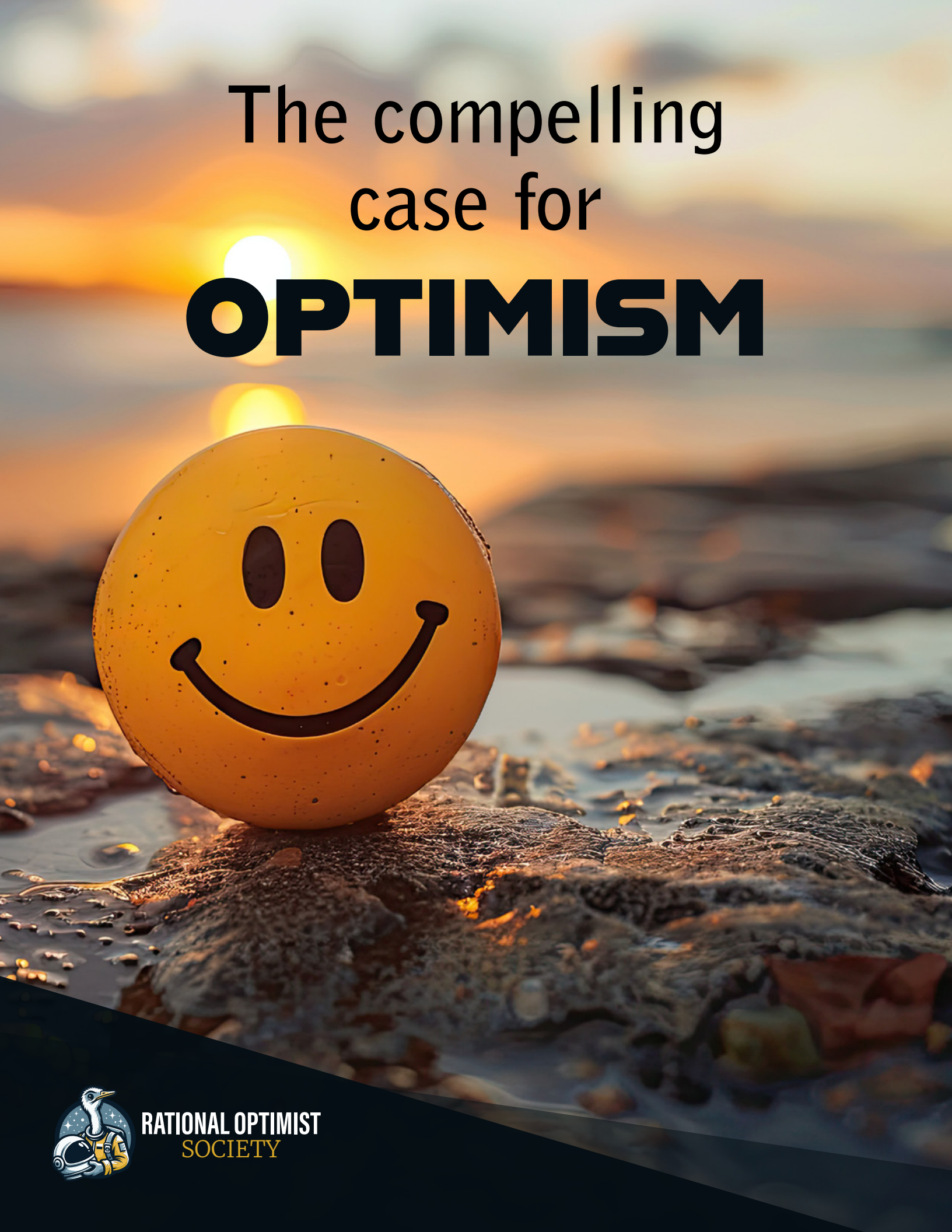
The compelling case for OPTIMISM



RATIONAL OPTIMIST
SOCIETY

The compelling case for optimism

My five-year-old daughter and I recently watched SpaceX's new skyscraper-sized rocket blast off together.

"That's SO cool," she said in awe.



Source: SpaceX

How many kids will this image inspire to become astronauts or rocket scientists?

Kids know "amazing" when they see it. And humans really are amazing, aren't we?

We've gone from scratching out a meager existence in caves to reaching for the stars in a few thousand years. Wait until you see what we're on the brink of achieving next!

In this briefing, you'll learn about five new breakthroughs set to transform our world. These are truly life-altering innovations everyone should know about… but hardly anyone does because corporate media shuns positive news that doesn't fit its "if it bleeds, it leads" business model.

Understanding these innovations will give you an edge in investing, spark fun conversations, and maybe even improve your life. But above all else, you should keep up with the latest breakthroughs because *you are what you consume*.

Compare two kids:



Kid A learns about imminent breakthroughs like abundant, cheap clean energy… new cures for deafness, blindness, and many cancers… and supersonic flight for all. Around the dinner table, her family talks about innovators solving big problems.

Kid B isn't so lucky. He sees the corporate news every day and is exposed to constant cynicism and despair. His family only complains about problems, never discussing solutions.



