



Life & Arts

Steven Pinker 11 HOURS AGO

As “9” on the calendar rolls over to a fresh “0”, many people are desperate for a ray of optimism to pierce the gloom of the daily headlines. Having published a hundred graphs documenting human progress, I’m often asked for reassurance that we will overcome our problems and that the coming decade will not just bring intensifying crises and declines.

Progress is a historical fact. The numbers show that over the past seven decades humans have become (on average) longer-lived, healthier, safer, richer, freer, fairer, happier and smarter, not just in the west but worldwide.

Progress is not, however, a natural force. The laws of the universe are indifferent to our wellbeing, with vastly more things that can go wrong than go right. And our species evolved for advantages in the struggle to reproduce, not for happiness or wisdom. The first step in thinking about the future is to reconcile human progress with human nature.

The progress we have enjoyed has come from empowering the better angels of our nature. We are a cognitive species, with the wherewithal to solve problems and the linguistic means to pool solutions. We are a co-operative species, joining forces to achieve outcomes we cannot achieve individually. And we are an intermittently empathetic species, capable of concern with the wellbeing of others.



A queue at a polling station in Colombo, Sri Lanka in November © Getty Images





Voters cast their ballots in Lagos, Nigeria in March © Getty Images

These gifts were amplified by ideas and institutions advocated during the Enlightenment and entrenched after the second world war: reason, science, liberal democracy, declarations of rights, a free press, regulated markets, institutions of international co-operation.

But this progress is invisible to most people because they don't get their understanding of the world from numbers; they get it from headlines. Journalism by its very nature conceals progress, because it presents sudden events rather than gradual trends. Most things that happen suddenly are bad: a war, a shooting, an epidemic, a scandal, a financial collapse. Most things that are good consist either of nothing happening — like a nation that is free of war or famine — or things that happen gradually but compound over the years, such as declines in poverty, illiteracy and disease.

On top of this built-in pessimism, market forces add layers of glumness. People dread losses more than they appreciate gains, so prophets can stoke their vigilance by warning them about looming disasters they may have overlooked. Popular forecasters are not actuaries who extrapolate and adjust medium-term trends but playwrights who titillate our imaginations with high-concept tragedies and horror stories.

So for every Age of Aquarius with electricity too cheap to meter, there are a dozen dystopias. In my lifetime I have survived a thermonuclear third world war, a population bomb, depletion of oil and minerals, a civilisation-ending Y2K bug, weekly 9/11-scale terrorist attacks, and a mushroom cloud from Saddam Hussein. Those who recall the fall of the Berlin Wall as opening a window of optimism have bad memories. Experts at the time warned of revanchism in a unified Germany, a rising sun in Japan and a longing for the stability of a bipolar world. A 1994 Atlantic cover story

foretold a “[coming anarchy](#)” of world wars, spiralling crime, exploding Aids and the break-up of Nigeria, China, India and the US.

So how can we think about the 2020s without melodrama? Progress does not literally have momentum, but many of its drivers are not going away. Science and medicine continue to explore their endless frontiers and should keep delivering increments of understanding that lengthen and enrich our lives. It’s true that the parent ideal of reason is under assault by fundamentalism, fake news and conspiracy theories, as it always has been. But the reach of reason is also expanding through online resources for education and fact-checking, and in movements for evidence-based medicine, policy and philanthropy.

In the moral sphere, the concept of human rights is self-expanding, since mistreatment of arbitrary categories of people withers under scrutiny. Successive generations have applied the ideal to ending religious persecution, despotism, sadistic punishments, legal slavery, callousness towards workers and discrimination against women, ethnic minorities and gay people. Recently it has been extended to sexual harassment, mistreatment of transgender people and oppressive laws in illiberal regions. (In the past decade 13 countries decriminalised homosexuality.) Even the most backward will face pressure to abandon archaic practices that keep girls out of school and women from driving.

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By adopting the [Sustainable Development Goals](#), the 193 countries of the UN committed themselves to audacious targets for slashing poverty, hunger, disease, illiteracy, gender inequality, war and other scourges. Progress toward these goals (other than climate) is continuing and can be tracked on sites like [Our World in Data](#), [Gapminder](#), [Human Progress](#), the [Bill & Melinda Gates Foundation](#) and

[Future Crunch](#). It is unlikely to do a sudden U-turn.

