

PROFILES IN SCIENCE

Human Nature's Pathologist

By Carl Zimmer

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CAMBRIDGE, Mass. — Steven Pinker was a 15-year-old anarchist. He didn't think people needed a police force to keep the peace. Governments caused the very problems they were supposed to solve.

Besides, it was 1969, said Dr. Pinker, who is now a 57-year-old psychologist at Harvard. "If you weren't an anarchist," he said, "you couldn't get a date."

At the dinner table, he argued with his parents about human nature. "They said, 'What would happen if there were no police?' " he recalled. "I said: 'What would we do? Would we rob banks? Of course not. Police make no difference.' "

This was in Montreal, "a city that prided itself on civility and low rates of crime," he said. Then, on Oct. 17, 1969, police officers and firefighters went on strike, and he had a chance to test his first hypothesis about human nature.

"All hell broke loose," Dr. Pinker recalled. "Within a few hours there was looting. There were riots. There was arson. There were two murders. And this was in the morning that they called the strike."

The '60s changed the lives of many people and, in Dr. Pinker's case, left him deeply curious about how humans work. That curiosity turned into a career as a leading expert on language, and then as a leading advocate of evolutionary psychology. In a series of best-selling books, he has argued that our mental faculties — from emotions to decision-making to visual cognition — were forged by natural selection.

He has also become a withering critic of those who would deny the deep marks of evolution on our minds — social engineers who believe they can remake children as they wish, modernist architects who believe they can rebuild cities as utopias. Even in the 21st century, Dr. Pinker argues, we ignore our evolved brains at our own peril.

Given this track record, Dr. Pinker's newest book, published in October, struck some critics as a jackknife turn. In "The Better Angels of Our Nature" (Viking), he investigates one of the most primal aspects of life: violence.

Over the course of 802 pages, he argues that violence has fallen drastically over thousands of years — whether one considers homicide rates, war casualties as a percentage of national populations, or other measures.

This may seem at odds with evolutionary psychology, which is often seen as an argument for hard-wired Stone Age behavior, but Dr. Pinker sees that view as a misunderstanding of the science. Our evolved brains, he argues, are capable of a wide range of responses to their environment. Under the right conditions, they can allow us to live in greater and greater peace.

"The Better Angels of Our Nature" is full of the flourishes that Dr. Pinker's readers have come to expect. He offers gruesomely delightful details about cutting off noses and torturing heretics. Like his other popular books, starting with "The Language Instinct" (1994), it is a far cry from his first published works in the late 1970s — esoteric reports from his graduate work at Harvard, with titles like "The Representation and Manipulation of Three-Dimensional Space in Mental Images."

From Irregular Verbs, a Career

He came to Harvard after graduating from McGill University in 1976. At the time, he was convinced that a life in psychology would allow him to ask the big questions about the mind and answer them with scientific rigor. “It was the sweet spot for me in trying to understand human nature,” he said.



BEFORE THE PH.D. Steven Pinker in 1971 with fellow Wagar High School students on a Canadian television quiz show.

But he quickly realized that such explorations would have to wait. “You can’t do a Ph.D. thesis on human nature,” he said. “So I studied much smaller problems — academic bread-and-butter problems.”

He began by studying how we picture things in our heads, looking for the strategies people use to make sense of the visual information continually flooding the brain. As he worked on his dissertation, however, he recognized that many other scientists were also tackling the same problems of visual cognition.

“There were a lot of people studying them who were doing a better job than I could,” he said. So he looked for another problem.

The field he settled on was language, and it proved to be consuming. For Dr. Pinker, it was “a window into human nature.” Linguists have long debated whether language is a skill we develop with all-purpose minds, or whether we have innate systems dedicated to it.

Dr. Pinker has focused much of his research on language on a seemingly innocuous fluke: irregular verbs. While we can generate most verb tenses according to a few rules, we also hold onto a few arbitrary ones. Instead of simply turning “speak” into “speaked,” for example, we say “spoke.”

As a young professor at the Massachusetts Institute of Technology, he pored over transcripts of children’s speech, looking for telling patterns in the mistakes they made as they mastered verbs. Out of this research, he proposed that our brains contain two separate systems that contribute to language. One combines elements of language to build up meaning; the other is like a mental dictionary we keep in our memory.

This research helped to convince Dr. Pinker that language has deep biological roots. Some linguists argued that language simply emerged as a byproduct of an increasingly sophisticated brain, but he rejected that idea. “Language is so woven into what makes humans human,” he said, “that it struck me as inconceivable that it was just an accident.”

Instead, he concluded that language was an adaptation produced by natural selection. Language evolved like the eye or the hand, thanks to the way it improved reproductive success. In 1990 he published a paper called “Natural Language and Natural Selection,” with his student Paul Bloom, now at Yale. The paper was hugely influential.

It also became the seed of his breakthrough book, “The Language Instinct,” which quickly became a best seller and later won a place on a list in the journal *American Scientist* of the top 100 science books of the 20th century.

Dr. Pinker used the success of the book to expand the scope of his work. “It gave me the freedom to return to these much larger questions, informed by what I could learn about real humans,” he said.

For the past 17 years, he has alternated between wide-ranging books on human nature, like “How the Mind Works” (1997) and “The Blank Slate” (2002), and books focused on his research, like “Words and Rules” (1999), about irregular verbs. He writes at the apartment he shares with his wife, the novelist Rebecca Goldstein, and at a house on Cape Cod.

Cause for Optimism

As a public intellectual, Dr. Pinker has engaged in a series of high-profile debates about evolutionary psychology. In 1997, the Harvard paleontologist Stephen Jay Gould accused him and other evolutionary psychologists of seeing fine-tuned adaptations in every facet of human existence.