Who do you think will be happier and accomplish more? The kid instilled with ambition, optimism, and grit? Or the one surrounded by apathy and despair?

We all have a moral duty to raise Kid A.

It's an exciting time to be human, especially when you're in the know. And thanks to advances in computing power, *more things are possible than ever before*.

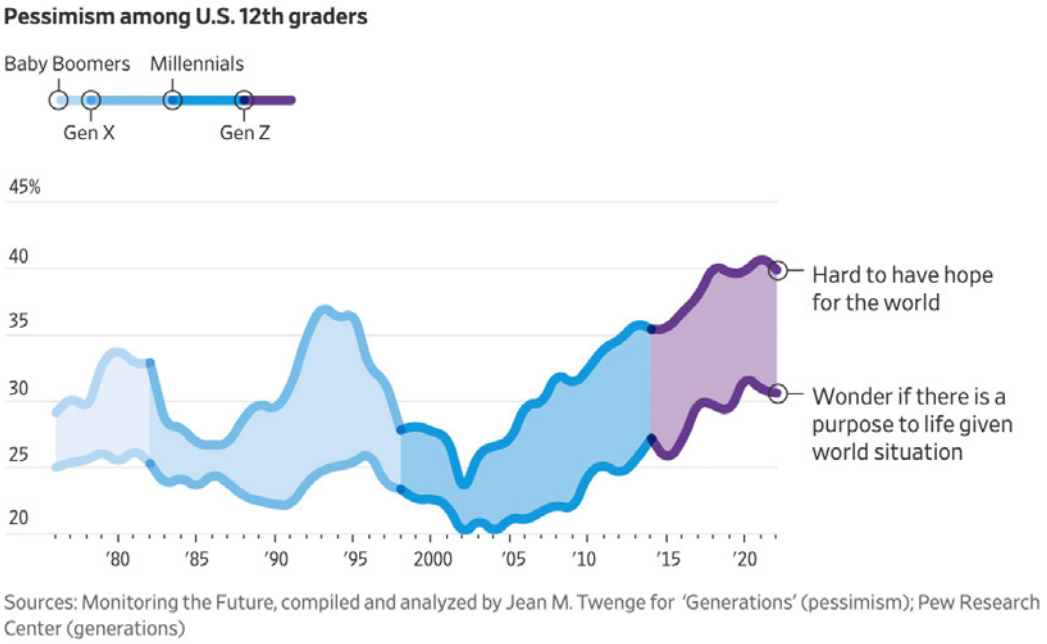
As a new member of the *Rational Optimist Society*, you'll now receive the *Rational Optimist Diary* every Sunday morning. In it, you'll not only hear about positive news and exciting new breakthroughs—you'll meet the entrepreneurs making them happen. Many of these innovators are *Rational Optimist Society* members alongside us.

Although we have a team of researchers and writers at *Rational Optimist Society*, I (Stephen McBride) will personally write *The Diary* every week. It's my passion project.

My motivation for this primarily comes from my kids, who are ages five and three, with a third on the way. Simply put, I refuse to let my kids grow up surrounded by apathy and despair, as so many of today's kids sadly do.

Did you know an unprecedented 40% of US 12th graders say it's "hard to have hope for the world" today?

A record high also wonders if there's a purpose to life given the world situation, according to a long-running University of Michigan survey:

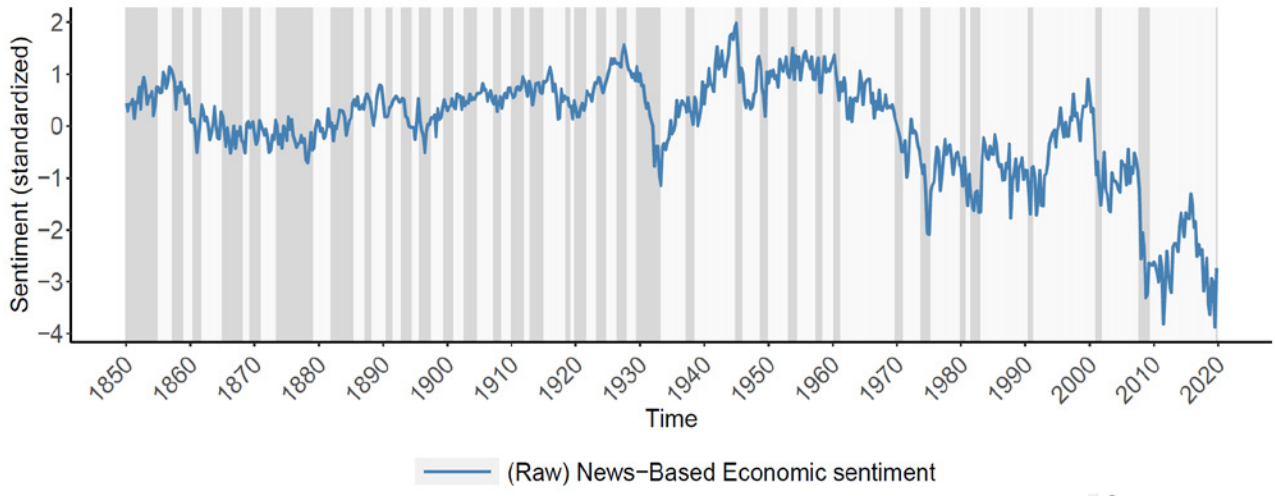


Source: Jean Twenge

I mostly blame the media. News has always tilted negatively. [But a 2024 study by the NBER confirms it's worse than ever.]