But — as the sustainable [goalkeepers](#) emphasise — “progress is possible, but it is not inevitable”. Poverty, disease and conflict are natural, not unnatural, parts of the human condition, and only the concerted application of reason, science and humanism can push back against their creep.

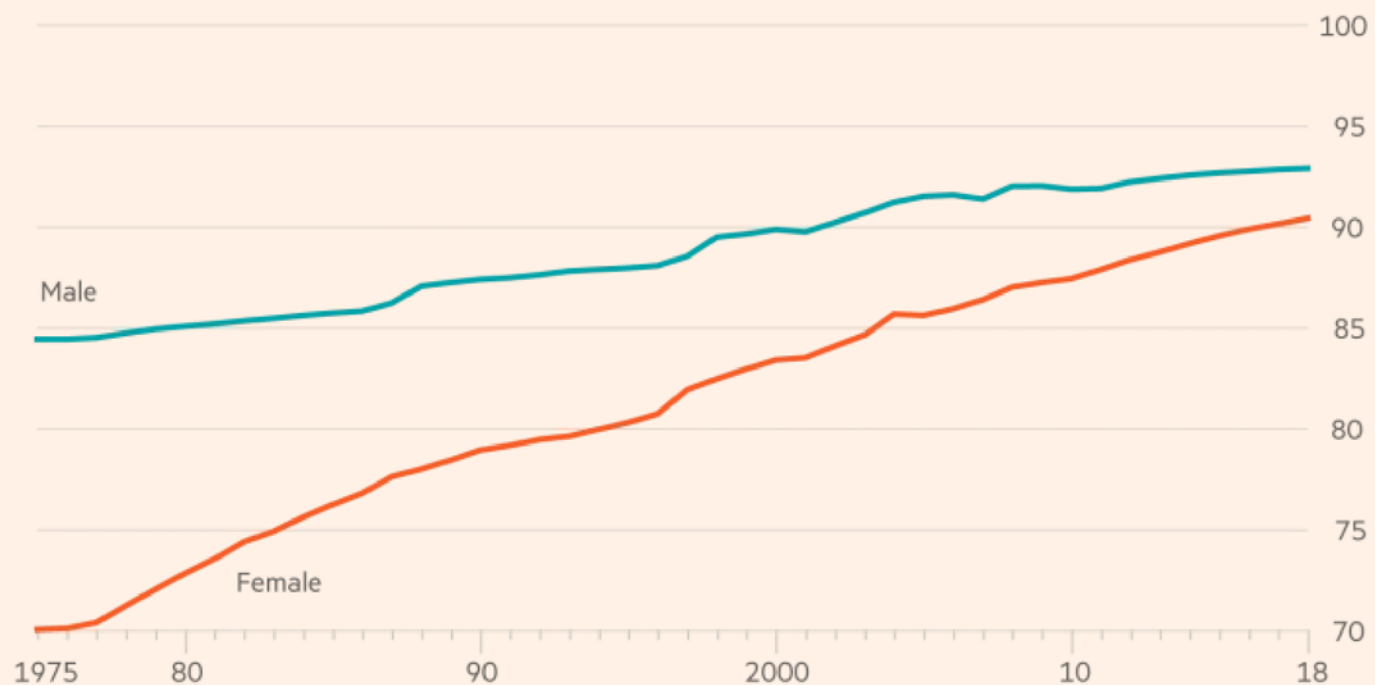
Progress can be threatened not just by complacency but by tribalism, authoritarianism and science denial. Populists such as Donald Trump embody these threats; he treats public discourse not as a means of collectively pursuing an objective reality but as a weapon with which to project dominance. He has blown off the scientific consensus on climate change and suppressed dissemination of data on public health and the environment. He has sown ethnic hostility at home while

rejecting international co-operation in favour of zero-sum economic or political combat. These insults to Enlightenment ideals are not just philosophical; they undermine concrete measures that have driven progress in the past, including democratic checks, free trade, environmental regulation and international agreements.

