOTHER TERESA

The beatified Roman Catholic nun, born Agnes Gonxha Bojaxhiu, dedicated her life to educating and caring for the sick and poor.

MARTIN LUTHER KING JR.

Winner of the Nobel Peace Prize, he transformed America with the power of his vision, dream and words.

THE DALAI LAMA

The exiled spiritual leader was awarded the Nobel Peace Prize in honor of his nonviolent campaign for Tibetan independence from China.

only for themselves," Kjeldgaard-Christiansen says. "In order to overcome these odds, our heroes have to set aside their differences and work together." He jokes that this story line propels 90% of Disney movies. But it also turns up throughout humankind's written and oral history. Although stories alone don't establish our sense of right and wrong, "stories may help to lay down such values—to make them matter to us and to make us act accordingly," he says.

If group cooperation and self-sacrifice are so fruitful for humans, you'd think we'd have trudged off the savanna bringing only those with us and left the nastier behavioral baggage—deceit, greed, bigotry, violence—behind. Why didn't we ditch these a long time ago? The answer is that these characteristics must have been a benefit to our ancestors—and they probably still help us today.

"If a member of a group cheats—meaning he takes without giving in return—that can be a good strategy so long as he isn't found out," McAndrew says. For example, if a group of early humans were faced with a food shortage, those who stole from the group's supply or lied about how much they could contribute may have survived while some of their more honest pals perished. "We always encourage positive and desirable behaviors in other people, but for us it may not always be to our advantage."

In truth, the humans most likely to survive and reproduce were the ones who possessed a measure of both good and evil, McAndrew says. That is, they weren't so brazenly selfish or untrustworthy as to get themselves killed or kicked out of their group. But

they had enough self-interest to ensure that when times were tough, they'd make it through. In the end, human beings are very like every other animal on Earth in that they act in their own best interests, and if that happens to mean acting in the group's interest too, fine.

But while a small measure of selfishness and underhandedness is typical, the generous and trusting nature of groups has still allowed space for unscrupulous actors—what evolutionary biologists refer to as free riders. These are people who exploit communities by taking more than they give in return.

In some cases, groups are willing to put up with a little free-riding as long as those members also contribute something of value. "Just because I'm getting less from you than you are from me doesn't mean it's not worth cooperating," Cosmides says. "An individual may be exploitative in some circumstances, but when my group is attacked by a neighboring band, I still want him fighting on my side."

Also, some behaviors or characteristics we normally view as evil can seem right and valuable in certain contexts. Like war.

WHEN BAD CAN BE GOOD

WAR IS OLDER THAN WE ARE. OUR PRE-HUMAN ancestors fought one another, and historians have found traces of war in every era and culture. War's ubiquity helps explain the persistence of characteristics we tend not to appreciate in peacetime.

Violence and aggression are two examples. "It was probably never good to have this mindlessly vio-



JOSEPH STALIN

The dictator of a totalitarian state was responsible for the loss of millions of lives during his quarter-century rule of the Soviet Union.

AUGUSTO PINOCHET

After seizing power in a military coup in 1973, the general went on to rule Chile with an iron fist, torturing and killing thousands in the process.

ADOLF HITLER

The Nazi dictator instigated World War II, engineered the Holocaust and still mystifies scholars studying the human capacity for savagery.

OSAMA BIN LADEN

The Saudi millionaire is the 21st century's icon of evil, killing thousands on 9/11 and in attacks on U.S. embassies and the U.S.S. Cole.

POL POT

The leader of the brutal Khmer Rouge oversaw the murders of close to 2 million people in Cambodia and insisted, "My conscience is clear."

lent person, but the guy who was aggressive against the right people at the right time, like in battle, did well," McAndrew says.

So we contextualized the violence and even the act that in other contexts we'd call murder. "Probably no other class of human action is judged to be more evil than premeditated murder," Buss writes in *The Social Psychology of Good and Evil*. "And there may be no other class of actions that inflicts a greater fitness cost on the victim." But while few of us think of murder as moral, many of us allow that killing another human is justified if the person doing the killing is a soldier taking the life of an enemy combatant.

The influence of group cooperation on human evolution helps explain not only the traits we view as right or wrong but also many that facilitate or support these behaviors. In some cases, qualities or practices we tend to view harshly may play vital and beneficial functions in human societies.