Researchers studied newspapers going back to 1850 and concluded **the sentiment of news today is worse than during the Great Depression.**

Figure 4: National Economic and Non-economic Sentiment



Source: NBER

Objectively, we live in the richest, most abundant, and technologically advanced society in history. Yet corporate media blares doom… and social media amplifies it.

They even censor positive news in a blatant attempt to tightly control the narrative.

It's like they want us to be demoralized and scared. Imagine what America will look like in 10 years if rational optimism loses, and today's demoralized and cynical kids grow into tomorrow's leaders.

Time to stand up and say, "ENOUGH."

That's what the *Rational Optimist Society* is all about: opening your eyes to the true state of the world—including its many problems—and celebrating the innovators pushing humanity forward (and helping them however we can).

In the second half of this briefing, I'll walk you through five eye-opening charts on the state of the world that everyone should know but most people don't.

Let's go!

Part 1:

5 breakthroughs transforming our world right now

#1: Mini nuclear reactors

We've had the solution to climate change for 80 years: nuclear power.

Contrary to what many people still believe, nuclear is the cleanest, safest, and most abundant energy source known to man. No one seriously disputes these facts.

Nuclear could be the cheapest source of energy too if bureaucrats got out of the way. Abundant nuclear power brings $10/month energy bills into the realm of possibility.

That's why mini nuclear reactors are so exciting.

Here's Bill Gates (center) ceremonially breaking ground on America's first "mini" nuclear reactor:



Source: GatesNotes

Gates's startup, TerraPower, is building a nuclear plant in Wyoming that's small enough to fit in your garage… but powerful enough to provide energy for an entire city!

It's similar to the reactors that power nuclear submarines. They're so safe that crews sleep just a few feet away from these "boilers," which hold enough energy to power the sub for years without refueling. They've never had an accident.

Yet America has only built one new nuclear plant since 1980. It cost $30 billion and took 14 years to complete. Why? Regulation. Builders must submit up to 2 million pages of documents to get a new reactor approved. It'd take four years for a person to read through that.

TerraPower's reactors are like the IKEA furniture of atomic energy. They can be mass-produced in a factory. This will allow TerraPower to bang out 50 mini power plants in the time it takes to build one giant cooling tower today.

Mini reactors should also speed up approval times. Today's nuclear plants are one-off bespoke projects akin to building a football stadium. That means thousands of parts must be newly certified with each build.

But when we can mass-produce parts in a factory, they can be validated once and then used in thousands of reactors.

TerraPower's mini nuclear reactors could kickstart a new nuclear age. That's key because the lack of cheap, abundant energy is what's holding back many life-improving breakthroughs.

Cheap nuclear power is a “master key” that could make breakthroughs like flying cars, desalinization plants that pump out clean drinking water, and Mars-bound rockets possible.

Austin-based Aalo Atomics is another startup building portable reactors small enough to fit inside a NYC apartment. Aalo wants to make it possible to get a new reactor firing in just 60 days. That’s faster than most home renovations!

Then there’s Oklo, whose Aurora microreactor can run on nuclear waste. It’s like making a car that runs on other cars’ exhaust.

I hope you’re ready for a nuclear renaissance because it’s coming.

It’s not a bad idea to encourage your kids to consider a career in nuclear engineering.

#2: Supersonic jets

Imagine hopping on a plane in New York, catching a quick nap, and waking up in London three hours later.

This could be our reality thanks to a recent breakthrough by supersonic startup Boom. Its jet will fly at roughly 1,120 mph—twice as fast as current airliners.

Here’s “V1” of Boom’s supersonic jet successfully completing its second test flight over California:



Source: Boom

Boom recently built the first supersonic jet factory in the US. And it's already received 130 orders from airlines, including United Airlines and American Airlines.

Boom designed the shape of its jet to deafen sonic booms, so they sound more like a soft thump than an earth-shattering roar.

The history of supersonic passenger jets is fascinating and will make you shake your head in disbelief.

The Concorde was ferrying passengers around the world at supersonic speeds in the '70s. But in tests over Oklahoma City, 3% of residents raised hell complaining they couldn't live with sonic booms, which sound roughly as loud as thunder on the ground.

That's a problem, no doubt. But instead of encouraging innovators to solve it, the US government instead banned supersonic flights over land, which essentially killed the industry.

Boom's breakthrough is the first step in a revival. In short, its new deafening technology means its supersonic jets will be able to fly anywhere.

And our dreams of crossing the Atlantic in under three hours don't only depend on Boom. Astro Mechanica is another startup tackling this problem. It's building an adaptive engine that can fly efficiently at all speeds.

It plans to use its engine to first launch satellites into space and then build airplanes.

A friend who worked in the supersonic industry told me he favors Astro Mechanica's "end around" approach. Test out the engine in less regulated space, then take what you learned and create an aircraft.

