

COMMENT



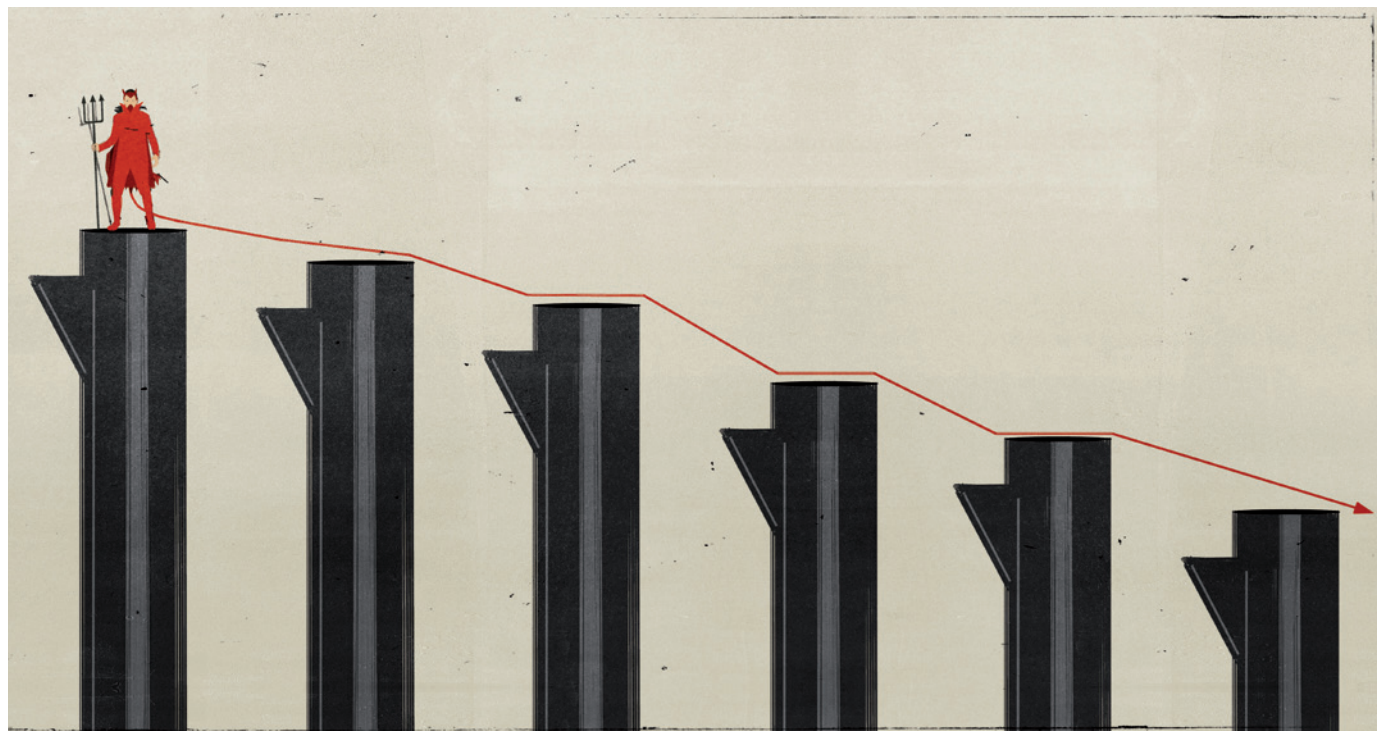
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Taming the devil within us

We are getting smarter, and as a result the world is becoming a more peaceful place, says **Steven Pinker**.

The twentieth century was the bloodiest in history.” This frequently asserted claim is popular among the romantic, the religious, the nostalgic and the cynical. They use it to impugn a range of ideas that flourished in that century, including science, reason, secularism, Darwinism and the ideal of progress. But this historical factoid is rarely backed up by numbers, and it is almost certainly an illusion. We are prone to think that modern life is more violent because historical records from recent eras are more complete, and because the human mind overestimates the frequency of vivid, memorable events. We also care more about violence today. Ancient histories are filled with glorious conquests that today would be classified as genocide,

and the leaders known to history as So-and-So the Great would today be prosecuted as war criminals.

