

MrBeast.

How He Became the
Most Watched Person
In the World

by
BELINDA LUSCOMBE



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Author Sarah J. Maas and fans at the Book Club Bar in New York City on Jan. 29

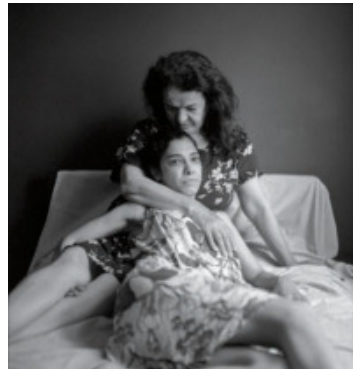
Photograph by Evan Angelastro for TIME



Best in Show: photograph by Owen Harvey

Kudos

TIME and the American Society of Media Photographers are pleased to announce the winners of our Global Photographic Portraiture Competition: "The Human Element." Over 2,200 images were submitted across five categories, and the winning images were shot by photographers from nine countries including Bangladesh, Poland, and Iran. Here's a selection of the winning images, on themes that likewise span the world—including climate change, gender identity, loss, and love. See all of the winning entries at time.com/winners



Portraits of Family: first-place photograph by Maria Louceiro, left; second-place photograph by Mehri Jamshidi, above



Series Category: first-place photograph by Ryan Schude



Second-place photograph by Mohammad Rakibul Hasan

On the covers



Photograph by Chris Buck for TIME



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SETTING THE RECORD STRAIGHT

In "The Closers" (Feb. 12), we mischaracterized TransTech's partnerships; the organization works with Google.org but not NASA. We also misstated the ages of Arian Simone and Ayana Parsons, who are 43, and the profession of the person who inspired John Hope Bryant; he was a banker.

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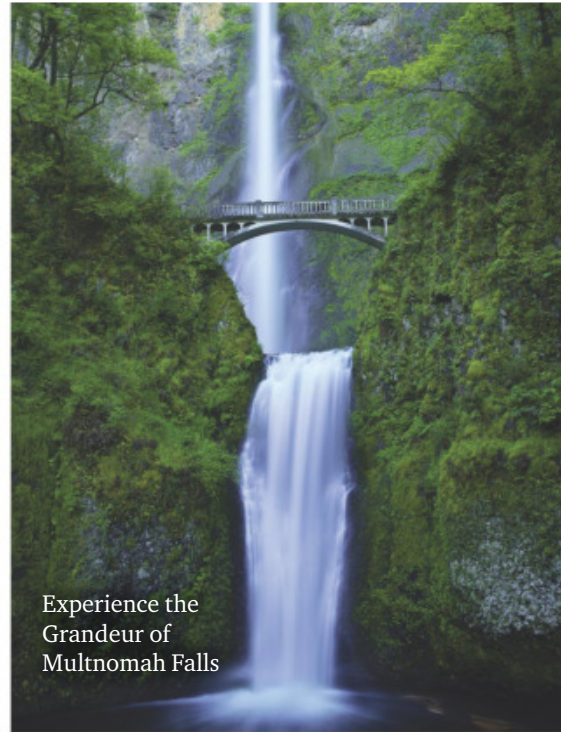


On The Trail Of LEWIS & CLARK

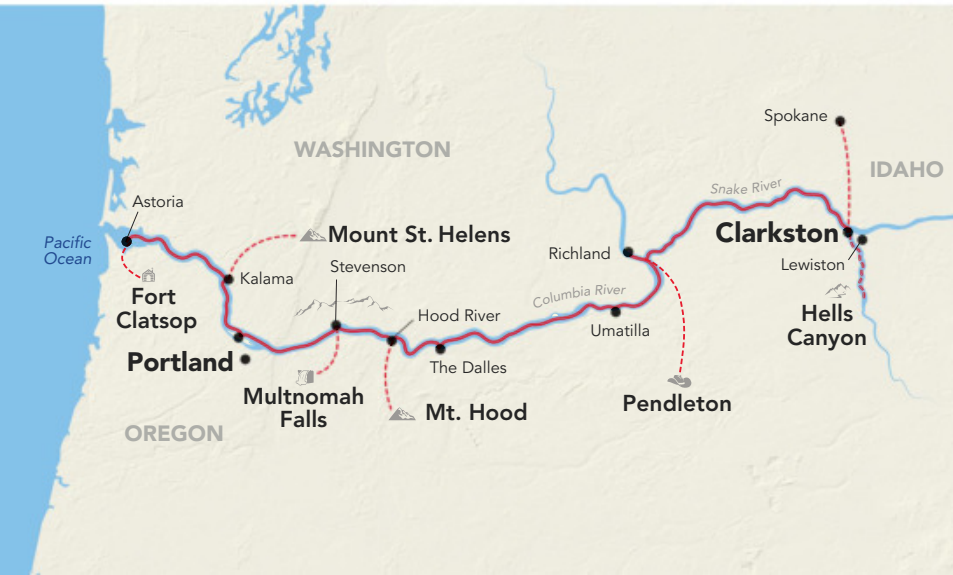
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The Brief



NOT A QUIET LITTLE TOWN

BY ANDREW R. CHOW

The incessant din
of a bitcoin mine
in overlooked
rural America

INSIDE

EUROPE'S FARMERS UP IN ARMS
OVER REFORMS

AMERICANS' CHANGING
VIEWS ABOUT MONOGAMY

THE ROOFTOP SOLAR
INDUSTRY IS IN TROUBLE

EVERY NIGHT, THE NURSE ANESTHETIST Cheryl Shadden lies awake in her home in Granbury, Texas, listening to a nonstop roar. “It’s like sitting on the runway of an airport where jets are taking off, one after another,” she says. “You can’t speak to somebody five feet away and have them hear you at all.”

The noise comes from a nearby bitcoin-mining operation, which set up shop at a power plant in Granbury last year. Since then, residents in the surrounding area have complained to public officials about an incessant din that they say keeps them awake, gives them migraines, and apparently has scared off wildlife. “My citizens are suffering,” says Hood County Constable John Shirley.

Rural America has not shared much in the wealth of the tech boom or, in areas without broadband, even much of the tech. But the impacts of bitcoin mining—an energy-intensive process that powers and protects cryptocurrency—are distinctly negative for many residents: noise, carbon pollution, and higher utility bills. Some 34 large-scale bitcoin mines operate across the U.S., according to the *New York Times*. And despite high-profile crypto collapses in 2022, mining companies last year expanded operations to cash in on a rebound. One study said global energy consumption for mining doubled.

BITCOIN IS so energy-intensive because it relies on a process known as proof-of-work. Rather than being overseen by a single authority, like a central bank, bitcoin disperses the responsibility of the network’s integrity to voluntary “miners” around the globe, who prevent tampering through a complex cryptographic process that consumes a vast amount of energy. Texas has become a global industry leader because miners can access cheap energy and land there, and benefit from friendly tax laws and regulation. Bitcoin miners consume about 2,100 megawatts of the state’s power supplies, an amount that can power hundreds of thousands of homes. Companies like Riot Platforms and Marathon Digital Holdings have recently expanded in the state. (Other states have pushed back: in 2022, New York imposed a moratorium on bitcoin mining over environmental concerns.)

Bitcoin-mining plants, like data centers, run massive cooling fans to keep their computers from overheating. The rumble from the Granbury plant reached Shannon Wolf in her home eight miles away; she thought it was a nearby train. “It has woken me from a dead sleep before,” she says. Other residents of the town, which stands on the Brazos River an hour southwest of Fort Worth, took their

complaints to social media. “This sound has been driving me to the point of insanity. I have continuous migraines, I can barely get out of my head, vomiting, nosebleeds, painful knots on my scalp,” wrote one commenter. “All the birds have left, only [buzzards],” wrote another.

Local officials brought their concerns to the site’s operator, US Bitcoin Corp. Over the summer, the company constructed a 24-ft. sound-barrier wall on one end of the property at the cost of \$1 million to \$2 million. But while the wall reduced sound in some areas, it amplified it in others. “To be honest, the complaints have gotten louder for us since the mitigation efforts,” Constable Shirley says.

Texas state law stipulates that a noise is considered unreasonable if it exceeds 85 decibels. (For comparison, vacuum cleaners often run at around 75 decibels—though a cardiologist told *TIME* in 2018 that chronic exposure to

anything over 60 decibels had the potential to do harm to the cardiovascular system.) Shadden took her own readings at her house near the bitcoin-mining facility that reached 103 decibels.

But the maximum penalty for breaking that Texas law is a \$500 fine, Shirley says, adding, “The state law is inadequate.” He says that he has been talking to the county attorney’s office about options for recourse. “If we have a repeated violation problem, he will be looking into potential injunctive relief,” he says.

The community’s ire boiled over at a packed town hall on Jan. 29. One of the attendees said she had been forced to put her Chihuahua on seizure medication. Others said their windows rattled from the vibrations and the noise made their homes unsellable.

“How does Hood County benefit from having such a ridiculous thing?” asked one woman.

After the town hall, the site’s owner, Marathon Digital Holdings, announced that it planned to take over full day-to-day operations of the Granbury mine. “Our team will now have more influence over the site and can hopefully have a more positive impact for the community,” a spokesman said in an e-mail to *TIME*. US Bitcoin Corp did not respond to a request for comment.

Erik Kojola, a senior climate-research specialist for Greenpeace USA, says he’s monitored complaints from residents near new bitcoin-mining centers in Iowa, Indiana, Nebraska, and upstate New York. “Bitcoin mining is essentially a lifeline for fossil fuels,” he says. “It’s ultimately creating a new industrial-scale demand for energy at a time where we need to be reducing our energy use.”

‘To be honest, complaints have gotten louder since the mitigation efforts.’

—JOHN SHIRLEY,
HOOD COUNTY CONSTABLE



French farmers protest by blocking a road with potatoes and trash in the Brittany town of Guingamp on Jan. 24

THE BULLETIN

Unhappy farmers unsettle Europe

TENS OF THOUSANDS OF FARMERS have taken to the streets across Europe in recent weeks to protest the combined effect of poor economic conditions created by falling incomes, high costs, ongoing disruption from the war in Ukraine, and competition from cheap imports. Their discontent is further fueled by the European Union's recent announcement of more-stringent environmental policies affecting agriculture, which they say will make things worse.

On Feb. 1, farmers from Germany, France, Belgium, Italy, and Greece descended on Brussels, where they blocked roads, lit fires, and threw eggs at the European Parliament to demand that E.U. leaders do more to help.

ROOTS OF THE PROBLEM The E.U.'s proposed green policies are intended to curb the farming sector's

greenhouse-gas emissions—which currently account for 11% of Europe's total emissions—by revamping the existing Common Agricultural Policy, a yearly subsidy system worth nearly \$60 billion. The new policies, part of the European green deal, which aims to make the bloc climate-neutral by 2050, ask that farmers devote at least 4% of arable land to nonproductive features, carry out crop rotations, and reduce fertilizer use by at least 20%.

GREENING THE FIELDS Many farmers' anger is fueled by perceived contradiction, according to 44-year-old Morgan Ody, a French farmer from the region of Brittany. "On the one hand we're asked to farm more sustainably; on the other, we're asked to keep producing as cheaply as possible, which puts us in an impossible situation," says Ody, who represents a French farming union. Further grievances vary from country to country: in Germany, for example, farmers are angry about a proposed phasing-out of tax breaks on agri-

cultural diesel; in the Netherlands, there's a revolt against a requirement to reduce nitrogen emissions. But continent-wide, farmers share concerns that the measures will make the European agricultural sector less competitive against imports.

PLANTING CHANGE Some leaders want the rules to be loosened in response to the protests. French President Emmanuel Macron has asked the E.U. to "profoundly" change its rules in order to guarantee fair prices paid to farmers by food giants and supermarkets, and the European Commission is proposing more-relaxed green requirements while still allowing agricultural subsidies. Several governments have announced their own aid packages. "Everywhere in Europe, the same question arises," said France's Prime Minister Gabriel Attal while announcing \$160 million for French farmers in need. "How do we continue to produce more but better? How can we continue to tackle climate change? How can we avoid unfair competition from foreign countries?" —ASTHA RAJVANSHI

GOOD QUESTION

Where do Americans stand on consensual nonmonogamy?

BY CADY LANG

NEARLY ONE-THIRD OF SINGLES IN AMERICA HAVE HAD a consensually nonmonogamous relationship, but many singles are still committed to the concept of traditional sexual monogamy.

That's the word from the survey informing the 2024 Match Singles in America report, but it's also all over popular culture—in mainstream television shows, books, and media reports where consensual nonmonogamy is having a moment. Anthropologist Helen Fisher, Match's chief science adviser, calls it an exciting development in consensual nonmonogamy, but is hardly new.

"There's every reason to think that having sex outside of the pair bond has been quite common for millions of years," Fisher tells TIME. "What's actually extraordinary is that we bother to pair up at all, and indeed we do."

According to the report, which was released in January and marked the first time Match asked about nonmonogamy, while 31% of singles in America have explored consensual nonmonogamy (also known as ethical nonmonogamy), 49% of singles say that traditional sexual monogamy is still their "ideal sexual relationship."

For the third of singles who reported trying it, consensual nonmonogamy covered a range: polyamory (where relationship partners agree that each may have a romantic relationship with other people); open relationships (a committed primary relationship that openly allows for romantic and/or sexual activity with others); swinging (expanding an exclusive romantic relationship to seek out other sexual partners together); and being monogamish (a committed relationship that allows for sexual variety with others, either together or individually).

FISHER SAYS THAT MONOGAMY is a carryover from early farming cultures, when couples were dependent on each other to farm, making pair bonding necessary, especially for women, who were forced to be dependent on men, the property owners.

She theorizes that the current interest in consensual nonmonogamy can be traced back to the mores of hunting-gathering societies, when women could express

their sexuality because, as gatherers, they were as viable as male partners in contributing to the economy.

Fisher points to the contemporary rise of women in the job market, as well as their increased education and ability to keep and inherit their own money, as key advances that have aided in more sexual self-expression.

"I do think that the rise of consensual nonmonogamy is part of a much larger cultural sweep, back to life as it was a million years ago where women and men could express their sexuality without having their heads chopped off, as was the case in farming cultures," she says.

According to Fisher, this shift has led to singles of today being more creative and willing to think out-

side of conventions when it comes to their needs, desires, and relationships—and she says that will have a positive outcome. "What's interesting about consensual nonmonogamy is not the nonmonogamy," she says. It's the fact that "it's consensual and that it is being normalized. I can only think that that is part of a huge societal blossoming of self-expression."



'What's actually extraordinary is that we bother to pair up at all.'

—HELEN FISHER,
MATCH ANTHROPOLOGIST

MANY OF THE SINGLES who engaged in consensual nonmonogamy did feel that the experience positively impacted their dating life; 38% said their nonmonogamous experiences have made them better understand what they do and don't want and need in a relationship, while 29% say they became more emotionally mature. It helped improve their sex lives too: 30% of single people reported becoming more open sexually, and 27% said they were able to have more frequent sex.

"What I think is beautiful is this year's data showing that [consensual nonmonogamy] can have a real positive impact for future relationships," Fisher says. "It is, in fact, enhancing them."



DIAGNOSED

King Charles III

A monarch ails

WHEN BUCKINGHAM PALACE ANNOUNCED on Feb. 5 that King Charles III had been diagnosed with an undisclosed type of cancer, it was a reminder—hardly needed so soon after Queen Elizabeth II's death—that any monarchy rests on the backs of mortal beings.