Some will say supersonic jets are just toys for rich people. True, flights will be expensive to start. But the one thing we know about technology is that when it's allowed to flourish, it makes things better, faster, and cheaper.

It's a shame we've had virtually no advances in flight speed in 50 years. In fact, we've gone backward. If innovators had been allowed to do their thing, we'd probably all be flying across the Atlantic at supersonic speeds already.

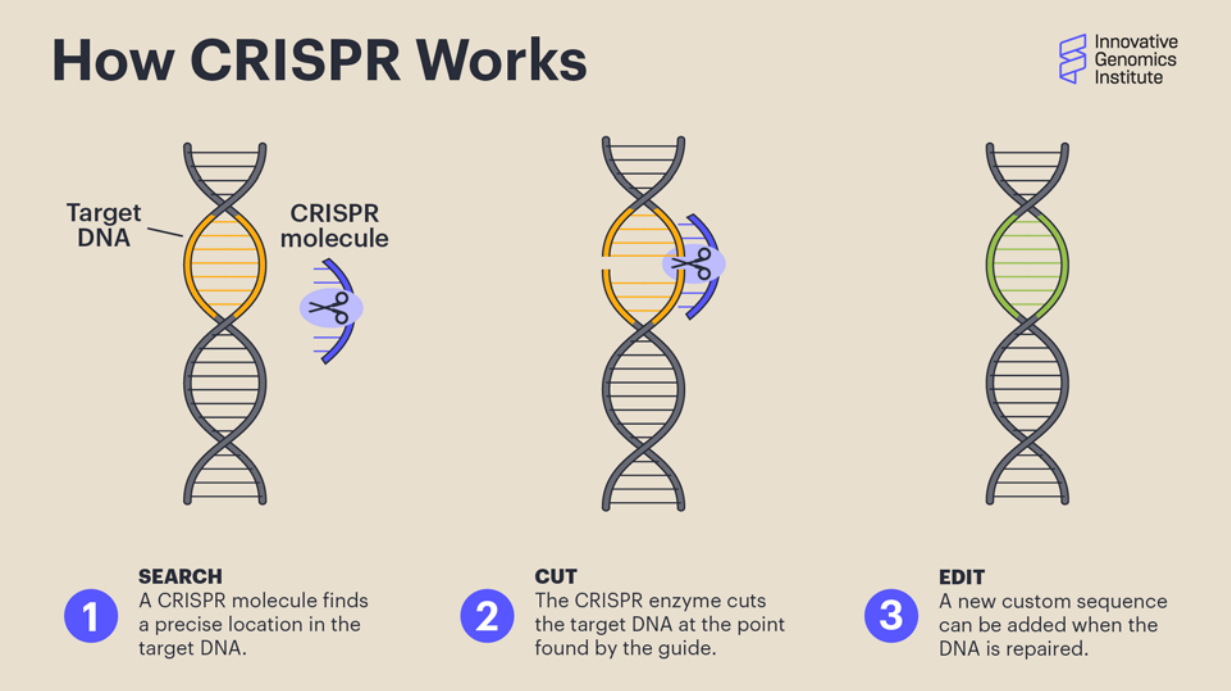
Better late than never. Boom plans to have its supersonic jets flying by the end of the decade. And it estimates a round-trip ticket across the Atlantic will cost $5,000. Take my money now.

Time to go supersonic again.

#3: A one-two punch that'll cure the incurable.

Fourteen-year-old Antonio had multiple surgeries to restore his sight. They all failed.

As a last hope, doctors gave him a special kind of gene-editing eyedrop. Often referred to as "**CRISPR**," gene editing allows scientists to "cut" out bad genes and replace them with healthy genes.



Source: Innovative Genomics Institute

Antonio's doctors essentially infused regular eyedrops with gene editing technology. He used them once a month for about a year, and now he can see for the first time ever!

This innovation will allow kids who would've stared into darkness their whole lives to achieve their dreams. Innovation rocks.

CRISPR was invented about a decade ago. Scientists have been working in labs for 10 years, tinkering with how to turn this invention into real cures. We're finally seeing the fruits of their work.

The first-ever gene editing therapy was approved in America and the UK late last year.

CRISPR will help us tackle thousands of diseases, which today are "incurable." There's real hope that the word "incurable" will become obsolete in 50 years.

The only health breakthrough possibly more exciting than CRISPR is **mRNA**.

Moderna and Merck teamed up to design a jab to tackle melanoma—the deadliest form of skin cancer. Patients who took the shot during trials were half as likely to die or have their cancer come back after three years compared to normal treatments.

This isn't a vaccine. It doesn't stop us from getting cancer—although scientists are working on literal "cancer blockers," too.

The shot is given to patients who have surgery to remove tumors. The vaccine trains their bodies to target leftover and new cancer cells. It's the opposite of chemo, which attacks a tumor by attacking the whole body, often leaving the patient violently sick.

You likely recognize the name "mRNA" as the tech that helped scientists develop a COVID vaccine in record time.

A lot of folks are skeptical of mRNA because bureaucrats shoved them down our throats during COVID. Fair. This was among the worst things to come out of the pandemic.