Attempts to quantify the death tolls from earlier centuries suggest that many of the collapsing empires, conquering maniacs, horsetrader invasions, slave trades and annihilations of native peoples had individual death tolls that, adjusted for population, are comparable to those of each of the two world wars. War before civilization was even bloodier. Forensic archaeology and ethnographic demography suggest that around 15% of people living in non-state societies died violently — five times the proportion of violent deaths in the twentieth century from war, genocide and man-made famines combined.

Moreover, a century has 100 years, not

just 50, and the second half of the twentieth century has astonished military historians with its unprecedented avoidance of wars between developed states and between great powers. Civil wars did proliferate in the years after the two world wars, but civil wars tend to be less destructive than interstate wars, and they, too, have declined in number and in death tolls. There were far fewer deaths in war in the first decade of the twenty-first century than any of the five decades preceding it.

The obsolescence of major war is just one of many historical declines of violence. European homicide rates have dropped at least 30-fold since the Middle Ages, from about 40 per 100,000 people per year in the fourteenth century to 1.3 at the end of the twentieth. Barbaric customs that were ▶

► unexceptional for millennia, such as human sacrifice, the persecution of witches and heretics, chattel slavery, blood sports, punitive torture and mutilation, sadistic executions (burning, breaking, crucifixion, disembowelling, impalement) and execution for victimless crimes have been abolished in most of the world. The past 50 years have seen a cascade of rights revolutions — civil, women's, children's, gay, animal — which have demonstrably driven down rates of lynching, pogroms, rape, spousal abuse, child abuse, spanking, gay-bashing, hunting and callousness to laboratory animals.

The historical decline of violence (see 'Murder's downfall') is a challenging scientific puzzle for anyone interested in human nature. Violence is not just a cultural fad that is falling out of fashion, like bustles and spats. Aggressive behaviour is found throughout the history and prehistory of our species, and shows no signs of having been invented in one place and spread to the others. The human brain has conserved mammalian circuits for rage and dominance, and boys universally play-fight. A majority of adults have homicidal fantasies and enjoy violent entertainment, and variation in violent tendencies across individuals is substantially heritable.

At the same time, not a single category of violence has stayed at a fixed level over the course of history. Whatever causes violence, it is not a perennial urge like hunger, sex or sleep.

THE BETTER ANGELS

So what has caused the drop in violence? Little if any of the decline can be explained by natural selection. Biological evolution has a speed limit measured in generations, and many of the declines have unfolded over decades or years.

The most promising explanation, I believe, is that the components of the human mind that inhibit violence — what Abraham Lincoln called "the better angels of our nature" — have become increasingly engaged.

Today, the most famous of the better angels is empathy. It is being studied in children, chimpanzees, undergraduates and even single neurons, and has been lauded in bestselling books as the solution to humanity's problems. Indeed, an expansion of empathy — fostered by literacy, travel and cosmopolitanism — helps to explain why people today abjure cruel punishments and care more about the human costs of war.

But empathy cannot be the whole story. Contrary to the popular notion that mirror neurons make primates reflexively empathic, empathy is a fickle emotion. It is triggered by cuteness, good looks, kinship, friendship, similarity and solidarity. And it is easily shut off or converted to its opposite, *schadenfreude*, by competition or revenge.

The moral sense — another hot research topic in psychology — is also less peaceable than one might think. No society defines virtue solely by the avoidance of harm. Moral intuitions also emerge from concerns such as betraying a coalition, contaminating oneself or one's community, and defying or insulting an authority. Because people feel that moral infractions are legitimately punishable, an expansive definition of morality provides an expansive list of offences for which the sinner can be violently punished, including homosexuality, licentiousness, blasphemy, heresy, indecency and desecration of sacred symbols.

Indeed, because morality furnishes people with motives for violent acts that bring them no tangible benefit, it is more often the problem than the solution. If you added up all the homicides committed in pursuit of rough justice, the casualties of religious and revolutionary wars, the people executed for victimless crimes and the eggs broken in genocides to make utopian omelettes, they would surely outnumber the fatalities from amoral predation and conquest.