Evolutionary psychology, Dr. Gould wrote, “could be quite useful if proponents would trade their propensity for cultism and ultra-Darwinian fealty for a healthy dose of modesty.”



WORDPLAY Dr. Pinker, in 1991 at M.I.T., showed how a puppet figured in his study of language development in children (here, a colleague's daughter).

Dr. Pinker gave as good as he got. He declared that Dr. Gould was “scrambling things so that his opponents have horns and he has a halo.” (Dr. Gould died in 2002.)

Then there is the question of male and female minds. In 2005, Lawrence H. Summers, then president of Harvard, caused an uproar by speculating that one reason for the underrepresentation of women in tenured science and engineering positions was “issues of intrinsic aptitude.”

Dr. Pinker (who had moved from M.I.T. to Harvard in 2003) came to Dr. Summers's defense, and ended up in a high-profile debate with a fellow Harvard psychologist, Elizabeth Spelke.

Dr. Pinker argued that there were small but important biological differences in how male and female brains worked. Dr. Spelke argued that these differences were minor, and that evolutionary psychology had no part to play in the debate.

"The kinds of careers people pursue now, the kinds of choices they make, are radically different from anything that anybody faced back in the Pleistocene," Dr. Spelke said at the close of the debate. "It is anything but clear how motives that evolved then translate into a modern context."

In a way, "The Better Angels of Our Nature," is a response to this kind of critique. He says the idea for the book took root in his mind around the time of his debate with Dr. Spelke, when he stumbled across graphs of historical rates of violence. In England, for example, homicide rates are about a hundredth of what they were in 1400.

In 2006 Dr. Pinker was invited to write an essay on the theme "What Are You Optimistic About?" His answer: "The decline of violence."

The reaction to the essay was swift and surprising. "I started hearing from scholars from fields that I was barely aware of, saying, 'There's much more evidence on this trend than you were aware of,' " he said.

Researchers sent him evidence that violence had declined in many other places, and in many different forms, from the death rate in wars to rates of child abuse. "I thought, 'This is getting to be a conspiracy.' It was beyond my wildest dreams. I realized there was a book to be written."

Dr. Pinker set out to synthesize all these patterns and find an explanation for them. And in the process, he wanted to rebut stereotypes of evolutionary psychology.

"There's a common criticism of evolutionary psychology that it's fatalistic and it dooms us to eternal strife," he said. "Why even try to work toward peace if we're just bloody killer apes and violence is in our genes?"

Instead, Dr. Pinker argues that evolutionary psychology offers the best explanation for why things have gotten better, and how to make them even better.

Civilization's Effect

"Better Angels" has impressed many experts on historical trends of violence.

"Steven Pinker's great achievement is to weave these trends into a much larger pattern of reduced violence, greater empathy and, indeed, a comprehensive civilizing process," said Nils Petter Gleditsch, a research professor at the Peace Research Institute Oslo in Norway.



Rebecca Goldstein

Human violence started dropping thousands of years ago with the formation of the first states, Dr. Pinker argues. For evidence, he points to archaeological studies and observations of stateless societies today. With the birth of the first states, rates of violence began to fall, and they have dropped in fits and starts ever since.

Dr. Pinker grants that these results may be hard to believe, but he thinks that is more a matter of psychology than of data. The emotional power in stories of violence — whether on the nightly news or on “Law and Order” — can distract us from the long-term decline.

He acknowledges, of course, that the past century produced two horrific world wars. But he says they do not refute his argument. Statistical studies of war reveal a lot of randomness built into their timing and size. The 20th century, he argues, suffered some particularly bad luck.

Dr. Pinker finds an explanation for the overall decline of violence in the interplay of history with our evolved minds. Our ancestors had a capacity for violence, but this was just one capacity among many. “Human nature is complex,” he said. “Even if we do have inclinations toward violence, we also have inclination to empathy, to cooperation, to

self-control.”

Which inclinations come to the fore depends on our social surroundings. In early society, the lack of a state spurred violence. A thirst for justice could be satisfied only with revenge. Psychological studies show that people overestimate their own grievances and underestimate those of others; this cognitive quirk fueled spiraling cycles of bloodshed.

But as the rise of civilization gradually changed the ground rules of society, violence began to ebb. The earliest states were brutal and despotic, but they did manage to take away opportunities for runaway vendettas.

More recently, the invention of movable type radically changed our social environment. When people used their powers of language to generate new ideas, those ideas could spread. “If you give people literacy, bad ideas can be attacked and experiments tried, and lessons will accumulate,” Dr. Pinker said. “That pulls you away from what human nature would consign you on its own.”

And these ideas helped drive down violence even further. Ideas about equality led to women gaining power across much of the world, and “women are statistically more dovish than men,” Dr. Pinker said.

Reviews for the new book have been largely enthusiastic, though not unmixed. In *The New Yorker*, Elizabeth Kolbert called it “confounding,” “exasperating” and “fishy.”

“Hate and madness and cruelty haven’t disappeared,” she concluded, “and they aren’t going to.”

Dr. Pinker’s response was equally scornful. “No honest reviewer would imply that this is the message of the book,” he wrote on his Web site.

Though violence has indisputably declined, he says, it could rise again. But by understanding the causes of the decline, humanity can work to promote peace. He endorses the new book “Winning the War on War” (Dutton/Penguin), by the political scientist Joshua S. Goldstein, which argues that the slogan “If you want peace, fight for justice” is precisely the wrong advice.

If you want peace, Dr. Goldstein argues, work for peace. Dr. Pinker agrees.

“It’s psychologically astute, given the massive amount of self-serving biases,” he said. “In any dispute, each side thinks it’s in the right and the other side is demons.”

The moral of his own book might be, If you want peace, understand psychology.