Though we cannot know how much damage authoritarian populism will do, there are reasons to think it is not the face of the future. Its support is greatest among rural, less-educated, ethnic-majority and older cohorts, all in demographic decline. And even countries that try to hide in a nationalist fortress will increasingly be besieged by crises that are inherently global and cannot be solved without international co-operation, including climate change, ocean degradation, pandemics, migrants, cyber crime, terrorism, piracy, dark money and nuclear proliferation.

The rise of literacy

Literacy rate (%), 15-24 year olds



Source: World Bank
© FT

Democracy, repeatedly declared moribund by schadenfreudian pundits, may be more resilient than they acknowledge. Everyone has read about backsliding in countries such as Turkey, Russia and Venezuela — but fewer have read about the gains in countries such as Georgia, Sri Lanka, Nigeria, Armenia, Malaysia and Ethiopia. According to the [Varieties of Democracy](#) scorecard, during the past decade the number of democracies in the world has hovered in a record-high range, with 99 (55 per cent) in 2018, compared to 87 in 1998, 51 in 1988, 40 in 1978, 36 in 1968 and 10 in 1918.

And in the past year, pressure for democratisation has heated up in protests in Venezuela, Bolivia, Russia, Algeria, Sudan and Hong Kong.

Peace, too, may have staying power. Despite recent scares from Putinism and the Arab Spring, the long peace since the second world war keeps lengthening. Wars between great powers, once chronic, have vanished: the last one pitted the US against China more than 65 years ago. Wars between states continue their slide toward [obsolescence](#), with no more than three in any year since 1945 and none since 2003. Though civil wars persist, the overall [rate of deaths in wars of all kinds](#) plunged a hundredfold between 1950 and 2005, from 22 per 100,000 people per year to 0.2. After rising to 1.5 in 2014 during the horrific Syrian civil war, it halved to 0.7 in 2018. And for all the warnings of a rising China that will inevitably fight its rival hegemon, that country has [rested its fortunes on trade](#), contributed to UN peacekeeping, joined global and regional organisations, kept North Korea on a leash, assisted poor countries with infrastructure rather than weaponry, and not fought a war in 32 years.

Past performance is, of course, no guarantee of future results. Though history is not cyclical, it can be knocked backwards by nasty surprises. It's happened before: the two world wars, the Spanish flu, the outbreak of Aids in Africa, surges in crime and civil war from the mid-1960s to the early 1990s, 9/11. The coming decade will surely bring more, though by definition we cannot know what they are.

Of course, we know what some of the catastrophic threats to gradual progress are. As the bumper sticker notes, one nuclear bomb can ruin your whole day. Contrary to almost 75 years in which doomsday has supposedly been minutes away, no nuclear weapon has been detonated in war since Nagasaki. This suggests that the norms and safeguards against accidental and impulsive launches have [done their job](#).