The most important psychological contributor to the decline of violence over the long term may instead be reason: the cognitive faculties, honed by the exchange of ideas through language, that allow us to understand the world and negotiate social arrangements.

Reason, admittedly, seems to have fallen on hard times. Popular culture is plumbing new depths of dumbness, and political discourse has become a race to the bottom. We are living in an era of scientific creationism, New Age flimflam, 9/11 conspiracy theories and psychic hotlines.

Even scientists are joining in. Human beings are led by their passions, say many psychologists, and deploy reason only to rationalize gut feelings after the fact. Behavioural economists exult in showing how human behaviour departs from the rational-actor theory, and sympathetic journalists waste no opportunity to smack the theory

around. The implication is that because irrationality is inevitable, we may as well lie back and enjoy it.

But I have come to believe that both the pessimistic assessment of the state of reason in the world, and any sentiment that this would not be such a bad thing, are mistaken. For all their foolishness, modern societies have been getting smarter, and all things being equal, a smarter world is a less violent world.

Why might reason lead to less violence? The most obvious pathway is captured

in French writer Voltaire's quip that "those who can make you believe absurdities can make you commit atrocities". A debunking of hogwash — such as the beliefs that gods

demand sacrifices, heretics go to hell, Jews poison wells, animals are insensate, Africans are brutish and kings rule by divine right — will undermine many rationales for violence.

Reason can also lead people to want less violence. This may seem to violate Scottish philosopher David Hume's dictum that "reason is, and ought to be, only the slave of the passions". Reason, by itself, can lay out a road map to peace or to war, to tolerance or to persecution, depending on what the reasoner wants.

LIFE OVER DEATH

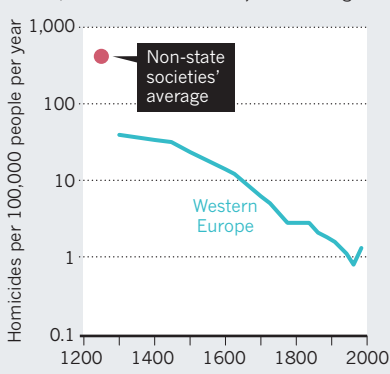
But, two conditions will tend to align reason with nonviolence. The first is that reasoners care about their own well-being. They prefer to live rather than die, keep their body parts intact and spend their days in comfort rather than in pain. Logic does not force them to have those prejudices. Yet any product of natural selection — indeed, any agent that has endured the ravages of entropy long enough to be reasoning in the first place — is likely to have them.

The second condition is that a reasoner be part of a community of reasoners who can impinge on their well-being and who can comprehend each other's reasoning. And indeed *Homo sapiens* is not just a rational animal but a social and language-using one. Self-interest and sociality combine with reason to lay out a morality in which non-violence is a goal. If one agent says, "It's bad for you to hurt me", he has also committed to "It's bad for me to hurt you", because logic cannot tell the difference between 'me' and 'you'. Therefore as soon as you try to persuade someone to avoid harming you by appealing to reasons why he shouldn't, you're sucked into a commitment to the avoidance of harm as a general goal.

Humans, of course, were not created in a state of original reason. We descended

MURDER'S DOWNFALL

Homicide was thirty times more frequent in the Middle Ages in Europe than it is today, and the average in non-state societies (such as tribes in New Guinea, Africa and the Americas) was even higher.



from ape-like primates, spent hundreds of millennia in small bands and evolved our cognitive processes in the service of foraging and socializing. Only gradually, with the appearance of literacy, cities and long-distance travel and communication, could our ancestors cultivate their reason and apply it to a broader range of concerns. As collective rationality is honed over the ages, it will clamp down on short-sighted and hot-blooded impulses towards violence, and force us to treat a greater number of agents as we would have them treat us.