I hope their dishonesty doesn't cause a public backlash against this tech because it's a real game-changer that could help us beat back some of today's biggest killers.

In the simplest terms, mRNA trains our bodies to specifically attack cancer cells. This is difficult because cancer cells are usually indistinguishable from healthy cells in our bodies, making them hard to spot.

These early results are extremely promising. We're talking about potentially saving half of all people who would have died from melanoma!

What's even more promising is that mRNA vaccines for pancreatic … colorectal… brain… lung… bladder… and kidney cancer are also showing positive results in trials.

mRNA can make cancer a nuisance rather than a life-ending illness. Every rational optimist should do everything they can to support the innovators making this a reality.

Just like we eradicated once-deadly diseases like polio, we can and must beat cancer, too.

#4: Brain computers

Would you let Elon Musk put a chip in your brain?

Nobody is opening my skull. But I'm not paralyzed from the neck down like Noland Arbaugh has been ever since suffering a freak spinal cord injury.

Noland couldn't do much on his own. He couldn't hold a book or get a job. Using the internet involved awkwardly poking an iPad with a mouth stick.

Then, he became the first human to get a Neuralink chip implant.

About the size of a quarter, the chip was inserted under his skull and now nestles against his brain. Neuralink can read his thoughts and translate them into action, which allows him to control a computer with his mind.



Source: Daily Mail

Neuralink has completely transformed Noland's life. Not only can he play games and use the internet just like you and me, but he can also work! Noland can type emails and attend video calls. He's looking for a job and is planning to save up to build a house for his family. Maybe he'll become a coder, a video game designer, or an editor.

How inspiring is this? This young man was totally dependent on others. Had he been born during any other time in history, he would've stayed that way.

Neuralink gave him the ability to work, find purpose, and provide for his family—three things a young man needs to thrive. Amazing!

When I wrote about Neuralink a few months ago, I got a note back from John, a subscriber who's paralyzed from the waist down: "Give me the chip and a Swiss army knife, and I'll put the damn thing in myself!"

Helping paralyzed folks is just Neuralink's first calling. This technology could go on to help us treat conditions like autism, depression, and schizophrenia by regulating our moods.

In Washington, DC, I met a friend deeply involved in this area. "What's your most outside-the-box idea?" I asked.

His response:

> Brain mood setters. Chips in our heads that allow us to control our moods. You tell the chip you're writing a book and that you want to enter a flow state for six hours. You tap a button and boom, you're laser-focused. My friend is working on these tools; we'll have them in 2—3 years.

Whoa. Remember *The Matrix* where Neo downloads kung fu directly into his mind?

Two to three years for reliable mood control seems overly optimistic. I'm guessing it will take a decade.

The real test is whether it can deliver brain enhancement without negative effects. We must be skeptical of anything that sounds like a free lunch.

#5: Artificial intelligence (AI) restoring lost body parts and senses

Sarah de Lagarde had her right arm amputated after getting run over by a train.

Thanks to her newly fitted AI bionic arm, she can finally hug her daughter again. Think about how *good* that must feel.



Source: The New York Times

We've had "dumb" prosthetic limbs for decades. Although they're better than nothing, they're essentially pieces of plastic strapped to our bodies. Sometimes they use preprogrammed robotic commands to clunkily move.

Sarah controls her bionic arm with her mind. When she thinks about picking up a glass, the AI reads her thoughts and signals her hand to close its fingers around the glass at exactly the right pressure. And the more she uses it, the better the AI system gets at knowing her intentions.

AI is helping folks who've suffered an injury or disease to reclaim their senses. It handed Sarah her "touch" back. It's also turning on the "sound" for deaf people.

XRAI Glass (pronounced "X-ray") lets deaf people "read" conversations in real time.

These new smart specs use AI to translate the words someone is saying into text, displaying it right before your eyes like subtitles. Check out this woman's reaction to wearing the glasses for the first time. That's the look of decades of social frustration melting away.



Source: Metro

Remember when computers filled entire rooms? Now, we carry more computing power around in our pockets than NASA used to send a man to the moon.

The same tech wizardry is what makes XRAI glasses possible. Microchips have allowed us to basically squeeze a translator, a supercomputer, and a teleprompter into something that sits on your face.

For the millions of folks with hearing loss, these glasses aren't just a cool gadget. They open up a world of conversation that's been locked away.

Imagine a deaf child finally being able to laugh along with her classmates' jokes. Or a grandparent engaging in family banter they've missed for years.