The news led to an outpouring of solidarity as the 75-year-old began treatment at a London clinic. The King's royal engagements have been postponed, with other members of the family, in their positions as his Counsellors of State, expected to stand in on his behalf; as the next in line to the throne, Prince William will likely play the most prominent role.

In announcing the King's diagnosis but eliding details, the palace sought to “prevent speculation” while promoting public understanding, in line with the cancer-related charities he had long supported

during his time as Prince of Wales. “In this capacity, His Majesty has often spoken publicly in support of cancer patients, their loved ones, and the wonderful health professionals who help care for them,” a Buckingham Palace spokesperson said, noting that the King is receiving “expert care” and looks forward to returning to his full duties.

The King's health had been in public focus since he was admitted to a private clinic hospital in January for treatment of a benign prostate enlargement, during which a separate issue of concern was noted. At that moment too, the palace had made the King's health news public in accordance with the monarch's wish to encourage other men to have their prostates checked. His approach was successful, causing a surge in people checking the National Health Service website's page about the condition to 11 times as much as usual, according to the *Guardian*—a reminder perhaps that while he may be only human, his influence is grand.

—ARMANI SYED

DIED

Toby Keith

Countryman

Toby Keith, who died of stomach cancer on Feb. 5 at 62, signed his first record deal in 1993. But he became better known outside the country-music orbit later, when he released “Courtesy of the Red, White and Blue (The Angry American)” in 2002. Keith wrote the song in 20 minutes on a scrap of paper the week after 9/11. The rally-round-the-flag anthem captured the rage Americans were feeling after the attacks with lyrics like “We'll put a boot in your ass, it's the American way.” The song was a hit—and, as Keith knew it would be, controversial.

A 2004 *TIME* profile dubbed Keith “the poet laureate of righteous indignation.” The star had mixed feelings about the war in Iraq. But, he told the magazine, “Most people think I'm a redneck patriot. I'm O.K. with that.”

—Olivia B. Waxman



DIED

► Groundbreaking *West Side Story* triple threat **Chita Rivera** (right) on Jan. 30 at 91.

► Boxer and linebacker **Carl Weathers**, who played Apollo Creed in *Rocky*, on Feb. 2 at 76.



PLANNED

A **sports streaming platform** from ESPN, Warner Bros., and Fox, they announced Feb. 6.

AWARDED

The Album of the Year Grammy to **Taylor Swift**

on Feb. 4—the first artist to win it four times.

FAILED

An **impeachment vote against Homeland Security Secretary Alejandro Mayorkas** on Feb. 6.

CONVICTED

Jennifer Crumbley, mother of the 15-year-old who killed four at Oxford High School in 2021, of **involuntary manslaughter** by a Michigan jury on Feb. 6, a first for the parent of a school shooter.

FINANCE

Rooftop solar might be on the verge of collapse

BY ALANA SEMUELS

A DECADE AGO, SOMEONE KNOCKING ON YOUR DOOR TO sell you solar panels would have been selling you solar panels. These days, they are probably selling you a financial product—likely a lease or a loan.

Mary Ann Jones, 83, didn't realize this until she received a call last year from GoodLeap, a financial-technology company, saying she owed \$52,564.28 for a solar-panel loan that expires when she's 106, and costs more than she originally paid for her house.

In 2022, she says, a door-to-door salesman from the company Solgen Construction showed up at her house on the outskirts of Fresno, Calif., pushing what he claimed was a government program affiliated with her utility to get her free solar panels. At one point, he had her touch his tablet device, she says, but he never said she was signing a contract with Solgen or a loan document with GoodLeap. She's on a fixed income of \$960 a month and cannot afford the loan she says she was tricked into signing up for; she's now fighting both Solgen and GoodLeap in court.

Her case is not uncommon. Solar customers across the country say that salespeople obscure the specific terms of the financial agreements and cloud the value of the products they peddle. Related court cases are starting to pile up. "I have been practicing consumer law for over a decade, and I've never seen anything like what we are seeing in the solar industry right now," says Kristin Kemnitzer, who represents Jones and says her firm gets "multiple" calls every week from potential clients with similar stories.

Angry customers aren't the only reason the solar industry is in trouble. Some of the nation's biggest public solar companies are struggling to stay afloat as questions arise over the viability of the financial products they sold—both to their consumers and to investors.

At a time when solar is supposed to be saving the world, looming financial problems threaten to topple the U.S. residential solar industry. Though rooftop solar in 2022 generated just 4.7% of the nation's electricity, if widely deployed it could eventually meet residential electricity demand in many states. But according to Roth Capital Partners, in late 2023 alone more than 100 residential solar dealers and installers in the U.S. declared bankruptcy—six times the number in the previous three years combined.

The two largest companies in the industry, SunRun and Sunnova, both posted big losses in their most recent quarterly reports, and their shares are down 86% and 81% respectively from their peaks in January 2021. Sunnova is also under the microscope for having received a \$3 billion loan guarantee from the Department of Energy while facing numerous complaints about troubling sales practices



that targeted low-income and elderly homeowners. Another solar giant, SunPower, saw shares plunge 41% on Dec. 18 after it said that it may not be able to continue to operate because of debt issues. Sunlight Financial, a big player in the solar-finance space, filed for Chapter 11 bankruptcy in October.

In other words, like Mary Ann Jones, the solar industry has a debt problem. The difference is, the industry was extremely eager to take out its loans.

Since at least 2016, big solar companies have used Wall Street money to fund their growth. But this "financialization" was anything but simple, and its complexity both raised the consumer cost of the panels and compelled companies to aggressively pursue sales. National solar companies essentially became finance companies that sell solar, engaging in calculations that may have been overly optimistic about how much money the solar leases and loans actually bring in.

"I've often heard solar finance and sales compared to the Wild West due to the creativity involved,"



says Jamie Johnson, the founder of Energy Sense Finance, who has been studying the residential solar industry for a decade. “It’s the Silicon Valley mantra of ‘break things and let the regulators figure it out.’”

RESIDENTIAL SOLAR has always faced a big impediment to growth: installing and maintaining solar panels is expensive, and few consumers wanted to spend tens of thousands of dollars in cash to pay up front for what was a relatively untested product. To get around this problem, a company called SolarCity in the early 2010s came up with a new model—leasing solar panels to customers, allowing them to pay little to no up-front cost. Companies like SunRun quickly followed. By 2014, this “third-party-owned” kind of leased solar accounted for nearly 70% of total residential installations.

Besides enabling sales, there were other, even bigger, financial benefits of this practice for SolarCity. Since the company, not the consumer, owned the solar panels, SolarCity could claim

‘I’ve often heard solar finance and sales compared to the Wild West.’

—JAMIE JOHNSON,
ENERGY SENSE
FINANCE

the hefty 30% tax credit for solar panels, which the government approved in 2005. It then took those tax credits and sold them to companies like Google or Goldman Sachs, funding SolarCity’s further growth.

SolarCity’s other innovation was to package together thousands of consumer leases and sell them to investors as asset-backed securities, which enabled the company (and others that followed suit) to move debt off their balance sheet. Investors liked buying these asset-backed securities because they had higher rates of return than government bonds and were perceived as relatively low risk—the assumption was that homeowners would make the monthly solar-lease payments to keep their electricity on. It didn’t hurt that these securities made investor portfolios look more climate-friendly. By 2017, the sale of solar asset-backed securities (ABS) by companies including SolarCity and SunRun had reached \$1 billion.

However, these financial innovations also increased the pressure on companies to grow quickly. Solar companies needed lots of new customers in order to package the loans into ABS and as newly minted public companies were expected to show double-digit growth. So solar companies deployed expensive sales teams to go out and sell to as many homeowners as aggressively as they could.

SolarCity ran out of money in 2016 and was acquired by Tesla, but the problems created by its expensive model have persisted. Today, about one-third of the up-front cost of a residential solar system goes to intermediaries like sales and financing people, says Pol Lezcano, an analyst with BloombergNEF. In Germany, where installation is done locally and there are fewer intermediaries, the typical residential system costs about 50% less than it costs in the U.S. “The up-front cost of these systems is stupidly high,” says Lezcano, making residential solar not “scalable.”

After growing 31% in 2021 and 40% in 2022, residential solar in America will grow by only 13% in 2023 and then contract 12% in 2024, predicts the research firm Wood Mackenzie. In part, that’s due to higher interest rates than the industry has ever had to face. In addition, recent legislative changes in California reduce the amount of money that homes can earn from sending power back to the grid, making solar less appealing financially; other states are following California’s lead.

But high interest rates and policy changes might not be a huge problem if the big solar companies weren’t already burning through money and needing to take out even more debt—which is itself getting more expensive. As Travis Hoiium, who has been covering the solar industry for more than a decade for the Motley Fool, notes, “With all of these companies, you are on a financing treadmill—which is awesome until the treadmill stops.”

MEANWHILE, THE PRESSURE for fast sales may have led some companies to look the other way when salespeople obscured the terms of the solar-panel leases and loans they were selling in order to close a deal.

Jesus Hernandez, 53, says a Southern Solar salesman told him in 2019 that installing solar panels could

cut his monthly electric bill to as little as \$50 a month; Hernandez was paying around \$500 a month at the time. He took out a 20-year loan from GoodLeap to install about \$62,000 worth of solar panels. After interest and fees, that turned out to be more like \$90,000. Today, Hernandez pays about \$400 a month on the loan but his electric bill is still in the \$500 range, because the panels do not produce the promised electricity. “Everything they told us was a lie,” he says. (Southern Solar did not respond to a request for comment.)

There is evidence that solar-finance companies knew that not every sale was by the book. As early as 2017, an employee of Mosaic allegedly flagged to his superiors that salespeople were running credit inquiries in ways that violated federal and state privacy laws. “This is looking more and more like a systemic issue. It’s already big, I’m trying to stop it from getting bigger,” the employee wrote in an email, according to court documents filed in a lawsuit alleging that door-to-door salespeople for Mosaic and Vivint Solar (now part of SunRun) submitted unauthorized credit applications for consumers who had no interest in getting solar panels. (The parties settled the case out of court.)

Even some people who voluntarily signed up for financing products say they were misled about the actual cost of the solar panels. That’s because loans from companies like GoodLeap and Mosaic often include an unexplained and significant “dealer fee.” For example, a customer buying a \$30,000 solar-panel system with a low interest rate may not know that price includes a \$10,000 loan-dealer fee. Had they paid cash, the panels would have cost \$20,000.

Persuading a customer to sign up for financing is lucrative for the companies, and some door-to-door solar salespeople have contracts that pay them extra every time they get customers to sign up to finance a deal. And of course, those costs are passed along to consumers too.

“The thing that blows my mind is the scale of the fraud,” says Robert Tscholl, who represents 46 clients currently in arbitration with GoodLeap over allegations that they were misled about the terms of their loans or that they were given faulty equipment. “Tens of thousands of people bought into this, thinking they were doing good.”

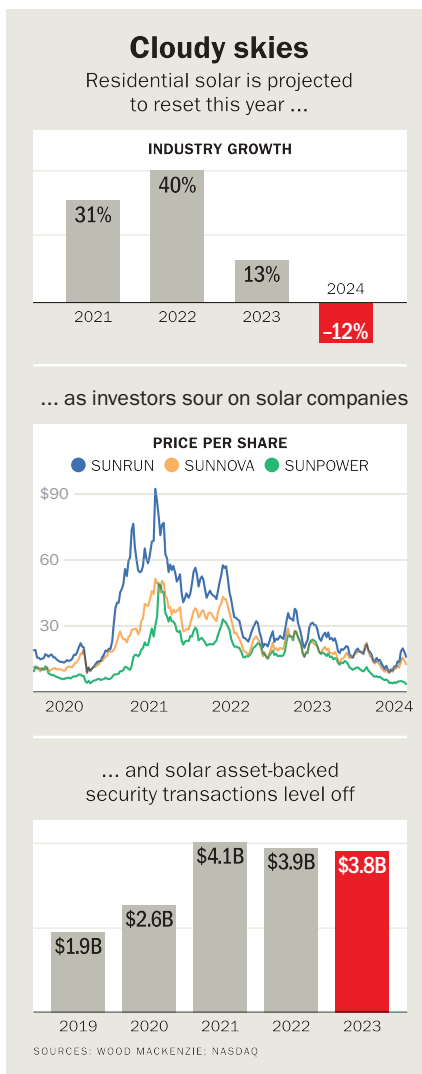
Consumers don’t catch the extra costs in part because salespeople often present documents to potential customers on tablets or phones, making it easy to skip over the fine print. Mary Ann Jones’ situation is not that unusual—homeowners are sometimes told that they’re tapping their finger on an iPad to get a quote from a loan company, but salesmen are in fact signing them up for

a loan, says Kemnitzer, Jones’ lawyer. (Both GoodLeap and Solgen say that it is inaccurate for Jones to claim that the loan was fraudulently originated. Solgen shared with TIME a video of Jones being walked through the terms of the loan, but a judge recently ruled that the video did not show that Jones signed an enforceable contract.)

Few of these solar cases have yet made it to court, in part because of the binding arbitration clauses in many of the loans and leases, but some recent developments make consumer lawyers hopeful. For example, last November, after just two days of testimony, a jury awarded Jesus Hernandez half a million dollars, though he says he hasn’t seen a penny yet. And a judge recently rejected GoodLeap’s motions to have Mary Ann Jones’ case handled in arbitration.

IN SOME WAYS, the current situation in the residential solar market is analogous to the subprime-lending crisis that set off the Great Recession, though on a smaller scale. As in the subprime-lending crisis, some companies issued loans to people who could not—or would not—pay them. And as in the subprime crisis, thousands of these loans—and in solar’s case, also leases—were packaged and sold to investors as asset-backed securities with promised rates of return.

The Great Recession was driven largely by the fact that people stopped paying their loans, and the asset-backed securities didn’t deliver the promised rate of return to investors. Similar cracks may be forming in the solar ABS market. For instance, the rate of delinquencies of loans in one of Sunnova’s asset-backed securities was approaching





Workers install solar panels on the roof of a California home in December

5% in the fall of last year, according to a report issued by KBRA, a bond-ratings agency. Historically, delinquencies in solar ABS had been around 1%.

“No ratings agency is actually going in and checking what actually happened at the time of signing, they’re just looking at the data put forth about these loans,” says Tom Domonoske, a consumer attorney who has filed cases against solar and financing companies.

If you ask the solar companies about these allegations, they’ll say that unhappy customers are a tiny percentage of their total portfolio. GoodLeap, for instance, says that it has a good reputation with homeowners, and that it has more than 1 million customers but is currently named in just 95 lawsuits. It did not provide TIME with the number of arbitration proceedings it is in with customers. Sunnova says it has a “zero tolerance” policy when it comes to salespeople who take advantage of vulnerable people, and investigates allegations that arise, terminating salespeople when necessary. Mosaic did not respond to a request for comment.

There’s another shadow looming over the industry: some Wall Street analysts accuse solar companies of questionable accounting around the long-term value of the systems they sell. For a solar company to get a tax credit for the panels it leases to customers, it has to tell the IRS how much it thinks the leases are worth, based on projected future costs and revenues. Recently, Muddy Waters, a Wall Street firm, issued a research report accusing SunRun of “bamboozling” the IRS by inflating the value of its tax credits.

SunRun itself has disclosed in investor filings that it is in the midst of an IRS audit. One Wall Street analyst, Gordon Johnson, calls this “the biggest tax fraud in the history of the U.S.” (SunRun says that the independent appraisers who estimate the values of SunRun systems do so consistently with industry best practices, and that investors and lenders have “closely diligenced” its tax and valuation procedures.)