To be sure, it remains puzzling that it took us so long to figure this out. Why did human rationality need thousands of years to conclude that something might be a wee bit wrong with slavery? Or with beating children, raping unattached women, exterminating native peoples, imprisoning homosexuals or waging wars to assuage the injured vanity of kings?

Perhaps humans have been getting nicer because they have been getting smarter.

GETTING SMARTER ALL THE TIME

In the early 1980s, the philosopher James Flynn at the University of Otago in Dunedin, New Zealand, had a eureka moment when he noticed that the companies that sell IQ tests periodically renormalize the scores. Later generations, given the same set of questions as earlier ones, got more of them correct. Flynn scoured the world for test scores, and the result was the same in every sample: IQ scores had increased throughout the twentieth century. An average teenager today, if he or she could time-travel back to 1910, would have had an IQ of 130, and a typical person of 1910, if time-transported forward to the present, would have a mean IQ of 70.

The increase is not in general intelligence, the heritable factor underlying all the components of intelligence (such as vocabulary, arithmetic and knowledge). It is concentrated in abstract reasoning, such as noting similarities ("What do a pound and an inch have in common?") and analogies ("BIRD is to EGG as TREE is to what?"). The most likely causes are increases in the duration and quality of schooling, the spread of symbol-manipulation into work and leisure, and the trickling down of scientific and analytical reasoning into everyday life.

Could an expansion of reason really have driven down violence? Consider the statements of the great men of a century ago, such as Theodore Roosevelt, who wrote: "I don't go so far as to think that the only good Indians are dead Indians, but I believe nine out of ten are, and I shouldn't like to inquire too closely into the case of the tenth", or the young Winston Churchill, who cheerfully carried out atrocities in British colonies in Asia and Africa and wrote: "I hate Indians.



Peacekeepers, such as NATO in Kosovo, are highly successful, an example of how reason has tamed violence.

They are a beastly people with a beastly religion." Today we are stunned by the compartmentalized morality of these men, who in many ways were enlightened when it came to their own race. Yet they never took the mental leap that would have forced them to treat other races with the same consideration. Today's children have been encouraged to take these cognitive leaps with gentle instruction such as "There are bad Indians and there are good Indians, just like there are bad white people and good white people. You can't tell whether a person is good or bad by looking at the colour of his skin", and "Yes, the things those people do look funny to us. But the things we do look funny to them." Such lessons are not indoctrination but guided reasoning, leading children to conclusions they can accept by their own standards, and the resulting understanding has become second nature.

Is there any evidence that enhancements in thinking can make us less violent? Cognitive neuroscience suggests that morality is driven not just by the limbic circuits underlying emotion but also by parts of the prefrontal cortex that underlie abstract thought. And the historical record shows that many humane advances were initiated in the realm of ideas. Philosophers prepared careful briefs against slavery, despotism, torture, religious persecution, cruelty to animals, harshness to children, violence against women and frivolous wars. These arguments were disseminated in pamphlets and bestsellers and debated in salons and pubs, and then in conventions and legislatures that implemented reforms.

There are also more direct links between reason and peace. On average, and holding all else constant, people with greater reasoning abilities commit fewer violent crimes, are more likely to cooperate in experimental games, and have more classically liberal

attitudes, such as opposition to racism and sexism. And on average, holding all else constant, societies with higher levels of educational and intellectual achievement are more receptive to democracy, and have lower rates of civil war.

Advocates of reason and its gifts, such as science, technology and secular democracy, should no longer feel that they must be on the defensive. The association between the best and the worst of the twentieth century was always crude, and it is time to re-examine it in the light of statistically literate history. Almost seven decades after the horrors of the first half of the twentieth century, we now see that they were not a new normal or harbingers of worse to come, but a local high from which the world would bumpily descend. The ideologies behind them were atavisms that ended up in the dustbin of history, and the ideal of universal human rights, which would have seemed saccharine or incoherent to our ancestors, has become the moral commonplace of our age.

The forces of reason have not, of course, pushed steadily in one direction; nor will they ever bring about utopia. But reason has done more than enhance our health, experience and knowledge — it has, quantifiably, made the world a less violent place. ■

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