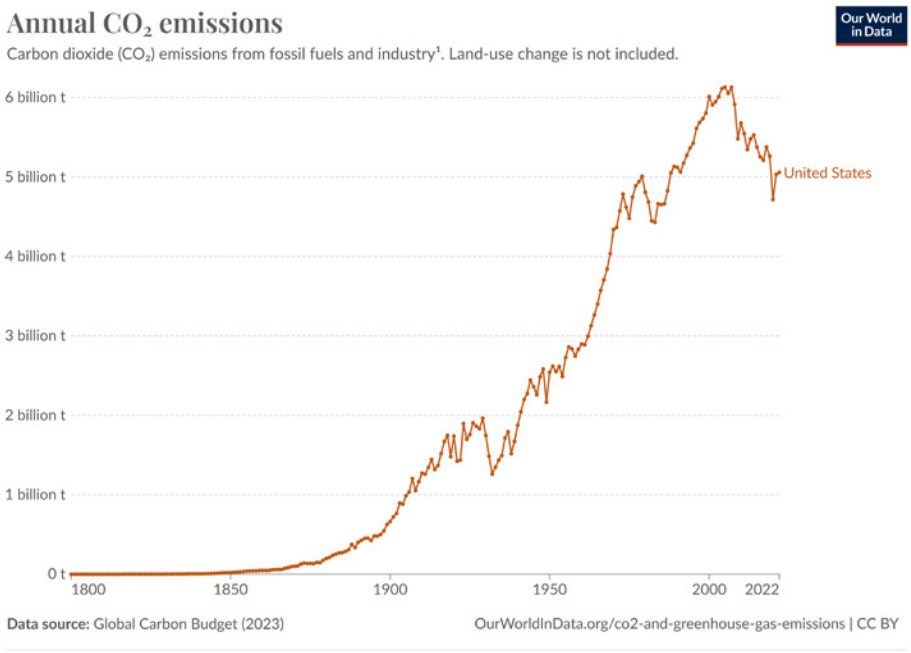
I remember people used to debate the question: If you had to lose one of your five senses (sight, hearing, taste, touch, smell), which one would you choose?

Given how rapidly innovation is advancing, the answer may soon be "none; I choose AI."

Part 2:

5 charts to transform a cynic into a rational optimist

1. America is leading the clean energy revolution.



Source: Our World in Data

How optimistic are you about America's environment? If you're like most, not very. Polls show that three in five Americans think it's getting worse.

But did you know America has reduced its total carbon emissions by 18% since 2006?

That equates to a bigger overall reduction than the UK, Germany, Italy, Spain, and France, combined.

America leading the way in carbon reduction may shock you since Europe *talks* such a big game about the climate. European bureaucrats concoct grand agendas to achieve environmental paradise through windmills, bikes, and paper straws. And Europe *did* cut CO2 emissions by a lot.

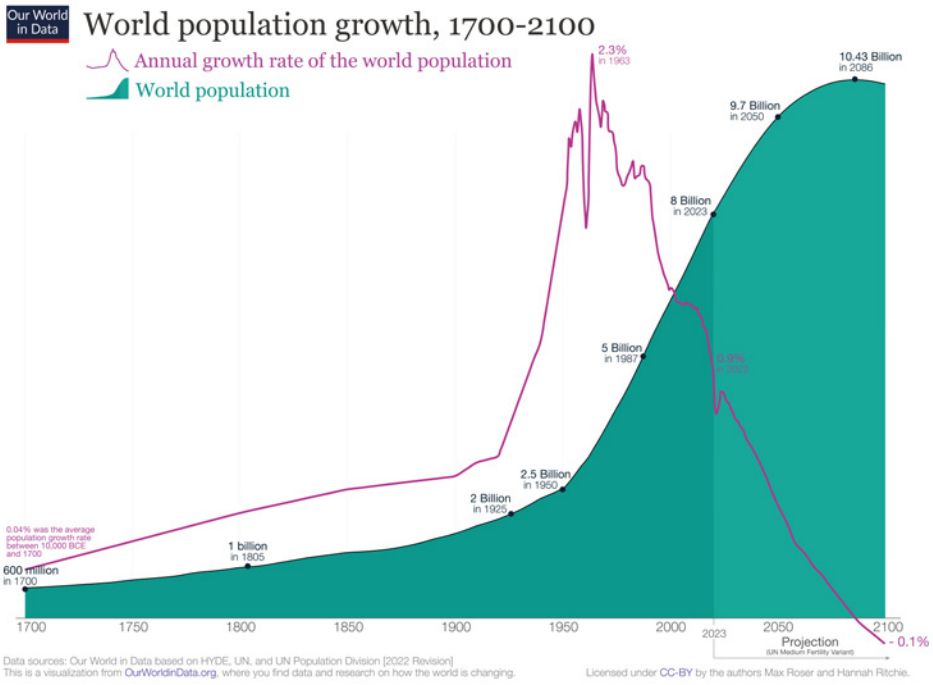
But one American innovation achieved more than all the bureaucratic decrees combined: fracking.

Fracking releases oil and gas trapped deep down inside previously inaccessible areas. This innovation gifted America decades' worth of cheap natural gas… which allowed us to shut down 300 coal plants.

This one change—switching from coal to natural gas for electricity generation—is responsible for 61% of the reduction in the US's carbon emissions, according to journalist Michael Shellenberger.

Thanks, American entrepreneurs and innovators. You beat the bureaucrats and let us all breathe cleaner air.

2. Overpopulation, solved.



Source: Our World in Data

Isn't it only a matter of time before the human population surpasses what our earth can support?