Still, if the IRS finds that SunRun and other solar companies manipulated tax returns, it could lead to significant

financial problems in the industry. “The real risk is that the cash flows are not there,” says Johnson, whose equity-research firm, GLJ Research, has issued reports alleging that the asset-backed securities of companies like SunRun and Sunnova are akin to a Ponzi scheme. “Mark my words, many of these companies are going to be bankrupt.”

THE BROAD PROBLEMS facing residential solar and financing companies are already causing some pain in the form of layoffs—California alone lost 17,000 solar jobs in 2023, according to the California Solar and Storage Association. There are ripple effects in the industry; Enphase Energy, which makes microinverters for solar panels, said in December it was laying off 10% of its workforce amid softening demand.

It could get a lot worse before it gets better, with not just lost jobs but a near total collapse of the current system. Some analysts, like Lezcano of BloombergNEF, think that the big national players are going to have to fall apart for residential solar to become affordable in the U.S., and that in the future, the solar industry in the U.S. will look more like it does in Germany, where installations are done locally and there are fewer door-to-door sales.

In the meantime, the idea that we need to persuade tens of thousands of Americans who can’t afford it to put solar on their rooftops shifted the responsibility for addressing the climate crisis from the entities that could really make a difference—big companies and governments, for example— and onto individuals who are good targets for financing companies.

Bad actors are continuing to operate. Just a few weeks ago, another salesperson knocked on Jesus Hernandez’s door and tried to sell him on rooftop solar. Hernandez’s son answered the door and told the salesman that the family already had 68 nonworking panels on the roof and that they were in the process of suing the installer. The salesman retreated, going to knock on other doors on the block.

“The thing that blows my mind is the scale of the fraud.”

—ROBERT TSCHOLL, ATTORNEY

Nairobi conflagration

Firefighters and volunteers battle a blaze in Nairobi after a liquid petroleum gas truck exploded near a residential neighborhood on Jan. 31. The blast occurred outside an illegal gas-storage depot shortly before midnight, killing three people and injuring at least 280 more, many caught in their beds as the fire quickly spread. Officials at Kenya's energy regulatory agency said they had rejected multiple applications to build gas storage on the site last year because of the area's high population density.

Photograph by Thomas Mukoya—Reuters

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THE BRIEF HEALTH

5 ways to deal with climate despair

BY ANGELA HAUPT

FORGET CLIMATE ANXIETY: many people are in flat-out climate distress. About two-thirds of Americans (65%) report being worried about global warming, according to a January report from the Yale Program for Climate Communication. One in 10 say they've recently felt depressed over their concerns for the planet, and a similar percentage describe feeling on edge or like they're unable to stop worrying about global warming.

No wonder more people are seeking care from climate-aware therapists. Some go to therapy to figure out whether they should have kids in the age of rapid climate change. Others are dealing with posttraumatic stress disorder from natural disasters or are burned out from advocacy work.

But if the threat is existential, is there value in sorting out how you feel about it? "The very first step is full validation," says Leslie Davenport, a climate-psychology educator and author. Understand that it's not irrational to be full of worry, rage, fear, or guilt when the planet's on fire.

Instead of ignoring them, "take the energy of all those emotions and redirect them into constructive action," says Dr. Lise Van Susteren, a psychiatrist in Washington, D.C., who co-founded the Climate Psychiatry Alliance. You could advocate for change and make changes yourself: reducing your carbon footprint by walking or biking instead of driving, for example.

Here, climate-aware therapists share their most effective coping strategies for going from overwhelmed to empowered.

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1. Find your people

Climate change tends to get the religion-and-politics treatment—people avoid talking about it, says Carol Bartels, a therapist in Long Beach, Calif. “But we need to talk about it,” she adds. “We need to know that other people are feeling the same.” Join a climate café—discussion spaces, both online and in-person, where people can talk freely about their fears and other feelings related to climate change. Or try the Good Grief Network, a peer-support group that follows a 10-step approach to help people process any type of grieving, including for the planet.



2. Share your views

This is no time for humility. Make sure everyone around you knows what you’re doing to combat climate change, Van Susteren says. “What motivates people is not our independence—we follow the crowd.” Someone might not make green choices in the interest of future generations, but will do it if everyone else is. So post about your advocacy work or the trees you planted on Facebook, and tell whoever you’re standing next to at parties. If you’re surrounded by people who don’t appear to prioritize the environment as much as you do, lead by example rather than trying to change their minds, Bartels advises. “Getting angry with people does zero good,” she says.



3. Make it a family affair

Some research suggests that climate change is especially affecting young people’s mental health. If your kids are coming to you with concerns, listen to and validate them, Van Susteren says. Then get imaginative about how your whole family can take action together. If your kids are young, “you’re not going to talk about climate tipping points, but you can say, ‘Let’s plant a garden, let’s clean up a park. Let’s show Mother Earth that we care about her.’” Older kids might like to start or join climate clubs; if they express interest in going to a protest, ask if they’d like you to tag along, or if you can help them get there. “You can also have family meetings and say, ‘We’ve taken your feelings seriously, and we’ve decided as a family that these are some of the things we can do,’” Van Susteren suggests.



4. Get artsy

Making art can help people regulate and work through their emotions, says Ariella Cook-Shonkoff, a psychotherapist in Berkeley, Calif., who specializes in art therapy and eco-therapy. “You’re doing patterned, repetitive movements and getting into a flow state,” she says. “It’s calming.” Try it in the natural world—by sketching in front of the ocean or on a bench in the woods, for example.



5. Savor time outside

Spending time outside in green spaces benefits well-being—though Davenport acknowledges it can be complex. You go to your favorite lake, but it’s closed because there’s toxic algae growth caused by warm water. A hike in the woods in the dead of winter is lovely, but the unseasonable warmth unnerves you. “Love and grief are two sides of the same coin,” she says. It’s worth pushing through, she says, “because doing so can renew your sense of why it’s important to fight for this.”



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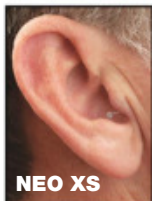
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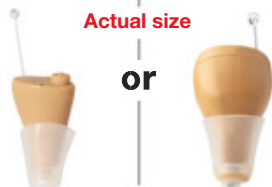
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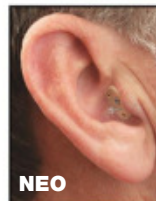
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The View

WORLD

THE WAR NOBODY WANTS

BY WILLIAM WALLDORF

The U.S. is creeping toward war in the Middle East. A drone attack on a U.S. base in Jordan on Jan. 29 killed three American troops and injured 34 others. A militia supported by Iran claimed responsibility. In retaliation, President Joe Biden ordered 85 strikes in Iraq and Syria and promised more to come, a dangerous escalation that could spiral out of control. Are Americans ready for war? Not at all. ▶

INSIDE

ECONOMIES GROW JUST FINE
WITHOUT FOSSIL FUELS

THE DEBATABLE STATE OF
PRESIDENTIAL DEBATES

THE IMPORTANT WORK
OF RELAXATION

Pro-Israel sentiments aside, the U.S. public and its leaders are deeply divided today about Middle East policy. War will not only lead to recession and drain U.S. resources to the benefit of China, but rifts at home could also do harm to U.S. foreign policy for years to come. It's time, then, for Biden to de-escalate tension and push Israel toward peace.

Each major U.S. war since 1900 was buoyed at its outset by a big story that research shows galvanized national consensus and buy-in to the costs of war. A story about the existential danger of Soviet expansion and stopping communism brought robust initial support for wars in Korea and Vietnam. In the 2000s and 2010s, the big story was about Sept. 11 and defeating terrorism. The “war on terror” narrative helped generate strong initial public support for U.S. involvement in Afghanistan (88% in 2001) and Iraq (70% in 2003).

So where is the U.S. national story today? Well, there is none. The anti-terrorism narrative disappeared with the decline of al-Qaeda and ISIS in the late 2010s. By 2019, 59% said Afghanistan “was not worth fighting” and only 27% said interventions in other countries made the U.S. safer. In short, with terrorism down, U.S. energy independence up, and Iran more a nuisance than an existential threat, the U.S. is left today with no big, unifying story for deep Middle East engagement, especially war.

The absence of a big story is showing up today in debates about the Middle East. Polls show that 84% of Americans worry about getting pulled into war. Some 65% want a cease-fire in Israel’s war in Gaza, not U.S. military action. Biden’s efforts to rally the nation with eloquent statements haven’t worked either. (As other Presidents can attest, that happens with no big story.) Only 33% approve of Biden’s handling of today’s crisis.

Opposition to Biden’s approach on Gaza will only expand with a wider war. Young voters strongly oppose his unwavering support for Israel’s disproportionate use of force in Gaza, which has killed at least 26,000 Palestinians, most of them women and children.



Biden at the arrival of U.S. soldiers’ remains at Dover Air Force Base on Feb. 2

Progressive Democrats are balking too. A new U.S. war today will create deep revulsion from these quarters.

Revulsion will also come from Republicans. The powerful nationalist wing of the GOP is uncomfortable with war today. Donald Trump complained recently about too much bombing in the Middle East, and some MAGA leaders want to slow or stop military action. All this should give U.S. decisionmakers pause. Unpopular wars can create a lot of public resistance to wars that are actually in the national interest.

DIRECT U.S. INVOLVEMENT in a Middle East war today would be terrible at a time when Washington needs to remain nimble and engaged to manage major challenges in Asia and Europe. Biden needs to bring the temperature down. He should rule out any strikes inside Iran, which denied involvement in the Jan. 29 attack. He should also reconsider further airstrikes against the Iran-backed Houthis in Yemen and return to the defensive posture of intercepting incoming attacks on international shipping in the Red Sea. This strategy was working effectively—no deaths or major damage—before the U.S. began strikes

in Yemen, and can work going forward. In general, striking Iranian proxies does little damage to their capabilities, but does a lot to enhance their legitimacy. Stepping back helps get the U.S. off the escalation ladder to war.

The Biden Administration can concurrently reduce accessible targets for Iran-backed groups. That means pressing (and perhaps mandating) U.S.-flagged vessels to avoid the Red Sea and redeploying troops in Jordan, Syria, and Iraq to more secure regional bases farther afield from the ongoing Israel-Hamas War. The U.S. regularly moves highly exposed troops for force protection.

Most crucially, Washington needs to push Israel to a cease-fire in Gaza. Its war is quickly becoming a regional war at odds with U.S. interests. A cease-fire will cool regional tensions, stop further escalation, keep the U.S. home front from exploding, and bring policy in line with true U.S. national-security interests—most of which now lie outside the Middle East.

Adjust Middle East policy before it’s too late.

Walldorf is a professor of politics and international affairs at Wake Forest University

Keep a wary eye on North Korea

OVER THE DECADES, NORTH KOREA'S leaders have periodically made bombastic threats of military force against South Korea and its foreign backers, particularly the U.S. and Japan. And for the most part, while carefully monitoring North Korean military moves on the ground, by sea, and in the air, leaders in Seoul, Washington, and Tokyo could dismiss these incendiary-sounding warnings as a substitute for action rather than a sign that aggression is imminent.

There are reasons why that might be changing—and why we should now pay closer attention to what Kim Jong Un and his generals are up to. There are growing worries North Korea could carry out a surprise attack or launch some other provocation against South Korea over the course of this year, even if it falls

short of war. The risk looks particularly high in the run-up to South Korea's next legislative elections, now set for April.

First, it is worth noting that North Korea's Kim has publicly stepped away from previous claims that Pyongyang's ultimate goal is a peaceful reunification of the two Koreas on North Korea's terms, a fantasy North Korean officials have promoted for decades. To be sure that his point wasn't too subtle, he recently ordered the destruction of a large monument to reunification in Pyongyang and tagged South Korea as his country's "primary foe and invariable principal enemy."

This comes at a time when North Korea is also partnering more closely with Moscow in the supply of weapons and ammunition

for Russia's war on Ukraine, partially in exchange for Russian technology that could boost North Korea's long-range firepower, satellite coverage, and cybercapabilities, including against American targets. The longtime ideological affinity Moscow and Pyongyang share in hopes of building a world order no longer dominated by U.S. power has increasingly shifted into



A TV broadcast of Kim Jong Un at a ceremony to celebrate a new "tactical nuclear attack submarine" last fall

commercial relations with battlefield importance, boosting Pyongyang's self-confidence and maybe its risk tolerance.

Second, I'm hearing more overt warnings from senior Chinese officials, unhappy with closer North Korean–Russian relations, of a potentially "explosive" threat that North Korea poses for South Korea. For his part, South Korea's President Yoon Suk-yeol is offering no conciliation in response. In fact, he has pledged that his country would hit back "multiple times as hard" against any North Korean assault.

North Korea has become more aggressive in the past month. In the first week of January, its forces fired artillery shells into a buffer zone near the maritime border that separates North and South Korea.

Seoul fired back, though no casualties were reported. On Jan. 14, North Korea test-fired a solid-fuel intermediate-range ballistic missile. On Jan. 19, it claimed to have tested a nuclear-capable underwater attack drone, though South Korean officials called this claim exaggerated. On Jan. 24 and 28, North Korea test-fired submarine-launched strategic cruise missiles. On Jan. 30, it test-fired a land-based strategic cruise missile. Even by Pyongyang's standards, that's a lot of noise in a single month.

THE BASIC FACTS that have prevented war for the past 70 years haven't changed enough for anyone to expect an open cross-border conflict. Beijing still has crucial influence within Pyongyang's political and military leadership, and

China's Xi Jinping has taken notice of North Korea's new tone. There is also still an understanding on both sides of the DMZ that given the weapons in both countries' arsenals, an all-out war would quickly kill tens of millions of people, and North Korea's government would cease to exist.

But that's not enough to prevent provocative border incursions, drone infiltrations of opposing airspace, cyberattacks, and other actions that raise the risk of accidental confrontation that both sides might find hard to contain. The Biden Administration is now focused on turmoil in Gaza, on Ukraine's battlefield, and at the U.S. southern border. That shouldn't take anyone's focus off North Korea's newly belligerent behavior. □



CO₂ Leadership Brief By Justin Worland

SENIOR CORRESPONDENT

Ever since the dawn of the Industrial Revolution, economic output has grown in lockstep with carbon emissions. The relationship is simple: the more humans produce and consume, the more energy is required. And, more energy equals more emissions. That **history has led to a persistent belief that dealing with climate change means accepting lower growth. Now, reality is challenging that assumption.**

New analyses point out that carbon emissions are diverging from economic growth in many countries. The fact that emissions can be durably decoupled from economic growth is real-world proof that the green transition under way can endure without crushing the economy. In January, the Rhodium Group, an independent research firm, found that U.S. carbon emissions dropped slightly even as the economy grew, in large part because of the continued move away from coal power.

The International Energy Agency showed how this same trend is playing out across developed countries. GDP has grown while emissions drop in the U.S., Europe, Japan, Korea, Australia, and New Zealand. In countries like India and China, the speed at which emissions are increasing has slowed even as the economy grows. Each country has its own story, but the contours remain the same: clean energy, energy efficiency, and the electrification of things that would have once been powered by fossil fuels. While this decoupling isn't happening fast enough, the good news is that accelerating it will also create opportunities for new innovations across industries and technologies. Business just needs to seize them.



For insights on business and climate, sign up at time.com/co2-report



The D.C. Brief By Philip Elliott

WASHINGTON CORRESPONDENT

IN A TYPICAL ELECTION YEAR, WE would be seven months away from the first presidential debate of the parties' nominees. A date and location are already penciled in: Sept. 16 at Texas State University in San Marcos. The campaign teams of President Joe Biden and his predecessor, Donald Trump, would likely schedule days of prep away from the trail, and plan to frame the outcome as a win for their side and an abject failure for the other.