Gossip is a good example. "People have this knee-jerk reaction to gossip as something that's negative, but gossip exists for us to be able to assess the reputations of other people," McAndrew says. Gossip can help you learn about and judge the fitness of someone you don't know well, he explains. It also helps keep people honest. "If you know people will talk about you when you're not around, that forces you to stay in line," he says. "It's perceived as bad, but it's really only bad for the person being gossiped about."

Our capacity for guilt or remorse is another example of an adaptation that allows us to function well in groups. "Emotions like guilt evolved be-

cause people who didn't feel guilty didn't cooperate or apologize, and so they were ostracized from groups," McAndrew says. Suspicion is another one. "In a situation where trusting the wrong person could mean life or death, it was probably better to be suspicious and to err on the side that leads to the least risk," he says.

Cosmides adds to this list. "Natural selection cannot favor adaptations that help us engage in cooperation unless there are mechanisms to identify individuals who take but don't give," she says. "So we have very specialized mechanisms that help us to look for cheaters."

Perhaps our most specialized mechanism for identifying spurious individuals is our ability to empathize—to get inside others' heads and see the world as they do. "We have machinery that allows us to predict other people's behavior based on their mental states, and in ways more elaborate than other species," she says.

Such an ability to mind-read and feel others' pain not only helps us intuit their intentions and motivations but also saves us from breaking ties with people who may turn out to be helpful collaborators. "It would be a mistake for me to withdraw from you if you just got sick, or you forgot, or something else prevented you from being a good cooperator," she says. Our ability to empathize helps us distinguish forgivable failures from malicious ones.

At the same time, our capacity to climb inside other people's heads enables us to engage in deceptive or underhanded behavior ourselves. If you can

predict another person's intellectual and emotional reaction to your behavior, that makes you a much more formidable manipulator.

In more ways than one, it's the good in us that opens up space for evil. Just as light creates shadow, human honesty and kindness make deception and cruelty possible.

FROM BAD TO 'EVIL'

DURING HIS 2002 STATE OF THE UNION ADDRESS, President George W. Bush deployed the phrase "Axis of Evil" to describe those foreign governments his administration viewed as excessively hostile or dangerous to the United States. To the ears of evolutionary psychologists, the president's use of the word "evil" surely set off alarm bells. "Ideas have utility in the same way weapons do," says Harvard's Greene. "The idea that the other group or person is evil—not merely bad, but evil—is very motivating and radicalizing."

When it comes to members of our own group, he says, we don't throw around the word "evil" very often. If a relative or friend does something despicable, we might condemn the act, but we rarely go so far as to call the actor "evil." It's when we speak of people outside our circle of cooperation that we whip out the "evil" talk.

Why? Greene says we tend to view "evil" people or groups as bad in a pure sense—more like the villains of fiction than real-life human beings—and therefore beyond reasoned compromise or negotiation. "It's always very tempting in a conflict to say that the other side is evil," he says. It defames and dehumanizes, but it motivates your side.

Others agree. "We divide the world into those who are good and those who are evil because such a simple moral world simultaneously validates our own worldview and allows us to fight those who think otherwise with a clear conviction that they are in the wrong and need to be stopped," Kjeldgaard-Christiansen says. Of course, there are people and groups out there who deserve the "evil" tag. "But we often employ the 'evil' label frivolously in order not to have to engage with the moral complexity of

our own and others' conduct," he says. Viewing the enemy as evil also allows us to forgive ourselves for acting in ways that would otherwise run counter to our own sense of morality and righteousness.

Depicting an enemy as somehow subhuman—as "vermin" or "parasites" or "animals"—can also help organize and motivate the members of one group to do battle with another, Buss says. "Effective manipulators, from politicians to warlords to gang leaders, use these terms to exploit our adaptations for coalitional warfare."

For those people who really do cross the line from merely the bad behavior of which we're all capable to the truly evil, what is it that provides the push?

"The standard social-science model holds that all bad stuff comes from a person's immediate environment," Buss says. He mentions bad parenting or

an unhealthy culture as two of the "usual suspects." But, he says, he believes the vast majority of evil actions can't be explained by these factors alone. Instead, he argues that we're all pre-loaded with evolutionary adaptations that, if "activated" by our environment or circumstances, could lead us to engage in evil behaviors. "We all have the adaptation to develop calluses on our skin in response to friction," he points out. "Similarly, the human mind has

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inherent adaptations that can be activated or deactivated in different circumstances."