The decline of war deaths

Per 100,000 people, worldwide



Source: PRIO-UCDP Battles Deaths Dataset
© FT

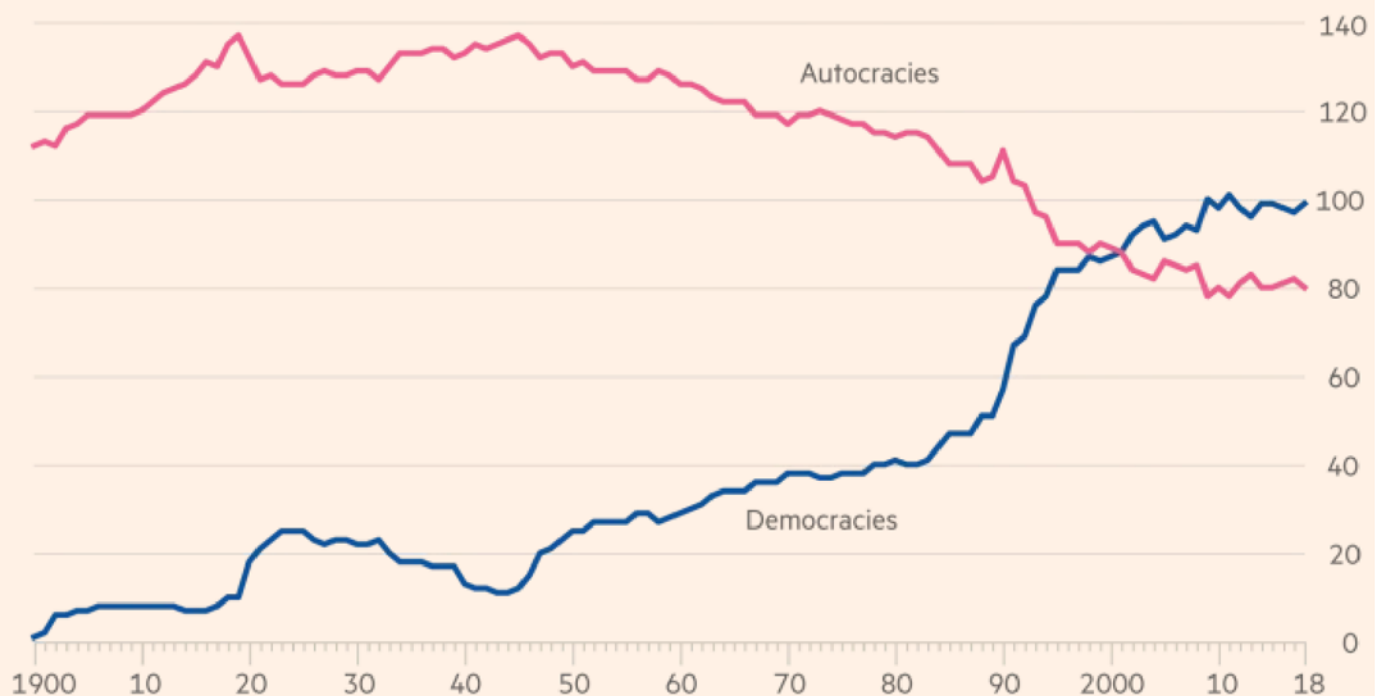
Still, the possible destruction is so horrific that we would be foolish to push our luck indefinitely. The low but disconcerting odds can be pushed still lower by putting the weapons on a longer fuse, and by reducing their number below the threshold of a nuclear winter and eventually to zero. Today's leaders of nuclear states are not exactly moving in this direction, and it's inexcusable that the future of civilisation is a non-issue in an electoral arena obsessed with minor gaffes and scandals.

Also possibly calamitous are pandemics that could hop continents and cybersabotage that could bring down the internet. Here too the safeguards have worked so far, but experts say they must be strengthened.

In a category of its own is climate change, which is more of an approaching asteroid than a spinning roulette wheel. It would be irresponsible to predict either that everything will turn out OK or that we're cooked. Climate salvation, if it comes at all, will not primarily come from shaming oil companies or making personal sacrifices. It will require breakthroughs in policy and technology.

The rise of democracy

Governments worldwide, by political type



Sources: Varieties of Democracy Project; Our World in Data
© FT

The atmosphere is a global commons, where no individual or country has an incentive to stint on emissions because it would suffer all the cost but no benefit unless everyone else makes the same sacrifice. Policies that put a price on carbon are necessary to avert this tragedy, but we have learnt that people react to them not by weatherstripping their windows but by donning yellow vests and setting cars on fire. Such policies must be sweetened with rebates or hidden in dark layers of the economy.

But I suspect that it will be more effective to make clean energy cheap than dirty energy expensive. In the short term this could involve a rapid buildout of nuclear power, as France and Sweden did in the past. In the longer term it will require breakthroughs in storing the intermittent energy from wind and sun, in bioenergy, and in a new generation of small modular fission or fusion reactors. Technological advances will also be needed to electrify industry, reduce greenhouse gases from agriculture, and capture the CO₂ already in the atmosphere.

You can't worry about everything, and my appreciation of the complexity of human nature leaves me sceptical about another common fear: that the 2020s will see a brave new world of high-tech mind-hacking.