While that scenario could still happen, a likelier one is that the Texas event gets canceled, as do the ones in Virginia and Utah planned for October. In fact, **we may have already seen the final presidential debate of 2024**—the one that took place back on Jan. 10 in Des Moines, Iowa, between Republicans Nikki Haley and Ron DeSantis. Trump, as he had for every primary debate, skipped it, refusing to share the same air as his lesser-polling rivals. (Ratings for these events were terrible without Trump.)

And now we appear to be heading to a game of debate chicken,

with the campaigns signaling that the likely candidates may never step on the same stage before Election Day.

A spokeswoman for Biden's campaign said headquarters would have no comment about the debate schedule. Two spokespeople for Trump's efforts didn't even acknowledge the question. At other times, when asked directly about the debates, top officials dodged the issue as being premature given neither candidate is yet the official nominee. But chat with advisers who claim to be shaping campaign strategy, and their responses reveal themselves to be an attempt to set expectations for a Trump-Biden debate that could still happen (though probably won't).

How did we get here? Even before Trump won a single vote or

'That's what I love. The two of us have to debate.'

—FORMER PRESIDENT DONALD TRUMP

<
The President and his predecessor are in a game of debate chicken

earned a lone delegate in his quest to return to the White House, the Republican National Committee told the long-standing bipartisan group that has organized presidential debates for decades that it was not interested in their planning. If the nominee—presumed even back then in 2022 to be Trump—wanted to face off against the Democratic choice for 2024, they maybe could work out a side deal. But nothing was going to be pushed through the Commission on Presidential Debates.

Then, a year later, Trump contradicted the central party's earlier effort on his behalf: "He and I have to definitely debate," Trump said in June when asked about a head-to-head session against Biden. And Trump half-joked in December that he wanted to make debates a centerpiece of his run: "How about 10 debates?"

A chance to take on Biden might be too tempting for Trump to resist, though he is being counseled to limit his already wide exposure—including in courtrooms. Biden, who harbors a visceral reaction to "the former guy," may also be tempted. But he also trusts his inner circle, many of whom are very much against a face-to-face brawl where things could go sideways at any moment.

Put plainly: debates are one of the easiest ways to reset a campaign's dynamic, and the lure may prove too much. Trump may find the drama too juicy; Biden may want to prove he still has the Trump-slaying skills of four years ago. So while the chances of any general-election debate happening this fall appear awfully slim, we still can't rule them out. But there's also the question of how many Americans are persuadable. In a contest of elders, it's possible debates have aged out.



For more insights from Washington, sign up for TIME's politics newsletter at time.com/theDCbrief



Health Matters By Alice Park

SENIOR HEALTH CORRESPONDENT

THE LATEST COVID-19 VACCINE offers strong protection against the currently dominant strain of the virus, according to a recent report in the *MMWR*, published by the U.S. Centers for Disease Control and Prevention (CDC). It's the first effectiveness data for the updated vaccine, which was released last fall.

Using federal and pharmacy-reported datasets, the team of CDC scientists compared the COVID-19 test results of people who were having symptoms from September 2023 to mid-January 2024 with their vaccination status. They found that the **new vaccine was about 54% effective.**

They further calculated that the shot was 49% effective at protecting against symptoms from the JN.1 variant, which causes most of the new infections occurring in the U.S. right now. That's both good and surprising news, since the shot was designed to target a different version of the virus, the XBB.1.5 variant.

"This is, to my knowledge, the first vaccine-effectiveness estimates available worldwide for JN.1," says Ruth Link-Gelles, who leads the vaccine-effectiveness program for COVID-19 and RSV at CDC and who led the analysis. "What these results show is that someone who got this vaccine would have an extra boost of protection against symptomatic infection from both the XBB variant that was common in the fall, as well as JN.1, which is circulating now."

Her group plans to release more

detailed data on the vaccine's impact on emergency-room and urgent-care visits, as well as hospitalizations, in coming weeks. But Link-Gelles says these initial data are encouraging. "The COVID-19 vaccine is looking a lot like the flu vaccine, where we see about 50% protection against influenza in a good year against both infections and hospitalizations."

But all COVID-19 immunity wanes, whether it's derived from vaccines, infections, or both.

Link-Gelles says additional data will show how long the protection from vaccination lasts against symptoms of the disease. (Previous research suggests that protection against severe illness is more durable.)

The results underscore what doctors and public-health officials keeping telling us—that vaccines work. Getting vaccinated is even more urgent for people at higher risk of complications from COVID-19, such as the elderly, pregnant people, and those with underlying health conditions.

"There is elevated COVID-19 activity all across the country, but still very low vaccine coverage," says Dr. Manisha Patel, chief medical officer of CDC's National Center for Infectious Respiratory Diseases. Only 21% of all adults—and just 41% of people over 65, the highest-risk age group—have gotten the latest shot. "These data show that, really, the time to get vaccinated is now."

'The time to get vaccinated is now.'

—DR. MANISHA PATEL,
NATIONAL CENTER FOR
INFECTIOUS RESPIRATORY
DISEASES



For more health news, sign up for Health Matters at time.com/health-matters

SOCIETY

Rest actually takes hard work

BY ALEX SOOJUNG-KIM PANG

AMERICANS HAVE LONG BEEN KNOWN FOR OUR INDUSTRY and ambition, but until recently, we also recognized the value of rest. The Puritans had a famously strict work ethic, but they also took their Sundays very seriously. In 1842, Henry David Thoreau observed, “The really efficient laborer will be found not to crowd his day with work, but will saunter to his task surrounded by a wide halo of ease and leisure”; a decade later he wrote, “A broad margin of leisure is as beautiful in a man’s life as in a book.” Post–Civil War captains of industry didn’t rise and grind, according to business journalist Bertie Charles Forbes: “No man goes in more whole-heartedly for sport and other forms of recreation than” industrialist Coleman du Pont, while Teddy Roosevelt “boisterously ... enters into recreation” despite a busy public life.

At the same time, union organizers, mass media and entertainment, and the parks movement democratized leisure: rest became a right, enshrined as much in college sports and penny arcades as in labor law. Richard Nixon, during a campaign speech in 1956, predicted that “new forms of production will evolve” to make “backbreaking toil and mind-wearying tension” a thing of the past, and “a four-day week and family life will be ... enjoyed by every American.” Together, these sources paint a vision of American life in which work and leisure are partners in a good life, and “machines and electronic devices,” as Nixon called them, created more time for everyone.

But in recent decades, the world turned against rest. Globalization, the decline of unions, and the rise of gig work are factors that have created an environment in which people and companies feel compelled to work constantly. The CEO who steadily worked his way up from the mailroom to the corner office has been replaced by the 20-something genius who makes billions by disrupting the system. Technology lets us carry our offices around in our pockets, and makes it almost impossible for us to disconnect from work. Even the blue-tinted glow of our screens and late-night traffic noise can have a measurable impact on the quality of our sleep. Add raising children and managing family schedules, and Thoreau’s “wide halo of ease and leisure” sounds great but, ultimately, impossible.

Early in your career, it’s easy to believe that passion and youthful energy are inexhaustible. But at some point, family demands, a health scare, or the passage of time forces you to find ways of working that rely on experience rather than raw energy, are more sustainable, and let you run marathons rather than sprints. Not everyone successfully makes the transition. But in studying everyone from Nobel laureates to emergency-room nurses, I’ve found that people who

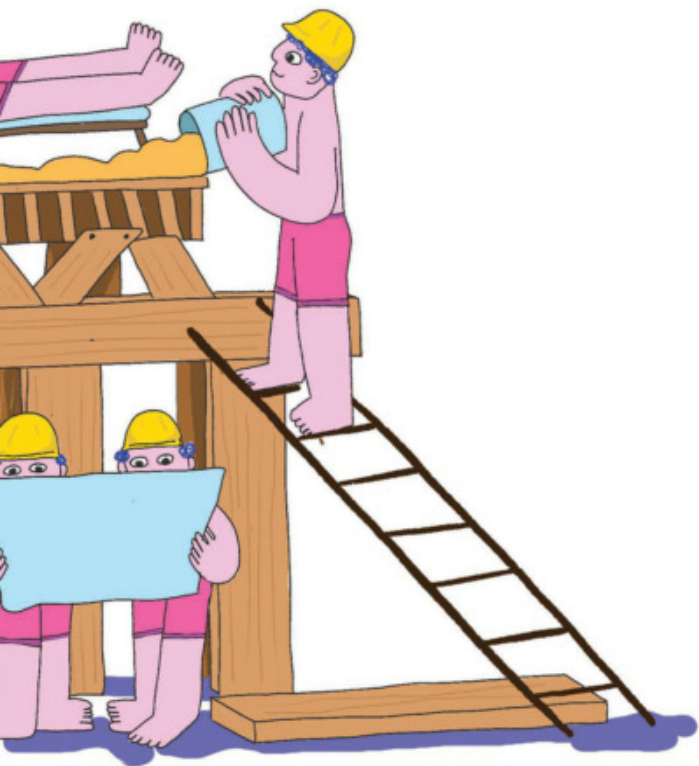


are able to do the work they love for decades, rather than burn out in a few years, share a few things in common.

THERE ARE FEW THINGS better for us than regular rest. Whether it’s breaks during the day, hobbies that take our mind off work, weekly sabbaths, or annual vacations, routines that layer periods of work and rest help us be more productive, have more sustainable careers, and enjoy richer and more meaningful lives.

But too often, rest gets a bad rap in our always-on, work-obsessed world. It’s also the case that learning to rest well is actually hard. Why is that? And how can we rest better?

Often, people who have control over their daily schedules layer periods of “deep work,” as Cal Newport calls it, and “deliberate rest,” time to both recharge and let the creative subconscious examine problems that they haven’t been able to solve through hard work. Many great scientists, mathematicians, and composers have daily routines in which they work intensively for a couple hours, take a long break, then work a couple



and boost your chances of promotion.) Vacations and sabbaticals can also be an incubator for new ideas. Lin-Manuel Miranda started toying with the idea of a musical about Alexander Hamilton after reading Ron Chernow’s biography on vacation. “It’s no accident that the best idea I’ve ever had in my life—maybe the best one I’ll ever have in my life—came to me on vacation,” Miranda said in 2016. “The moment my brain got a moment’s rest, *Hamilton* walked into it.”

SO LET’S SAY YOU TAKE REST SERIOUSLY, recognize its importance for health and performance, and calculate that a more disciplined, measured approach to work will pay off in the long run. How can you get started?

For many, it begins at work. Reducing distractions, becoming more efficient at tasks you can control, and automating routine duties can create time in your day for short breaks that recharge your batteries, and make it easier to maintain clear lines between work and personal time. Better planning and prioritizing will also mean fewer late nights and avoidable crises. Doing this with colleagues amplifies the benefits. Companies that adopt four-day workweeks succeed because they redesign their workday to give everyone more deep-work time, less time in meetings, and fewer interruptions.

Next, find your deep play. If you have a hobby you’re passionate about, you’re more likely to make time for it, and feel good about doing it. If you already have a favorite pastime that was crowded out by work, you have permission to take it back up. If not, look for something that offers satisfactions as rich as work when it goes well, but in concentrated doses, and in a completely different environment (outdoors and physical if you work in an office). You can’t think about clients on a surfboard.

Take your vacations. Shorter, more frequent vacations are often more restorative, because they’re lower-stakes than once-in-a-lifetime expeditions, and a drip feed of anticipation, escape, and recovery is better than one big hit of happiness a year. The only bad vacation is the one you don’t take.

Finally, play a long game. It may feel like a waste of time at first, but layering periods of work and rest in your day, your week, and your year help you work more consistently, more sustainably, and to a higher level of quality. We’re fascinated by youthful genius and overnight success, but immortality-level accomplishment often comes later in life, after decades of steady work: Margaret Atwood wrote *The Handmaid’s Tale* when she was 45; Charles Darwin was 50 when he published *The Origin of Species*; Duke Ellington made his immortal Newport Jazz Festival appearance at 57; and J.R.R. Tolkien published *The Return of the King* at 63. Deliberate rest, woven into your days and life, acts as a mainspring and regulator, giving you more energy, more ideas, and more time for good work and a good life. In today’s always-on world, few things are harder to do than rest. But few things are more worthwhile.

Pang is a leading advocate for the four-day workweek. He is the author of four books, including Rest: Why You Get More Done When You Work Less

more—and those four or five hours give you enough time to make steady progress on your work, and come up with some new, unexpected ideas.

People in high-stress, unpredictable jobs can’t depend on such routines; but the most successful at dealing with the challenges of work rely on two other things: First, they have good boundaries between work and personal time. Second, they have serious hobbies—everything from quilting to rebuilding classic cars to running marathons—that are as absorbing as their work. This “deep play” illustrates another important point: the best rest is active, not just passive. We often think of “rest” as involving a bag of salty snacks and a TV remote, but working out or playing piano actually recharges your mental and physical batteries more effectively than binge-watching that hot new show.

Long-term studies reveal another important rest hack. Taking annual vacations boosts your happiness, improves your cardiovascular health, and helps you age better compared with colleagues who chain themselves to the office. (You’ll also be more productive

**The
only bad
vacation
is the one
you don’t
take**

An aerial, monochromatic blue-toned photograph of a city grid, likely Kyiv, showing a dense network of streets and buildings. Several yellow location pins are scattered across the grid, marking specific points of interest. The overall tone is somber and analytical.

WORLD

THE WAR LAB

BY VERA BERGENGRUEN | KYIV



**HOW TECH COMPANIES
JOINED FORCES WITH
ZELENSKY'S GOVERNMENT
TO TURN UKRAINE'S
BATTLEFIELDS INTO
A TESTING GROUND
FOR MILITARY AI**

Early on the morning of June 1, 2022, Alex Karp, the CEO of the data-analytics firm Palantir Technologies, crossed the border between Poland and Ukraine on foot, with five colleagues in tow. A pair of beaten-up Toyota Land Cruisers awaited on the other side.

Chauffeured by armed guards, they sped down empty highways toward Kyiv, past bombed-out buildings, bridges damaged by artillery, the remnants of burned trucks.

They arrived in the capital before the wartime curfew. The next day, Karp was escorted into the fortified bunker of the presidential palace, becoming the first leader of a major Western company to meet with Ukrainian President Volodymyr Zelensky since Russia's invasion three months earlier. Over a round of espressos, Karp told Zelensky that he was ready to open an office in Kyiv and deploy Palantir's data and artificial-intelligence software to support Ukraine's defense. Karp believed they could team up "in ways that allow David to beat a modern-day Goliath."

In the stratosphere of top tech CEOs, Karp is an unusual figure. At 56, he is a lanky tai chi aficionado with a cloud of wiry gray curls that gives him the air of an eccentric scientist. He has a Ph.D. in philosophy from a German university, where he studied under the famous social theorist Jürgen Habermas, and a law degree from Stanford, where he became friends with the controversial venture capitalist and Palantir co-founder Peter Thiel. After Palantir became tech's most secretive unicorn, Karp moved the company to Denver to escape Silicon Valley's "monoculture," though he typically works out of a barn in New Hampshire when he's not traveling.