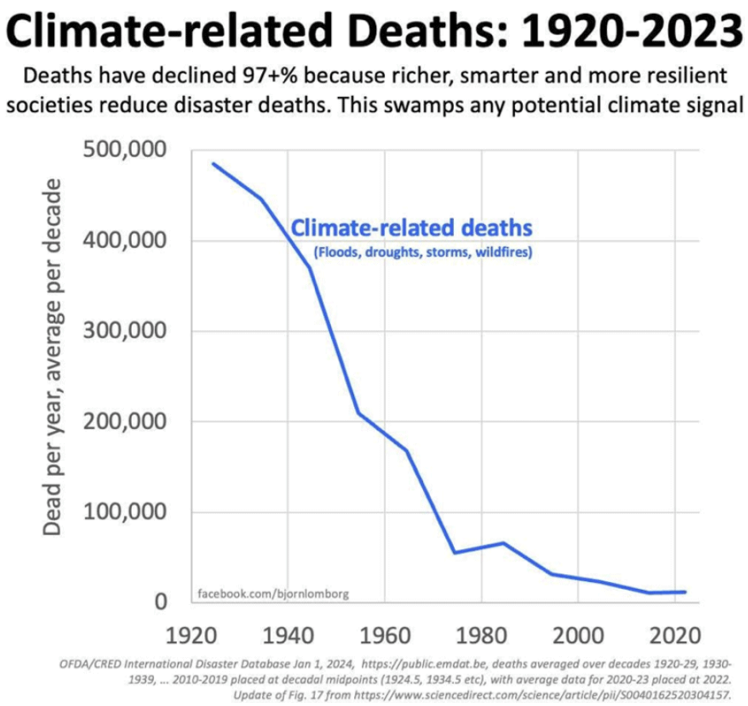
Out-of-control population growth was a big concern in the 1960s. But growth has dramatically slowed since then. The UN projects the population will peak by 2100, then plateau for good.

In many wealthy countries like Japan and Germany, the population has already stopped growing. Even China's population has shrunk in recent years.

Why? It turns out that as a country grows wealthier, its citizens have fewer kids. When moms and dads are confident all their children will survive, they tend to have two or three kids instead of 10. Paradoxically, we can thank the 90% plunge in infant mortality for solving overpopulation worries.

Our new problem might be *not enough* population growth. More humans mean more brain power, which leads to more life-changing discoveries… more new technologies… more creative genius… more cures for diseases… more choices… and more soulmates.

3. Fewer people are dying from climate disasters.



Source: International Disaster Database

Former US presidential candidate John Kerry said at The World Economic Forum: "2023… was literally the most disruptive, climate-disrupted, most climate consequential, negative year in human history."

Can someone send Kerry the chart above, which shows climate-related deaths collapsing to 97% over the past century?

When you factor in the rising global population, for every person who dies from climate change today, over 160 died in the 1920s!

Technology and capitalism, which are often blamed for ruining our climate, are the driving forces behind this one-way trend.

Mother Nature continues to hand out heat waves, cold snaps, hurricanes, and flash floods. But technological innovation is the reason she no longer claims hundreds of thousands of lives each year.

To beat extreme heat, we invented air conditioning. To beat extreme cold, we created indoor heating and insulation.

Deadly floods... we devised dams, canals, and expert drainage systems.

Hurricanes, earthquakes, and tsunamis... we contrived early warning systems for evacuations.

Droughts... we pioneered new farming methods that allow us to grow crops year-round.

Dirty energy, like coal... we masterminded “capture” tools that enable us to remove 95%+ of the deadly toxins.

Innovation—not politicians or guilt—is our greatest weapon.

4. Battery prices have plunged 98% since 1990.

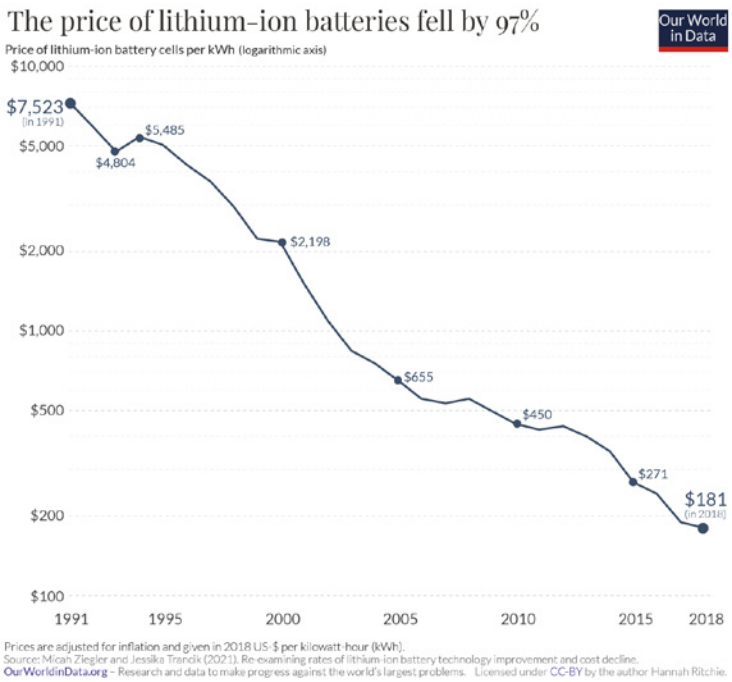
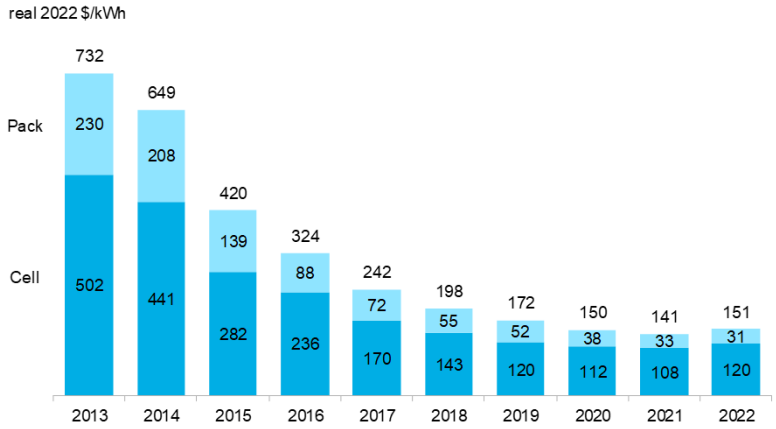