In his book *The Murderer Next Door*, Buss tells the story of a Houston woman named Clara Harris who, in 2002, hit and killed her husband with her car. After running him over in a hotel parking lot, she proceeded to back over him three more times. She did all this while her grown stepdaughter—the biological child of the man she was murdering—was sitting in the car with her, unable to escape.

That seems to be pretty much straight-up evil. But Harris ended up in that hotel parking lot, Buss writes, because she'd recently discovered that her husband was having an affair with a co-worker. Not only that, but the cheating husband had chosen to bring his mistress to the very hotel where he and Harris had gotten married a decade earlier.

That doesn't remotely forgive Harris's actions. But in light of these circumstances, many of us would at least judge her response less harshly. Buss says that this is just one example of context activating a built-in human adaptation for evil behavior—the kind most of us would claim we aren't capable of committing. Sexual competition in particular, Buss says, is one of the more common sparks that can lead both men and women to commit murder.

Across cultures and eras, societies have constructed many institutions meant to discourage evil behavior. The most obvious is humanity's system of laws, courts and prisons, which are designed to punish those members of a community who step out of line.

Along with our legal system, cultural norms also discourage cheating, stealing, lying and other acts we consider wrong or evil. And like us, these norms are constantly evolving. "Talking about evolution can make everything sound like it comes down to biology, but the rules your group sets up as OK or not OK set the boundaries of what is good and evil, and these are always changing," McAndrew says. Certain forms of male sexual assertiveness, for example, which were once considered acceptable, are now manifestly out-of-bounds, and that benefits both genders and the culture as a whole.

But just as contemporary life works to rein in some of our more aggressive or duplicitous inclinations, it also unshackles some types of behavior that would have been impossible to get away with when humans lived and roamed in small, intimate groups. "It's much easier now to be a taker rather than a giver," McAndrew says. "The internet and its anonymity allow you to get away with a lot more cheating without fear of being caught." The nature of many online interactions also disarms many of our most potent lie-detection adaptations—including our ability to read faces and body language, and to use what we know about a person to intuit intentions.

But we'll adapt, and our conceptions of good and evil will undoubtedly evolve with the times. "When people think of evolutionary psychology, they may think everything is determined by our genes," Greene says. "But our genetics interact in complicated ways with our cultural and individual experiences."

The way we manage our good and evil impulses will always change. The existence of both never will.

The Ugly Truth About Sex and Violence

If you watch cop dramas, you know the victim's romantic partner is always the prime suspect. That element of fiction is ripped from real life. Domestic violence makes up one third of felony violence cases, according to the Bureau of Justice Statistics. Throw in crimes men and women commit against romantic rivals, and you end up with a pretty big chunk of violent felonies.

Why do romantic relationships drive so many to act so aggressively? "Intersexual competition and intimate partner violence have been very beneficial adaptations in terms of reproductive success," says David Buss, a professor of psychology at the University of Texas at Austin and the author of *The Murderer Next Door*.

Buss says that for much of our species' history, men willing to fight and even kill male competitors were more likely to retain their mates and therefore pass their DNA on to offspring. Within a relationship, men may have found physical violence directed at a partner an effective—if savage—means of preventing infidelity.

In some cases, murdering an unfaithful mate may also have conferred some perverse "fitness benefits" on males. If a woman had sex with other men, her cuckolded partner could end up devoting his resources to caring for that male's offspring. "Paternity uncertainty is a major predictor [of homicide]," Buss says. Even when paternity is known, violence can follow. Children are up to 100 times as likely to be abused or killed by a stepparent as by a biological parent.

Although men are typically the aggressors, women are also capable of extreme acts of violence. Once again, infidelity is often the cause. In some specific circumstances, Buss says, women are much more likely than men to kill their own children. While rare, this form of infanticide tends to occur in predictable contexts. "A woman who is young and has many years of reproduction ahead of her and no male provider—that's a predictor," Buss says. Tens of thousands of years ago, a woman in this position would have been unable to care for a child on her own, and the infant would probably have made her unappealing to prospective mates.

Not all evolutionary psychologists agree with Buss. "In terms of humans having multiple adaptations to murder, I've taken what some might consider an extreme position," he says. He also makes it clear that most people dealing with infidelity or similar triggers do not react violently.

But crime statistics often do support Buss's take that evolution has equipped humans with multiple "homicidal adaptations." It's an ugly—but perhaps unavoidable—truth. —M.H.