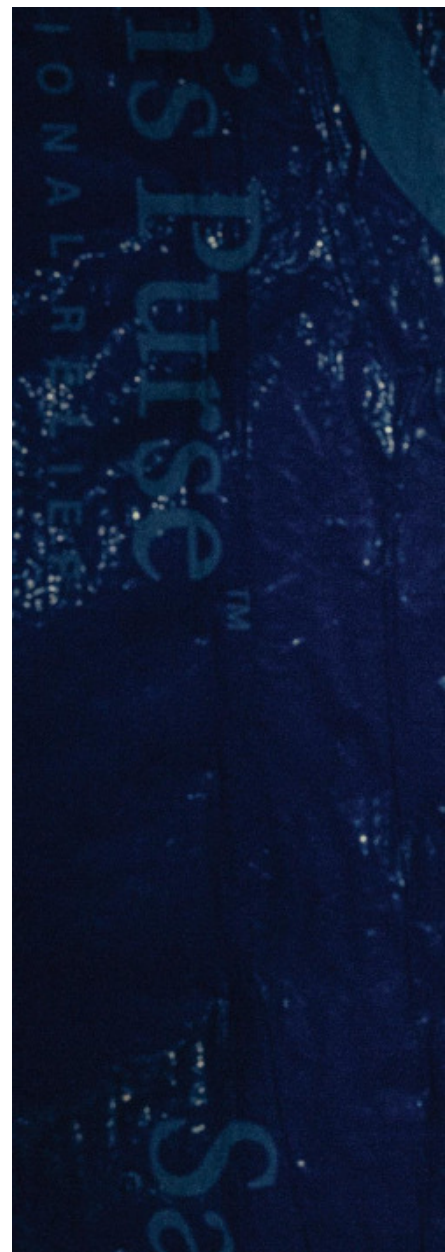
The Ukrainians weren't sure what to think of the man making grandiose promises across the ornate wooden table. But they were familiar with the company's reputation, recalls Mykhailo Fedorov, Ukraine's Minister of Digital Transformation, who was in that first meeting. Named after the mystical seeing stones in *The Lord of the Rings*, Palantir sells the same aura of omniscience. Seeded in part by an investment from the CIA's venture-capital arm, it built its business providing data-analytics software to U.S. Immigration and Customs Enforcement (ICE), the FBI, the Department of Defense, and a host of foreign-intelligence agencies. "They are the AI arms dealer of the 21st century," says Jacob Helberg, a national-security expert who serves as an outside-policy adviser to Karp. In Ukraine, Karp tells me, he saw the opportunity to fulfill Palantir's mission to "defend the West" and to "scare the f-ck out of our enemies."

Ukraine saw an opportunity too. At first it was driven by desperation, says Fedorov, 33. With the Russians threatening

to topple Zelensky's democratically elected government and occupy the country, Kyiv needed all the help it could get. But soon, government officials realized they had a chance to develop the country's own tech sector. European capitals to Silicon Valley, Fedorov and his deputies began marketing the battlefields of Ukraine as laboratories for the latest military technologies. "Our big mission is to make Ukraine the world's tech R&D lab," Fedorov says.

The progress has been striking. In the year and a half since Karp's initial meeting with Zelensky, Palantir has embedded itself in the day-to-day work of a wartime foreign government in an unprecedented way. More than half a dozen Ukrainian agencies, including its Ministries of Defense, Economy, and Education, are using the company's products. Palantir's software, which uses AI to analyze satellite imagery, open-source data, drone footage, and reports from the ground to present commanders with military options, is "responsible for most of the targeting in Ukraine," according to Karp. Ukrainian officials told me they are using the company's data analytics for projects that go far beyond battlefield intelligence, including collecting evidence of war crimes, clearing land mines, resettling displaced refugees, and rooting out corruption. Palantir was so keen to showcase its capabilities that it provided them to Ukraine free of charge.

It is far from the only tech company assisting the Ukrainian war effort. Giants like Microsoft, Amazon, Google, and Starlink have worked to protect Ukraine from Russian cyberattacks, migrate critical government data to the cloud, and keep the country connected, committing hundreds of





A Ukrainian military analyst reviews videos obtained by drone operators near Bakhmut in January 2023

millions of dollars to the nation's defense. The controversial U.S. facial-recognition company Clearview AI has provided its tools to more than 1,500 Ukrainian officials, who have used it to identify more than 230,000 Russians on their soil as well as Ukrainian collaborators. Smaller American and European companies, many focused on autonomous drones, have set up shop in Kyiv too, leading young Ukrainians to dub some of the city's crowded co-working spaces "Mil-Tech Valley."

War has always driven innovation, from the crossbow to the internet, and in the modern era private industry has made key contributions to breakthroughs like the atom bomb. But the collaboration between foreign tech companies and the Ukrainian armed forces, who say they have a software engineer deployed with each battalion, is driving a new kind of experimentation in military AI. The result is an acceleration of "the most significant fundamental change in the character of war ever recorded in history," General Mark Milley, former Chairman of the Joint Chiefs of Staff, told reporters in Washington last year.

It can be hard to see that from afar. By all accounts, the war in Ukraine has settled into a stalemate, with both sides hammering away with 20th century weapons like artillery and tanks. Some view the claims of high-tech breakthroughs with skepticism, arguing that the grinding war of attrition is little affected by the deployment of AI tools. But Ukraine and its private-sector allies say they are playing a longer game: creating a war lab for the future. Ukraine "is the best test ground for all the newest tech," Fedorov says, "because here you can test them in real-life conditions." Says Karp: "There are things that we can do on the battlefield that we could not do in a domestic context."

If the future of warfare is being beta tested on the ground in Ukraine, the results will have global ramifications. In conflicts waged with software and AI, where more military

decisions are likely to be handed off to algorithms, tech companies stand to wield outside power as independent actors. The ones willing to move fast and flout legal, ethical, or regulatory norms could make the biggest breakthroughs. National-security officials and experts warn these new tools risk falling into the hands of adversaries. “The prospects for proliferation are crazy,” says Rita Konaev of Georgetown’s Center for Security and Emerging Technology. “Most companies operating in Ukraine right now say they align with U.S. national-security goals—but what happens when they don’t? What happens the day after?”

IN THE MONTHS since Karp’s cloak-and-dagger first meeting with Zelensky, Palantir brass have fallen into a familiar routine on their frequent trips into Ukraine. In October, I met a London-based Palantir employee at the airport in Krakow, Poland. We were picked up in two armored cars, handed emergency medical kits “just in case,” and driven to the border with Ukraine. Gone was what one executive described to me as the “Kalashnikov-between-the-knees vibe.” We zipped through the border checkpoint, where young Ukrainian recruits dozed in the light rain. After dozens of these journeys, Palantir employees have their favorite gas-station snacks on the long road to Kyiv; their favorite drivers (a hulking former soldier for the Polish special forces who goes by Horse got us there with terrifying speed); and their favorite specialty coffee shops around the capital. These days, the lobbies of Kyiv’s five-star hotels are full of security details trying to inconspicuously sip beers while waiting for foreign-defense, tech, and government executives.

Much of Palantir’s work there is conducted in stylish co-working spaces by a team of fewer than a dozen local employees who work directly with Ukrainian officials. When I visited one such office in October, three men with close-cropped hair and cargo pants stood out against the trendy crowd of 20-somethings before they disappeared to meet with Palantir employees in a room booked under a fake name. “It often feels like a tech-startup vibe: let’s see what we can do with two old cameras and a drone flying around,” says Vic, an engineer who left their job at a U.S. tech giant to work for Palantir in Kyiv after the invasion, and asked to be identified by a pseudonym for security reasons. “Except we’re in the middle of a war.”

With a few clicks, a Ukrainian Palantir engineer showed me how they could mine a dizzying array of battlefield data that, until recently, would have taken hundreds of humans to analyze. Palantir’s software processes raw intelligence from sources including drones, satellites, and Ukrainians on the ground, as well as radar that can see through clouds and thermal images that can detect troop movements and artillery fire. AI-enabled models can then present military officials with the most effective options to target and enemy positions. The models learn and improve with each strike, according to Palantir.

When the company first started working with the Ukrainian government in the summer of 2022, “it was just a question of pure survival,” says Louis Mosley, Palantir’s executive vice president for U.K. and Europe. Palantir hired Ukrainian engineers who could adapt its software for the war effort,

‘THERE ARE THINGS THAT WE CAN DO ON THE BATTLEFIELD THAT WE COULD NOT DO IN A DOMESTIC CONTEXT.’

—Alex Karp

while also serving as interlocutors between the tech company and Ukraine’s sclerotic bureaucracy. Government officials were trained to use a Palantir tool called MetaConstellation, which uses commercial data, including satellite imagery,

to give a near real-time picture of a given battle space. Palantir’s software integrates that information with commercial and classified government data, including from allies, which allows military officials to communicate enemy positions to commanders on the ground or decide to strike a target. This is part of what Karp calls a digital “kill chain.”

Although recent earnings data from the company indicates that partner countries have chipped in tens of millions to offset Palantir’s investment, Ukraine has not paid Palantir for its tools and services. Its motivations in Ukraine have little to do with short-term profit. In recent years, Palantir has sought to shed its reputation as a shadowy data-mining spy contractor as it expands its list of commercial clients. Its tools have played a role in uncovering the financial fraud carried out by Bernie Madoff, rooting out Chinese spyware installed on the Dalai Lama’s computer, and allegedly aiding in the hunt for Osama bin Laden—a long-standing rumor the company has been careful not to dispute. More recently it has highlighted its work with the U.N. World Food Programme and the use of its software to track COVID-19 vaccine production and distribution.

Karp has long dismissed widespread criticism that Palantir’s tools enable intrusive government surveillance. Amnesty International has accused the company of seeking to “deflect and minimize its responsibility to protect human rights,” and said Palantir’s tools have allowed government agencies to track and identify migrants and asylum seekers to carry out arrests and workplace raids. The CEO says he sees a moral imperative to supply Western governments with the best emerging technology, calling for “more intimate collaboration between the state and the technology sector” that he believes will allow the West to maintain its edge over global adversaries.

In Ukraine, Palantir had found an opportunity to put this mission into practice while burnishing its reputation. “People





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Karp, Palantir's CEO, casts his company's mission as using cutting-edge technology to defend the West against global adversaries

often have preconceived notions about Palantir, but our products work,” says vice president Josh Harris. “When it’s existential, and when it needs to work, you take off your blinders, you take out all the politics.” And in Ukraine’s leaders, the company found a group of young, tech-savvy officials who could help them with more than just PR.

WHEN I VISITED last fall, the stately avenue that leads to Ukraine’s cabinet building in downtown Kyiv was lined with rusted antitank barricades and checkpoints manned by rifle-toting soldiers. The windows of the imposing Soviet-era building that houses most of Zelensky’s government were covered by sandbags. Government workers wove through the darkened hallways, using their phones to light the way.

Fedorov’s sixth-floor office was illuminated by neon lamps. A treadmill, boxing gloves, and an exercise bike made up a small gym in one corner. At a conference table flanked by large screens, a stone sculpture of an alien wore a BIDEN-HARRIS 2020 cap. A neat stack of fanned-out magazines near the doorway bore a message to the world: UKRAINE: OPEN FOR BUSINESS.

For the past 18 months, Fedorov and his deputies have brought that message to tech CEOs, defense conferences, and business summits. The former digital-marketing entrepreneur, who is the youngest member of Zelensky’s cabinet, has framed the battlefields of Ukraine and its modern wartime society as the best possible testing ground for cutting-edge innovation. “The tech sector will be the main engine of our future growth,” Fedorov told me. On the day we spoke in his office, Fedorov had just finished one of his regular calls with leaders at Microsoft and was due to meet with Google

executives visiting Kyiv. He has been on the cover of *Wired* magazine and spoken about Ukraine’s tech achievements in wartime at the World Economic Forum in Davos, Switzerland. It’s a striking turnaround from when I first interviewed Fedorov in March 2022. Back then, he was speaking into AirPods from a darkened bunker with an erratic video connection, and his team was resorting to Twitter to lobby and shame the world’s largest tech companies to block their services in Russia.

In the first months of the war, Ukrainian officials accepted whatever help was offered. They took cyber and cloud services from Microsoft, Amazon, and Google; Starlink terminals from Elon Musk; facial-recognition software from Clearview AI; and a host of experimental drones, cameras, and jamming kits from large defense companies and startups alike. Fedorov rallied an “IT Army” of 400,000 volunteer hackers to help protect critical infrastructure and counter Russian cyberattacks. “In the beginning there was no process. There was chaos,” says Alex Bornyakov, Fedorov’s 41-year-old deputy. By that summer, he adds, “we had to calm ourselves down and say, ‘We can’t go on this way. We need a strategy for the long term.’”

The solution they landed on was to build a tech sector that could not just help win the war but also serve as a pillar of Ukraine’s economy when it was over. Israel, a hotbed for tech startups, was a model. Ukraine’s 300,000 tech workers, many employed by American companies before the war, were eager to contribute to the fight by working for the multiplying number of domestic military startups. “We decided, let’s send a message that it’s not about donations,” says Bornyakov. “The best way to help Ukraine is to invest in Ukraine.”

They first tested the new pitch at the Ukraine Recovery Conference in Lugano, Switzerland, that July. The response was swift. Silicon Valley investors launched the Blue and Yellow Heritage Fund to invest in Ukrainian startups. “It is not a charity,” founding partner John Frankel said at the time. “It’s our way of contributing, but also getting what we think will be a high return on capital.”

Fedorov and Bornyakov set up incentives, expanding special tax breaks to defense-tech companies to entice them to come to Kyiv. They launched “trade missions” to conferences in London, San Francisco, Toronto, Brussels, Davos, and Dubai. By early 2023, the road show was almost going too well. “We were bombarded with so much military defense stuff from [startups] saying, ‘I have this idea of how to win the war,’” says Bornyakov. He and Fedorov launched a digital platform called Brave1, through which defense-tech companies, startups, and ordinary Ukrainians can pitch their products. It has received more than 1,145 submissions, hundreds of which are being tested on the battlefield, according to Fedorov’s office. This includes drones, AI-transcription software that could decipher Russian military jargon, radios that prevent Russian jamming, patches for cyber vulnerabilities, and demining equipment.

In meetings with more than a dozen Ukrainian officials, I was given demos of how many of these tools work—and how they’re used for tasks beyond the battlefield. Dmytro Zavgorodnii, a digital official at the Ministry of Education and Science, showed me dashboards with satellite maps

tracking schools affected by air-raid alerts or power outages, the condition of roads, and estimates for how long it would take students to access shelters with wi-fi. This software, provided by Palantir, will help the ministry determine how to keep schools open, provide laptops and connectivity in conflict zones, and conduct national testing with minimal disruption. “It’s like a superpower,” Zavgorodnii explained.

Huddled around a laptop, Ukrainian Economy Minister Yulia Svyrydenko showed me how Palantir’s software has made it possible to aggregate dozens of previously siloed data streams to help officials clear the country of land mines. Ukraine has become the most heavily mined country in the world, with unexploded ordnance endangering more than 6 million civilians and making vast swathes of farmland unusable. The ministry works with Palantir to develop models to determine where demining efforts could have the biggest impact, helping Svyrydenko devise a plan to bring 80% of contaminated land back into economic use within 10 years. In an interview at a Kyiv hotel, Ukraine’s Attorney General Andriy Kostin told me how his agency employs Palantir’s software in its effort to prosecute alleged Russian war crimes—using its analysis of vast troves of data to link allegations of war crimes to pieces of evidence, including satellite imagery, troop movements, and open-source data like photos and videos uploaded by Ukrainians on social media.

Other tech companies have also been supplying the Ukrainian government with products to help win the war. One of the most successful has been Clearview, which Ukraine’s Deputy Minister of Internal Affairs Leonid Tymchenko described to me as the country’s “secret weapon” against invading Russian troops. It’s being used by 1,500 officials across 18 Ukrainian agencies, and has helped identify more than 230,000 Russian soldiers who have participated in the military invasion, making it possible to link them to evidence of alleged war crimes, according to Ukrainian officials. Clearview is reaping the benefits too. Ukrainian engineers have “definitely made our product a lot better,” its CEO Hoan Ton-That says.