Figure 1: Volume-weighted average lithium-ion battery pack and cell price split, 2013-2022



Source: BloombergNEF. All values in real 2022 dollars. Weighted average survey value includes 178 data points from passenger cars, buses, commercial vehicles and stationary storage.

A lithium-ion battery that cost $7,500 in 1991 will set you back just $139 today. And declining costs aren't just continuing; they're accelerating.

This 97% plunge in battery prices is being driven by what I call "the eighth wonder of the world:" learning curves. In the simplest terms, the more we build something, the faster we learn how to make it better and cheaper.

And we're installing batteries at breakneck speeds. The International Energy Agency data shows battery installations have surged 700% since 2020. America's battery capacity is on track to double this year alone.

Lithium-ion batteries are the reason your phone runs all day without going dead… and why new Teslas can drive over 300 miles on a single charge.

They're also making solar power more reliable by storing excess energy during sunshine hours and deploying electricity at night.

Cheap, powerful batteries unlock countless other exciting innovations, too.

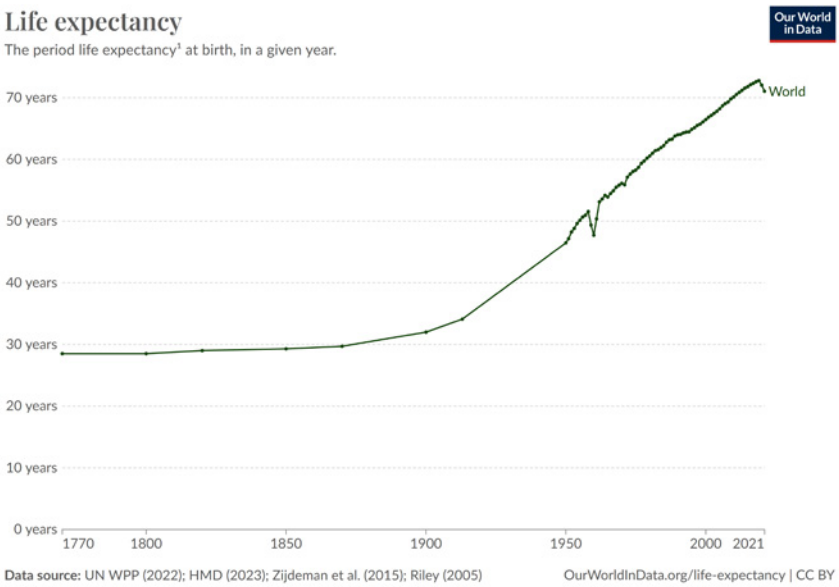
They're powering household robots that do our chores and helping farmers spray their crops.

Amazon and Walmart are using battery-powered quadcopters to deliver meals, prescriptions, and coffee beans to your doorstep in under 30 minutes.

Drones are transforming warfare on the battlefields of Ukraine, too.

Given how rapidly the technology keeps improving, this is only the beginning of the battery-powered revolution.

5. The average human lives twice as long as they did 100 years ago.



Source: Our World in Data

For most of human history, the average person only lived into their 30s.

Today, the average person lives past 70. And those extra decades involve far less suffering.

Fewer adults are dying from heart disease and cancer. Thanks to medical advances, cancer death rates in the US have plunged by one-third since the 1990s.

Kids are also living longer. In 1800, around one in five babies in France died during infancy. Today, that figure is 1 in 274. Let's keep this trend going.

In 1800, Belgium had the world's highest life expectancy at 40. Today, no country has a lower life expectancy than 40.

Notice two dips on the above chart. The recent one is from COVID-19.

The dip from the 1950s wasn't the result of a world war. It was communist China's "Great Leap Forward," where tens of millions of people died.

Consider it a warning of what can happen when freedom and innovation lose to dangerous ideologies like Marxism.

Stephen McBride

Stephen McBride
Co-Founder

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