Predictions from the 1990s that yuppie parents would soon implant genes for intelligence or musical talent in their unborn children seemed plausible in a decade filled with discoveries of the gene for X. But these findings were destined for the *Journal of Irreproducible Results*, and [today we know](#) that heritable skills are the products of hundreds of genes, each with a minuscule effect, and many with deleterious side-effects. Micromanaging an embryo's genome will always be complex and risky. Given that most parents are squeamish about genetically modified applesauce, it's unlikely they would roll the dice for genetically modified children.

Brain-computer interfaces, except as treatments for paralysis or other disabilities, also strike me as dubious, like trying to adjust your iPhone settings with a soldering gun. Our thoughts are embodied in intricate patterns of connectivity in networks of millions of neurons, using a code that neuroscientists have not cracked. Since we already come equipped with pinpoint interfaces to our neural networks — eyes, ears, fingers, tongues — I doubt that healthy people will see the need for another hole in their head or for a foreign object lodged in their brain.



Facial recognition technology on display at the Artificial Intelligence Exhibition and Conference in Tokyo © Splash News

Some tech prophets sow fear about an advanced artificial intelligence subduing its creators. Others warn of an AI laying waste to the world while single-mindedly pursuing a goal, like inducing tumours in human guinea pigs to find a cure for cancer or asphyxiating us all to de-acidify the oceans. But the [first fear](#) projects human sins like greed and dominance on to the concept of

intelligence. A human-made intelligent system is a problem-solving tool, not a rival primate. And the second refutes itself. It assumes that engineers are so smart that they could invent a system that can cure cancer and undo pollution but so stupid they would forget to give it any other conditions or test how it works before granting it omnipotence over the planet. Moreover, a system that monomaniacally pursued a single goal may be A, but it's hardly I.

And then there's the prospect that fake news and targeted political ads will hijack people's minds and obliterate democracy. Though the spread of disinformation must be combated, research on political messaging shows that it's [not so easy to change people's minds](#). Even traditional TV and direct-mail ads are surprisingly ineffective, and in the 2016 American election fake news and bot-generated tweets made up a tiny fraction of online political traffic and were mostly consumed by zealots. (Few swing voters made up their minds upon reading that Hillary Clinton ran a child sex ring out of a pizzeria.) For that matter online advertising, for all its claims to data-driven microtargeting, is [dubiously effective](#), serving readers with ads for products they have already bought and ads for products they would never buy (like the trunnion tables and high-tech dreidels regularly interpolated into my daily news).

Prudence and experience compel me to hedge these reflections on the next decade. Like soothsayers before me, I will surely be wrong in some of my expectations about continuing progress and the threats it does and does not face.

But I am confident in one thing: the 2020s will be filled with problems, crises and discord, just like the decades before and after. Some people are surprised to hear this champion of progress abjure any hope for a future free of trouble and strife. Why can't we build on our accomplishments and aspire to utopia?

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Fear of an advanced AI subduing its creators projects human sins on to the concept of intelligence

The reason is that we are not blank slates. The hard-won knowledge that has allowed us to marginalise our superstitions and biases must be relearned every generation in a Sisyphean struggle, never perfectly.

Also, human nature imposes permanent trade-offs among the things we value. People differ in talent and temperament, so even in a fair system they will end up unequal, and what pleases some will

inevitably anger others. People are not infinitely wise, so when they are given their freedom, some will use it to screw up their lives, and when they are empowered in a democracy, they may choose leaders and policies that are bad for them. And people are not infinitely selfless. Any policy that

makes most people better off will make some people worse off (say, coal executives), and they will not sacrifice their interests for the good of the group.

Yet the fact of progress shows that these trade-offs do not pin us to a constant level of suffering. Knowledge and technology can bend the trade-offs to give us more of each good. Education, a free press and civil society can remind us that the compromises of democracy are better than the alternatives. And (as physicist David Deutsch has noted) problems are inevitable, but problems are solvable, and solutions create new problems that can be solved in their turn.

Steven Pinker is the Johnstone Professor of Psychology at Harvard University and the author of 10 books, including [‘Enlightenment Now: The Case for Reason, Science, Humanism, and Progress’](#)

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