A SHORT DRIVE from downtown Kyiv sits a bustling high-tech “innovation park” called Unit City. It’s a sprawling campus of ultramodern offices built on the grounds of an old Soviet factory that produced knockoffs of German motorcycles. Unit City is the epicenter of Ukraine’s efforts to turn its tech industry “into the main innovation hub in Europe,” says partner Kirill Bondar. Since the start of the war, U.S. and European government officials have visited Unit City; so have tech executives and luminaries like Vitalik Buterin, a creator of the Ethereum cryptocurrency blockchain.

Among the businesses based here is a Ukrainian military startup accelerator called D3 (Dare to Defend Democracy). High-profile foreign investors, including former Google CEO Eric Schmidt, have pumped more than \$10 million into D3. In trips to Ukraine, Schmidt says, he became convinced that the country’s front lines would produce breakthroughs in the use of AI and drones. “There’s simply so much volume, there’s so many players, there’s so much innovation,” Schmidt says. “It’s really impressive.”



Schmidt is among an array of prominent foreign investors attracted to the nascent promise of Ukraine’s tech sector. German drone manufacturer Quantum Systems recently announced it would open a research and development center in Kyiv. The Japanese tech giant Rakuten also announced its plan to open an office in the capital. Turkish drone maker Baykar has invested nearly \$100 million to build a research and manufacturing center in Ukraine by 2025. At a recent European defense conference, “no one would even look at a product unless it had TESTED IN UKRAINE stamped on it,” Deborah Fairlamb, the co-founder of Green Flag Ventures, a new fund dedicated to investing in Ukrainian startups, told me.

While encouraging the investment, the Ukrainian government is also seeking to preserve valuable battlefield data for its own budding defense industry. Officials told me they intend to export the innovations coming out of the conflict to address a variety of global crises beyond war, from disruptive blackouts to natural disasters. Over time, Kyiv has become much more selective about who they allow to access their front lines to refine their products. “There has been a change in the message,” a senior Palantir executive told me as he left a meeting with officials in Kyiv. “Now it seems they’re saying, ‘You know, you’re lucky to be here.’”

OUTSIDE ITS BORDERS, there are signs that Ukraine’s war lab has helped establish it as a major player on the global tech scene. At Web Summit, the world’s largest tech conference, which took place in Lisbon in November, Ukraine’s pavilion loomed over other exhibits in the cavernous arena. Two years earlier, its presence had been limited to a corner booth. Now 25 Ukrainian startups had set up kiosks, and dozens of young



workers in yellow TEAM UKRAINE shirts handed out promotional booklets. “The best time to invest in Ukraine is NOW, not after the war,” its marketing materials read.

Some of the lessons learned on Ukraine’s battlefields have already gone global. Citing Ukraine as a blueprint, Taiwan has recruited commercial drone makers and aerospace firms to embed within the military to build up its drone program amid rising tensions with China. Last month, the White House hosted Palantir and a handful of other defense companies to discuss battlefield technologies used against Russia in the war. The BATTLE-TESTED IN UKRAINE stamp seems to be working.

So is Palantir’s campaign to rehabilitate its reputation. In early January, amid the ongoing war against Hamas, Israel’s Defense Ministry struck a deal with the company to “harness Palantir’s advanced technology in support of war-related missions.” To Palantir executives, the demand for their tools from one of the world’s most technologically advanced militaries spoke for itself. But they were surprised when the usually discreet Israelis allowed the partnership to be made public, “almost as if the relationship itself would act as a military deterrent,” according to a person familiar with the discussions.

The next generation of AI warfare remains in its early stages. Some U.S. officials are skeptical that it will contribute to a military victory for Ukraine. As the war enters its third year, the Ukrainian counteroffensive has continued to stall. “The tech bros aren’t helping us too much,” Bill LaPlante, the U.S. Undersecretary of Defense for Acquisition and Sustainment, told a defense conference in November. “We’re not fighting in Ukraine with Silicon Valley right now, even though they’re going to try to take credit for it.”

Karp with Zelensky and Fedorov, far left, on June 2, 2022; Drones awaiting deployment to the front lines in July 2023

Ukraine’s use of tools provided by companies like Palantir and Clearview also raises complicated questions about when and how invasive technology should be used in wartime, as well as how far privacy rights should extend. Clearview CEO Ton-That contends that, like many new tools in this conflict, his facial-recognition software is “a technology that shines and only really is appreciated in times of crisis.” But alarmed human-rights groups and privacy advocates warn that unchecked access to his tool, which has been accused of violating privacy laws in Europe, could lead to mass surveillance or other abuses.

That may well be the price of experimentation. “Ukraine is a living laboratory in which some of these AI-enabled systems can reach maturity through live experiments and constant, quick reiteration,” says Jorritt Kaminga, the director of global policy at RAIN, a research firm that specializes in defense AI. Yet much of the new power will reside in the hands of private companies, not governments accountable to their people. “This is the first time ever, in a war, that most of the critical technologies are not coming from federally funded research labs but commercial technologies off the shelf,” says Steve Blank, a tech veteran and co-founder of the Gordian Knot Center for National Security Innovation at Stanford University. “And there’s a marketplace for this stuff. So the genie’s out of the bottle.” —With reporting by LESLIE DICKSTEIN and SIMMONE SHAH/NEW YORK

EPA CHIEF MICHAEL REGAN WANTS TO ADVANCE ENVIRONMENTAL JUSTICE—WITH THE ENERGY INDUSTRY'S HELP **BY JUSTIN WORLAND**

SEARCHING FOR COMMON GROUND



*Regan at a
petroleum refinery
in Reserve, La., on
Nov. 16, 2021*

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MICHAEL REGAN LOVES A GOOD PHOTO op. The EPA administrator spent much of his first two years in office crisscrossing the country, attracting a phalanx of local reporters wherever he turned up. But instead of welcoming veterans home or cutting the ribbon on bright and shiny bridges, the sites of Regan's press junkets have included a community plagued by coal ash in Puerto Rico, a Louisiana area in the shadows of petrochemical facilities where residents face high cancer rates, and a West Virginia county with a faulty wastewater-treatment plant.

On a blistering summer day in 2022, I watched as he brought the cameras to a trailer home in the back roads of Lowndes County, Alabama, where more than 40% of residents have raw sewage on their properties. On rainy days, which are increasing in severity as a result of climate change, the sewage often backs up into people's showers and sinks. Regan sat with a resident in front of a pool of raw sewage, seemingly unperturbed by the smell or the gargantuan bugs flying nearby on that humid morning. "We have a mission," he said. "No one in America in 2022 should have to have a hole in their backyard where waste flows in the very places that our children play."

Later that day, in an air-conditioned meeting hall, he shared the dais with a member of Congress, a state environmental administrator, and other Biden Administration officials to announce a new commitment of federal dollars to tackle the issue. The town hall couldn't avoid an airing of the grievances and allegations that lurked just beneath the surface: past money had been mis-spent by government officials; residents need to be willing to pay for the costs of better sanitation; it's too hard for local communities to access federal funds. Regan observed quietly, before

chiming in to make peace. "This is a top-to-bottom government partnership, from the White House on down to the mayor's office," he said. "I feel the sense of urgency; everyone at this table does."

Making peace in pursuit of progress is the core of Regan's job. For decades, the EPA has been a lightning rod for industry and conservative states while environmental advocates have demanded the agency do more faster. The Biden Administration's approach to tackling climate change requires buy-in from all of those constituencies. Achieving that consensus is Regan's challenge.

Perhaps nowhere else is that reconciliation harder than in the pursuit of environmental justice. Centuries of systemic discrimination have left people of color and low-income Americans vulnerable to environmental hazards. Fixing such entrenched problems is the work of generations. But as the EPA marks three years with Regan at its head—with the potential for a second Trump presidency around the corner, as well as an upcoming Supreme Court ruling that could gut the agency's authority—it's a daily mission that has gained new urgency. Regan's task: not just getting conservative states to spend on solutions and businesses to accept new regulations, all while staying engaged with environmental-justice leaders, but also to make sure those changes stick.

"It's exceedingly difficult," says Margot Brown, who heads the Environmental Defense Fund's Equity & Justice program and previously worked for a decade at the EPA. "If he agrees to something that industry is advocating for, environmental-justice groups are going to question his actions. And if he provides more support for the environmental-justice groups, then industry might call into question what he's doing."

**Centuries of
discrimination have
left people of color
and low-income
Americans vulnerable**

To strike that balance, Regan deploys an affable manner and a smile. And he modulates his rhetoric. Corporate executives hear about how he's trying to create regulatory certainty; environmental-justice leaders hear about his willingness to sue companies and states that move too slowly. Complaints are many, but Regan has thus far avoided the revolt from either side that has characterized his predecessors' tenures—and the money is flowing to communities in need.

The outcome of his efforts will be measured not just in dollars spent but in the health and quality of life of millions of poor Americans. Federal climate and infrastructure spending will total in the trillions in the coming years. If carried out well, these programs could help improve conditions on the ground across the country; if not, it may take another generation—or longer—before another opportunity comes along to address entrenched injustice. "For the first time in history, we have the resources to actually execute on these infrastructure changes," Regan told me in North Carolina not long after the meeting in Lowndes. "We are trying to meet that moment."

WHEN REGAN WAS less than 10 years old, the foundations of the modern environmental-justice movement were taking root less than 100 miles north of his hometown of Goldsboro, N.C. It was the early 1980s, and the era of legal segregation in the South had passed. But local activists found themselves in a new civil rights fight as they protested the state's plans to build a disposal facility for soil contaminated with the cancer-causing chemical known as PCB in a small African American community. Studies have suggested that the chemical can change children's brain function and harm reproductive health. Activists demonstrated daily for seven weeks, leading to the arrest of more than 500 protesters.

The protests that activists recall as a foundational moment, a young Regan knew as kitchen-table talk. He recalls listening to updates about the demonstrations and hearing his parents express admiration for the protesters. "It started here in Warren County," he told



▲
Regan meets the press at an open sewage pit in a backyard in Lowndes County, Alabama, on Aug. 22, 2022

me during a visit there. “It sparked a national movement.”

Regan is a self-described “proud son of North Carolina” and roots his personal narrative both in the stories of Black environmental-justice pioneers and in more conservative language. He talks about the Warren County protests and growing up with asthma, but also about enjoying hunting with his grandfather. He decries environmental racism in one breath and touts economic prosperity in another.

He made good use of that broad outlook when he took over North Carolina’s department of environmental quality in 2017. Almost immediately, he began engaging on justice issues. He toured communities of color challenged by hazards and touted the Civil Rights Act as a tool for environmental protection. Still, he tried to avoid the conflict-laden language that often characterizes interactions between activists and industry. Recalling his first year in office at the time, he described this work as an effort to protect the state’s “growth and competitiveness.”

Nothing else epitomized his style

during that time more than his approach to pushing change at Duke Energy, the massive utility that provides electricity across the state. The company had left coal ash at multiple coal-fired power plants. Environmental groups were up in arms, and with good reason. Coal ash contains toxic chemicals like mercury that can contaminate water supply and harm local communities. But the company complained that a cleanup done as regulators wanted would cost far more than the company’s preferred solution. In 2019, Regan won big as state courts upheld his directive to Duke. He could have celebrated and left it there. But in the midst of litigation that could have resulted in even greater costs for the company as well as potential appeals, Regan brokered a deal. Duke would accept the remediation cost, expected to total up to \$9 billion; environmental

groups would drop their push for further litigation. Duke took the deal, and everyone left happy.

It was big news, and it came at a fortuitous moment for Regan. Less than a year later, Joe Biden was elected President and found himself stuck with the difficult challenge of delivering on his climate promises. He needed the support of environmental-justice activists and the communities they represent, but he also needed the support of the private sector to pass and implement legislation. Regan fit the bill. “Democratic governor, Republican-controlled legislature—I had to figure out how to get things done, and work across the aisle,” he told me. “That’s exactly what I’m trying to do as administrator.” His appointment garnered support from activists and business leaders. Duke Energy tweeted its support.

FROM THE MOMENT he took office, Regan has sought to place environmental justice front and center. As soon as COVID-19 restrictions were lifted in the fall of 2021, he launched what he called a “journey to justice” tour,



hopscooting from one hot spot to another. He got a glimpse of the broken water infrastructure in Jackson, Miss. He saw how the Houston Ship Channel polluted the air in the city's predominantly Black and Latino Fifth Ward. And in New Orleans he visited a low-income housing development built on the site of a former landfill.

Yet the visits represent just a small glimpse of America's challenge. Some 2 million people lack access to running water and sanitation, a disproportionate number of them in communities of color. Black children are twice as likely to be hospitalized for asthma, an ailment caused in part by air pollution, as their white counterparts. And people of color are far more likely to live in close proximity to waste-disposal sites.

The blatant injustice can enrage even the most dispassionate outsider. Lowndes County, Alabama, for example, is a community in one of the wealthiest countries in the world, yet the front yards are awash with raw sewage, a scene more common in the poorest parts of the globe. Researchers have noted an uptick in health ailments

Regan pushes for rules to spur EV adoption at a news conference in Washington, D.C., on April 12, 2023

among residents, and walking around I spot children playing near raw puddles of waste. But despite how horrible the situation is, Regan maintains the demeanor of a diplomat. "Thank you to everyone that I'm having the privilege to share the stage with," he said, concluding the contentious town hall in Lowndes with a demand for action without pointing a finger. "The people on this stage are finally saying we want to be held accountable."

I asked him about his approach a few hours later, sitting at a coffee shop in Montgomery just steps from where Rosa Parks caught the bus every day. Regan does not mince words about the challenges. "I am very in tune with some of the systemic, structural racist structures that exist," he says. But he also sees the value that quiet authority can bring in some situations. "When someone's watching, you have a tendency to

perform a little bit better," he said. "And we have put a lot of our stakeholders on notice that we are watching and we are paying attention."

Regan's balancing act may be most difficult to maintain in his efforts to regulate electric utilities. American power companies are responsible for about a quarter of the country's climate-change-causing emissions. And they pollute nearby communities, creating a slew of environmental-justice challenges. Pollution from coal-fired power plants contributed to some 460,000 premature deaths from 1999 to 2020, according to a study published in the journal *Science* last year.

From his early days in office, Regan promised a new approach to power-sector regulation that would please climate advocates, address environmental-justice concerns, and, at the very least, minimize industry protests. In past administrations, Regan told me, companies have complained that EPA regulations amounted to "death by 1,000 paper cuts." Instead, Regan designed "a suite of regulations," he told me. "The power

sector then can take a look at the economics to comply with those rules one at a time, or they can say, ‘Hey, to hell with the past, let’s invest more quickly in the future.’” In other words, smarter communication with companies can ease industry’s pain without sacrificing environmental-justice goals.

The centerpiece of this work was Regan’s long-awaited power-plant emissions regulatory move. Under the new rules, first announced last May and still pending, the most-polluting power plants would be required to incorporate carbon-capture or hydrogen technology to reduce emissions. Neither industry nor activists were entirely happy with the result. On the one hand, upgrading facilities with carbon-capture technology is expensive and many utilities are likely to close them rather than make the investment. Environmental-justice activists see these closures as a win because it means fewer polluting facilities in backyards. But nonetheless, adding carbon capture and hydrogen does little to address the concerns for communities where the facilities remain: neither reduces other pollutants that cause health ailments.

Regan has earned something closer to an unequivocal win using some of the \$369 billion in the Inflation Reduction Act (IRA) to fix long-standing problems. He is distributing \$3 billion in funds from that law explicitly for environmental justice with the money flowing straight to community organizations. To help these access and use that money, he set aside \$200 million of it to train the groups. Beverly Wright, who heads the Deep South Center for Environmental Justice, describes the approach as “going from theory to practice.” For years, activists have demanded that money flow directly to their communities rather than through knotty middlemen like state governments. Regan found a way to make it work. “These last two years have been amazing for the EJ community,” she says. And then there’s the rest of the approximately \$100 billion that the EPA has received from the IRA and the so-called bipartisan infrastructure law. Regan has implemented programs to require that

2 million

Number of Americans who lack access to clean water, disproportionately in communities of color

2X

The likelihood that a Black child in the U.S. will be hospitalized for asthma, an ailment linked to air pollution, compared with that of a white child

2.8X

The likelihood, compared with the average in mostly white areas of the state, that a community of color in North Carolina will be in close proximity to waste-disposal sites

460,000

Number of early deaths that coal-fired plants contributed to in the U.S. from 1999 to 2020

Sources: U.S. Water Alliance; EPA; Environmental Health Perspectives; Science

the projects that receive funding also advance environmental justice, even as they are advancing other priorities too.

In theory, helping communities clear raw sewage, eradicate lead pipes, and clean up toxic air would be uncontroversial, but in giving away funds under the environmental-justice frame Regan’s progress-through-peacemaking approach may have met its match. Republicans have targeted the IRA’s environmental-justice provisions, calling them wasteful. It’s a useful reminder: in this political climate, even the best efforts at bridge building can go unrewarded.

IN THE FALL OF 2022, Regan called environmental-justice leaders from across the country to Warren County, North Carolina. Activists reunited with hugs, and speakers blasted Kool & the Gang’s “Celebration.” The event was not only a commemoration of the 40th anniversary of the culmination of the protests that had inspired Regan as a child, but also an opportunity for him to announce a new Office of Environmental Justice and External Civil Rights, complete with an assistant administrator appointed by the President and, eventually, billions in committed funds—a milestone for the movement.

The office is also a key piece of Regan’s strategy. He hopes the new addition, and other systemic tweaks, can ensure environmental justice is embedded in the agency’s work, no matter who wins in November or what the Supreme Court says. “You’ve got to have environmental justice at the beginning, the middle, and the end of every process at EPA,” he told me. “That’s why having a Senate-confirmed person in the room matters.”

Regan is by no means responsible for elevating environmental justice to the status that it occupies today. His appointment coincided with a national reckoning around race and growing concern, at least in some quarters, about climate change. But if environmental justice is to survive as an issue of federal concern, he will have played a key role making it happen.

TIME receives support for climate coverage from the Outrider Foundation



Menopause Gets Its Moment

WITH NEW ATTENTION FROM BUSINESS AND MEDICINE,
A LIFE STAGE COMES OUT OF THE WINGS

By Jamie Ducharme

KATHRYN CLANCY WROTE AN ENTIRE book about menstrual cycles. But even she was surprised by some of the premenopausal symptoms she has begun to experience at age 44.

“A lot of things that have to do with my uterus, ovaries, and breasts, I have been massively underprepared for as a Ph.D.-level expert in this field,” says Clancy, a professor at the University of Illinois Urbana-Champaign. “That should tell you how even more underprepared most people are.”

Most people who menstruate experience symptoms including hot flashes, brain fog, and changes to mood, sleep, and sexual function in the years before they hit menopause, which is defined as the point in time a year after their last period. But that premenopausal transition, which typically begins between the ages of 45 and 55 and can last years, is so rarely discussed in society—and at the doctor’s office—that people often know nearly nothing about it in advance. One 2023 study of postmenopausal women found that almost none of them learned about menopause in school, and about half “did not feel informed at all” about the life stage.

But that could be changing, as both the medical and business worlds get serious about the needs of the more than 1 million people in the U.S. who reach menopause every year—and the potential market they represent. The U.S. Food and Drug Administration (FDA) in 2023 approved Astellas Pharma’s drug to treat menopausal hot flashes,

and pharmaceutical giant Bayer is currently developing a similar medication. Some companies are beginning to offer menopause benefits to their employees. Lawmakers have pushed for more research on menopause. And a flurry of menopause-focused startups have launched in recent years to supplement traditional care, since studies suggest a significant portion of people going through menopause are not treated. The company Alloy, for example, connects patients to menopause specialists via telehealth and sells products that promise relief from symptoms like hot flashes.

“I have really noticed, thankfully, a new attention and interest in taking care of people during this transition,” says Dr. Ghazaleh Moayed, a Texas-based ob-gyn who provides menopause care. She attributes that shift to more women holding positions of power in business, tech, and medicine, and to social media’s ability to spread information among patients.

But fixing the problem will take more than well-branded startups, or even new FDA-approved therapies, which not all patients are able to get. Experts believe a meaningful shift will take place only once the core issues change: how research is conducted and disseminated, how doctors are trained, and how seriously practitioners take women’s pain.

FOR DR. SHARON MALONE, chief medical adviser to Alloy, the medical system’s problems with menopause go back to

2002. That's when a major study was published linking hormone therapy—which can ease menopause symptoms by boosting levels that have dipped—to increased risks of breast cancer and other serious conditions. A year later, a separate paper using the same study group found that hormone therapy is linked to an increased risk of dementia. Afterward, hormone-therapy use plummeted in the U.S.

But Malone says there were crucial, little-discussed caveats to the data. One was that the average participant in the original study was 63, older than a typical patient receiving hormone therapy for menopause. Later analyses and statements from researchers clarified that the risk of breast cancer may have been overstated, particularly for younger people. The study also looked at hormone therapy using both estrogen and progesterin; estrogen-only therapy, however, is not linked to an increased risk of breast cancer, according to the American Cancer Society.

Dr. Kejal Kantarci, a professor of radiology at the Mayo Clinic, says her research has also refuted the idea that hormone therapy damages cognitive health, at least among younger people. In a 2018 study, Kantarci and her colleagues compared a small group of women who used menopausal hormone therapy in their 40s and 50s with those who took a placebo. Three years post-treatment, they found no significant differences in cognitive function between the groups. Other studies have reached different conclusions—but Kantarci says she feels confident that hormone therapy does not pose a major cognitive risk to people at standard menopausal age.

In a 2022 position statement, the North American Menopause Society also said hormone therapy has more benefits than risks for women younger than 60 or within 10 years of menopause, unless they have specific complicating health factors. But many doctors and health groups remain wary. The U.S. Centers for Disease Control and Prevention, for example, still cautions that hormone therapy may be associated with higher risks of breast cancer when taken for at least five years.

The result of all this back-and-forth,

Malone says, is that “we are now looking at a generation of doctors that really have not had formal or informal training in how to treat menopause. Women don't know what to expect, and doctors don't really know what to do.”

Moayeddi says the problems in physician training go deeper than hormone therapy. “I don't remember a single lecture from medical school about menopause,” she says, and that neglect continued. After graduation, Moayeddi worked in a clinic staffed by doctors finishing their medical training. Most of the patients Moayeddi saw were lower-income pregnant people who qualified for Medicaid or older people on Medicare—so a doctor training to become an ob-gyn hardly ever saw someone going through menopause.

Physicians who don't specialize in obstetrics and gynecology likely know even less, Moayeddi says, because women's health is often (wrongly) considered “separate from the rest of medicine.” She often sees patients who have been misdiagnosed with other conditions, including ADHD, because their primary-care doctor didn't realize that symptoms like brain fog can be linked to menopause.

Doctors are also underinformed because most reproductive-science research focuses on people at the peak of their childbearing years, which typically excludes adolescents just beginning to menstruate and adults entering menopause, says Clancy, the Illinois professor. When studies do include these populations, they don't always capture the full patient experience. Researchers often ask, for example, how “tolerable” symptoms are, rather than asking people more broadly about their quality of life and overall well-being. “Think about what it means that we've decided how much [pain and discomfort] we're willing to tolerate” is an acceptable benchmark, Clancy says.

She feels there's a clear need for more

studies (and more money to fund them) on people who fall outside those main reproductive years. The U.S. National Institutes of Health (NIH) doesn't explicitly track how much of its research funding goes toward menopause—a problem that a bill introduced in 2023 seeks to address, by directing the agency to evaluate its past and present support for menopause research. The NIH has historically underfunded conditions that primarily affect women, according to a recent analysis published by *Nature*.

IN THE MEANTIME, startups are picking up much of the slack: connecting patients directly to licensed menopause practitioners via telehealth, selling treatments and wellness products that promise to ease their symptoms, or both. The approach makes some experts wary. Clancy says she's often skeptical when private businesses promise “simple answers” to complex medical problems. Nor are wellness startups usually designed to meaningfully address racism and disparities in health care, Moayeddi adds, and so might perpetuate them.

But linking patients to knowledgeable medical professionals is key to improving care for long-neglected conditions like menopause, says Moayeddi, who works with a startup that offers telehealth services. “Patients every single day will tell me, ‘My doctor told me to just deal with it. My doctor told me it's natural. My doctor told me treatment is unsafe,’” she says. Without new avenues like telehealth, those patients might not get care at all.

Malone has seen both sides: she practiced as an ob-gyn for decades before joining Alloy. The traditional medical system has a long way to go, she says, with too many patients remaining untreated and ignored and too many doctors in the dark about menopause. But Malone says she's encouraged by the new attention to menopause—and that people are seeing the need for a course correction.

“Women of a certain generation just assumed that suffering was just part of being a woman, our unfortunate lot in life,” she says. Now, she says, patients “are saying, ‘This is nonsense. You're going to have to do better by us.’” □

**‘Women
don't know what
to expect.’**

—DR. SHARON MALONE, OB-GYN

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SOCIETY

WHAT MR BEAST

Jimmy Donaldson, the world's most successful YouTuber,



is playing the long game By Belinda Luscombe

▲
"IT'S JUST UNCHARTED
TERRITORY," SAYS
DONALDSON OF HIS
VIDEOS' SUCCESS

WANTS

PHOTOGRAPH
BY CHRIS BUCK
FOR TIME



“The idea is that he will be strapped to this,” says Kyle Bennett, pointing to a contraption that looks alarmingly like the bed in a lethal-injection chamber.

“And we have a glass case that’s gonna go over the top and we have 1,000 spiders that are about the size of my palm that are going to cover him, and I’m personally testing this tomorrow...” He stops and looks around, but the producer has lost his audience. Jimmy Donaldson, the 25-year-old video wizard better known around the globe as MrBeast, has quietly left the room. “Classic,” says Bennett.

Donaldson is supposed to be showing a reporter and a film crew of one around the set for the next in his series of wildly popular videos of improbable stunts. In this one, a man is being paid \$500,000 to face his 10 worst fears, hence the spiders. Elsewhere on the set is a chest of snakes, and somewhere outside there’s a car full of money that’s going to be pushed into a lake. But Donaldson’s not happy. He has been away on another shoot for 11 days, and he’s not thrilled with the progress of this one. “I’m not really good at these things,” says the world’s most successful YouTuber.

If “these things” are crowd-pleasing diversions, then Donaldson is really, really good at them. A recent video in which he and his posse of besties go on a vacation and spend \$1 to \$250,000 per day garnered 52 million views in 24 hours. That’s 20 times the number of people who watched the *Succession* finale and more than twice as many people as saw

▶
DONALDSON AND HIS MOM IN 2016, THE YEAR BEFORE HE GAVE HER \$100,000 TO PAY HER MORTGAGE



Barbie or *Oppenheimer* during opening weekend. His most popular video, a version of the Korean TV show *Squid Game*, has been seen half a billion times. While few people over the age of 30 have heard of him—unless they have kids—Donaldson is probably the most watched person on earth.

MrBeast videos could best be described as stuff an imaginative 9-year-old boy would try if he had, like, a gazillion dollars. Donaldson crushes expensive cars, gives strangers life-changing amounts of money, holds contests to see who can do a dumb thing the longest. In 2023 alone these videos gained him 99 million new YouTube subscribers, almost double the growth of any other channel. And, in the way of most influencers, he spans all of social media, with about 100 million followers on TikTok, 50 million on Instagram—over 425 million fans in total. He estimates he appears on a screen somewhere in the world about 30 billion times a year. “At this point we kind of know what does well,” says Donaldson. “I can make almost anything go viral.”

In the flesh, Donaldson is a 6-ft. 4-in. mixture of eagerness to please and odd detachment. As we sit in his mother’s office on the second floor of his 63,000-sq.-ft. studio on the outskirts of Greenville, N.C., he keeps offering “context for listeners” to the recording device, no matter that this



← DONALDSON, WITH HIS POSSE, RENTED OUT A JAPANESE THEME PARK TO MEET YOUTUBER FELIX KJELLBERG, RIGHT, WHO GOES BY PEWDIEPIE

and will have, according to him, \$500 million in annual revenue this year. Stars the wattage of Tom Brady and Justin Timberlake now appear in his videos, and the Charlotte Hornets wear a Feastables patch on their shirts. And while he models his career on Steve Jobs, he has a little Melinda French Gates in him too. On a second channel, Beast Philanthropy, he performs outlandish tricks of the charitable sort: rescuing 100 unwanted dogs, giving away 20,000 shoes, helping distribute \$30 million worth of food that was going to waste. In December 2020, he started a food-delivery service, MrBeast Burger. It grew to a reported 1,700 virtual locations and \$100 million in total revenue by August 2022, before becoming ensnared in a legal battle. He also has a toy deal and is reportedly on the verge of signing a nine-figure deal with Amazon.

Most social media influencers reach a certain level and burn out, or run out of money or ideas. Donaldson, who has been on YouTube for 12 years, has grown his channel almost exclusively on wholesome fare and has so far proved that his stamina and discipline match his ambition. Ask him how he thinks he got so successful and he has a simple answer: he just worked harder than anyone else. “It’s a never-ending treadmill for the content obviously,” says Donaldson. “It’s brutal. You’re always on, and it’s a lot of pressure. And this whole system is based around 200 million people just magically showing up and watching my next video.”

DONALDSON IS NOT your usual entrepreneur. For one, he’s happy to talk about how much revenue he brings in: about \$600 million to \$700 million a year. For two, he claims to not be rich. “I mean, not right now,” he clarifies. “I’m not naive; maybe one day. But right now, whatever we make, we reinvest.” He spends lavishly on every video, sometimes shooting as much as 12,000 hours of footage for a 15-minute clip. “Each video does a couple million in ad revenue, a couple million in brand deals,” says Donaldson. “I’ve reinvested everything to the point of—you could claim—stupidity, just believing that we would succeed. And it’s worked out.”

Most of his videos are made from the ground up. He rarely reuses sets and is always in search of new things to demolish. He and his creative team change tack right up until the last minute, and he admits they make expensive mistakes. “We had an hour to come up with, like, 100 ideas,” says Steffie Solomon, a stand-up comedian who worked remotely on MrBeast’s TikTok channel for a year in 2022. It took her a while to get used to how big the budgets were. “Nothing I pitched was too crazy or unfathomable,” she says.

While a steady stream of crazy adventures is Donaldson’s main gimmick, he also keeps viewers engaged by allowing them to feel part of his success. At his say-so, 20 million trees were planted and more than 600,000 people donated enough money, mostly in \$5 increments, to help remove 30 million lb. of trash from the oceans. “You always feel like you’re in on his project, that you’re rooting for him,” says Quynh Mai, the CEO of Qulture, a digital-advertising agency. In contrast to the feats he performs, the challenges Donaldson makes to others are not extreme, especially compared with the rewards. “Anyone can hold their hand on a Lamborghini for days,”



← CROWDS SWARM THE OPENING OF THE MRBEAST BURGER RESTAURANT IN NEW JERSEY IN SEPTEMBER 2022

▲ DONALDSON CREDITS GIRLFRIEND THEA BOOYSEN WITH HELPING HIM WORK HARDER

is a print interview. Asked how he dealt with being buried alive for seven days—in which time he openly wept more than once—he brushes off the difficulty. “Maybe for people who are extroverts it might be harder,” he says, “but there’s at least a million different things I need to think about and process mentally.” These things included how to make his videos better, how a fly that was trapped with him behaved, and whether he was using an “optimal” moisturizer.

Donaldson’s swift rise has been spurred by massive changes in the media landscape where individuals have replaced institutions as the gatekeepers of entertainment and information. He’s proved an adroit Pied Piper, figuring out how to work the YouTube algorithm to hook and keep a crowd. But he’s also disrupting the new ecosystem, showing what’s possible, even far from Hollywood, with a gigantic following. The ethos of doing things differently, of growing quickly and exponentially, has sparked concern among some about the company’s safety and labor practices. For now, though, the question seems less whether Donaldson will get where he wants to go than where he’s going—what the world he is helping shape will look like.

His sway has grown such that in 2022 he launched a line of snacks, Feastables, that by 2023 was in multiple countries

says Mai, of one of the tests. “His whole perspective is, how do I make the average person extraordinary?”

Grayson Nolan, 11, watches MrBeast videos every day at his home in West Memphis, Ark. While his favorite video is the one where the Beast crew spends seven days at sea—“because they had to survive and build shelters, on a raft, and he had all of his friends and they met a little seagull”—something else draws him to the channel. “I like him because he’s super nice and he helps people and gives them money,” says Nolan, who also has a YouTube channel.

The just-folks vibe is key to MrBeast’s formula. If Donaldson is Robin Hood, taking money from rich brands and giving it to stray dogs, Karl Jacobs, Chandler Hallow, Tareq Salameh, Nolan Hansen, and Kris Tyson are his band of merry thieves. Except for Hansen, they’re all longtime friends; to Donaldson, this is more important than their media skills. “Five years ago, we weren’t getting sh-t for views,” he adds. “It’s not like they’re just here to suck the clout out of me.”

“**THEY REALLY BELIEVE** that they are different, that they are separate from the rest of the entertainment industry,” says Jason Zavaleta, a filmmaker who worked at MrBeast in 2022. “Jimmy gets uncomfortable and gets angry when people use language like PA [production assistant], because it’s too industry.” Instead they’re called FOFs (friends of friends).

Being different, however, cuts both ways. TIME spoke to a dozen former MrBeast employees, and while all admire Donaldson and his vision, they found the company’s attention to detail slipped when it came to adhering to safety norms or maintaining a healthy work culture. Many had signed NDAs and would not go on the record for fear of angering a powerful company. But several producers mentioned pushback around hiring experts for stunts. “They’d always ask us, well, why?” says Troy Guthrie, who believes he was let go from MrBeast because he kept agitating for safety. Guthrie worked on a global-athletics-contest video where a few contestants were injured, and he was distressed at the construction of the sets. After the shoot, as the friends of friends were cleaning up, he says, one of the huge doors contestants had to run between blew over. A MrBeast spokesperson says the company has never let anyone go for asking about safety, on-set medics “promptly addressed any injuries that arose” during filming, and a safety cord kept the door secured when it came out of its track.

Scott Brown, a creative producer who worked for MrBeast from March 2023 to August 2023, says that in order to move fast at MrBeast, “they view safety as, like, being overly cautious or a weakness.” He helped produce the “Train vs. Giant Pit” video and believed the safety procedures were insufficient. When he suggested using OSHA protocols for the pit’s considerable drop, “I was told, ‘We don’t need to worry about that,’” he says. Other producers say they were asked to work with explosives, fast cars, and heavy machinery with very little

training and on very little notice. “Let’s just say as an 18-year-old,” says Jay Neo, who moved to Greenville from the U.K. to help on the creative team, “it felt weird to be writing on the board ‘Days Without an Accident’ that needed to be updated every day.” A spokesperson for MrBeast did not respond to an inquiry about the board but said “safety is incredibly important and taken very seriously,” and medics and “experienced professionals tailored to the needs of production” are on every set. “The company is OSHA-compliant,” he added.

Another challenge is profitability. Even though Donaldson has given away millions of dollars to family members, strangers, charities, and other influencers, he says that, like Feastables, his production company was not profitable in 2023, nor is it expected to be in 2024. Marc Hustvedt, who moved from L.A. to run MrBeast’s YouTube business, says that given MrBeast’s gargantuan audiences, brands pay \$2.5 million to \$3 million to have Donaldson give them a shout-out. To run an ad before one of his videos is about as expensive. A lot of companies are either unable or unwilling to spend about a third of what they’d spend on a Super Bowl ad on one video from a Gen Z kid with a taste for extreme stunts. “What we’ve been trying to do in the market

this year is show brands and, frankly, their gatekeepers in the media agencies that this is a trusted product,” says Hustvedt, comparing it to a global sports event. “Every other Saturday, you’re gonna get one of the largest audiences in the world.”

But if all goes to plan, Donaldson won’t need advertisers anyway. “I know a video is gonna get 200 million views,” he says. “And I sell that video to a different company, which is just sad. In a perfect world, I would own a couple of different companies—chocolate, and maybe a global games company—and then that’s what I would promote in the videos.”

Feastables, in its second year, brought in about 70% of MrBeast’s revenue. Plans are under way for digital products, including games and apps, and he has several tools for aspiring YouTubers including ViewStats for audience analysis and CreatorGlobal for an audio translation. (A good part of the channel’s growth can be attributed to the languages it’s available in, including Russian, Hindi, Spanish, Portuguese, French, Japanese, and Arabic.)

It all requires an enormous amount of time and effort, especially for someone with a finely tuned need for quality control. Donaldson has 15-hour filming days 20 to 25 times a month and devotes the other days to Feastables. But he’s always been a guy willing to knuckle down if he thinks the payoff will be there. “Hopefully,” he says, “a year or two from now, we’re only promoting things we own.”

ACCORDING TO DONALDSON’S MOTHER Susan Parish, it all started with Crohn’s disease. Donaldson was a promising high school baseball player when he was diagnosed with the condition, which causes an inflammation of the digestive tract. He muscled through games and training, she says.

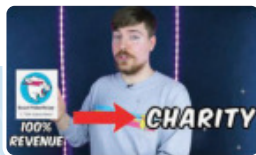
‘I CAN MAKE ALMOST ANYTHING GO VIRAL!’

—JIMMY DONALDSON



JUNE 2017

Gave away first huge sum—
to a homeless man



SEPTEMBER 2020

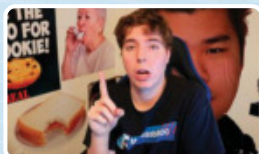
Launched the
charity channel
Beast Philanthropy



NOVEMBER 2021

Re-created *Squid Game*
on video and went megaviral

BEAST'S BENCHMARK MOMENTS



JANUARY 2017

Counted from 1 to 100,000
on camera, getting
6.5 million views in a week



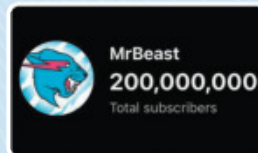
FEBRUARY 2012

Started his first
channel, MrBeast6000



JANUARY 2022

Launched his first
packaged good,
a chocolate bar



OCTOBER 2023

Reached 200 million
subscribers

But as it became clearer that he would not be able to pursue sports, he turned his attention to videos. “It was very hard,” says Parish. “But we can look back now and we can realize it opened the door for the YouTube.” He started his first channel at 13, in 2012, and his current channel a year later.

Parisher, who retired from the military in 2007 as a lieutenant colonel after 21 years of service, landed in Greenville to head up the ROTC at Eastern Carolina University when Donaldson, the middle of her three children, was about 5. Donaldson’s father Charles was also in the military, but the marriage broke up, according to a book Parish wrote, under the weight of abuse. Father and son are not close. “I haven’t talked to him in a while” is all Donaldson will say on the subject. (Multiple requests to Charles Donaldson for comment were not answered.)

Most of Donaldson’s education was at a local Christian school. “I just remember how conscientious he was,” says Janice Batie, his middle-school English teacher. “It really bothered him that he got a demerit for something. He talked to me for a long time about it.” Donaldson’s infraction was slight, but he was inconsolable, says Batie. “He didn’t like to get in trouble.” His high school English teacher and baseball coach Chris Coggins recalls him giving a talk during speech class about how to work the algorithms. “If you switched out this word for this word, the likelihood of getting a higher view count was higher,” says Coggins. “I don’t know how many high school kids in 2015 would have figured that out.”

Donaldson enrolled in Pitt Community College but didn’t go to many classes. He felt he could learn more on YouTube.

The first clue that he had a viable formula came in January 2017 when Donaldson counted to 100,000 and it went viral. His mother remembers it took weeks, not to count, but for him to figure out how to edit the video so it would upload. By the time she enforced her rule that if he wasn’t studying he had to move out, he was making enough money to do so.

“I used to sleep on a mattress in his extra bedroom when he first moved into his house,” says Reed Duchscher, Donaldson’s manager. A former sports agent, Duchscher already represented some influencers but was impressed by the young YouTuber’s attention to analytics. “He was sending me screenshots of his average view duration and his click-through rate,” he says. Donaldson asked him to come and stay so they could get to know each other. Another houseguest was his cousin, James Warren, now his CEO. His mom has worked for him since 2017. Her role seems to be similar to her job as warden at a military prison in Mannheim, Germany: keeping an eye on things. “I don’t have access to any of my bank accounts,” says Donaldson. “I have a CFO and everything, but [Parisher’s] the one who has access to the master bank account.”

Donaldson’s understanding of the algorithm that recommends videos is legendary among YouTubers. He figured out early that the thumbnail (the little picture you click on to launch the video) had to be enticing. His are usually of him with his mouth open, either smiling or grimacing. He also makes sure viewers are told what to expect in the first 10 seconds, so they hang around. Lately, however, he has leaned more on his gut than analytics. “Now it’s just like,

how can we make people feel something?” says Donaldson. “When you see the thumbnail, do you say, ‘How did they do that? What the f-ck? Is that real?’ When you have one of those three reactions, you have to click.”

Donaldson’s other obsession mirrors that of YouTube’s executives: audience retention. How can you keep viewers watching a 20-minute video when there’s so much a mere thumb swipe away? Neo, who directed a short MrBeast video about baguettes (1.1 billion views), says he loved working at MrBeast but the focus on retention depressed him and led him to quit the industry. “These algorithms are poisonous to humanity. They prioritize addictive, isolated experiences over ethical social design, all just for ads,” he says. “It’s not MrBeast I have a problem with. It’s platforms which encourage someone like me to study a retention graph so I can make the next video more addicting. At Beast I did that on steroids.”

Recently, people around Donaldson have sought to protect him from caving under his workload. He now has a personal chef and a trainer; COVID-19 testing is still in place. But it’s extremely difficult to protect people from fame. “Three years ago, I would have been like, ‘What’s a couple of photos? Famous people are divas!’” says Donaldson. “Now I get it.” He estimates he has about 15 minutes after the first fan selfie until he has to leave a place or cause a mob scene. At airports, he hides in a bathroom stall or asks a restaurant if he can sit in its kitchen until his buddies get to the front of the line and he can join them. “My solution for all this is I just don’t go in public much,” he says. “Problem solved.”

DESPITE HIS YOUTH AND PROMINENCE, Donaldson has largely managed to stay out of the cultural crosshairs. In 2018, the *Atlantic* dug up videos of him using a homophobic slur, which were largely shrugged off as adolescent ignorance. “I did not even know what [it] meant,” he says, spelling out the word. Some participants in his videos have complained that it was a grueling experience. And as his staff has swelled—he now has 300 employees on his production team plus 200 or so more at Feastables—there have been growing pains.

Newly hired producers are given housing, good salaries, and three months in which to prove themselves. Of the dozen former employees *TIME* interviewed, most had no problem with Donaldson but described a company culture that was toxic, with a lot of bullying. “People are experiencing enormous amounts of stress. There’s a lot of fear that you can be fired at any moment,” says Brown, who left to work for a company in L.A. “And because clear feedback isn’t given, it’s hard to know whether that’s going to happen.” Guthrie says he was grateful for the opportunity, but MrBeast was “one of the weirdest experiences I’ve ever been through.” A spokesperson for MrBeast says “the company has high standards for performance and not everyone is best suited for this work.”

IT’S HARD TO GET HIM OFF TWITTER. I LOST THAT BATTLE.

—REED DUCHSCHER, DONALDSON’S MANAGER



Parisher’s title is chief compliance officer, but many employees say she’s effectively in charge of human resources (a spokesperson says she’s not). Zavaleta says he tried to let her know people were unhappy. “I’m going to tell you right now that if the company keeps treating people the way it’s been treating people, Jimmy’s going to have no one left to work for him,” he says he told her. He recalls her being shocked and asking for time, but there was no follow-up meeting. A spokesperson did not respond to an inquiry about this interaction.

“You get all these people in a town where there’s not much else going on but the job,” Brown says. “If you can show that you’re a real believer in the Beast way of doing things, you’re rewarded.” The Beast way is to go hard, say people who have worked there, and not push back. “You can get there faster if you do not give as much value to compassion and professionalism,” adds Brown. Hustvedt, president of MrBeast, declined to comment on personnel issues except to credit the recruiting team with creating a culture where “you have to want to work hard to be here.”

There have been some business snafus too. In July 2023, Donaldson sued his partner in MrBeast Burger,



◀
DONALDSON, AT A
GAMING EVENT IN
JULY 2022, IS AN AVID
GAMER AND ANIME FAN

struggles of the Hopi tribe in Arizona, and the plight of orphans in South Africa. He sees this as using his ability to get attention in a useful way; others see this as profiting off misfortune. After he paid for 1,000 cataract surgeries, he was criticized for wanting to look like a hero instead of tackling the underlying systemic inequalities. When he dug 100 wells in Africa, he triggered a barrage of white-savior accusations.

Donaldson acknowledges that these sting, but persists. “I like to do those kinds of videos, because it gives younger kids someone to look up to and be like, ‘Oh, that’s cool,’” he says. “And instead of drinking alcohol, or doing drugs, it’s a role model that they can be like, ‘He does good and helps people.’” Donaldson defends his philanthropic work against charges of poverty profiteering by pointing out that it is funded by his main channel, which sends the charity channel \$100,000 a month. All the money a sponsor pays or anyone donates, he says, goes directly to the organization he’s working with. Beast Philanthropy also gives away 100,000 lb. of food every month. “I say this to a lot of our people,” he says. “Ten years in the future, will we look back and our careers are over because we helped blind people see?”

In April 2023, Tyson, Donaldson’s longest-term collaborator, came out as transgender and said she was undergoing hormone therapy, leading to some sponsors leaving. “I knew there was gonna be backlash,” says Tyson, who married and had a child before she transitioned, but there was none from her workplace. “This building we’re in was one of the first places that I was able to feel comfortable enough to present as my authentic self.”

After our interview Donaldson and his gang are getting together to eat, watch YouTube, and maybe play board games. Donaldson loves board games, the longer and more strategic the better. Parisher recalls trying to throw hours-long games of Monopoly by making bad deals, but her son would catch her every time. His friends have similar complaints about his affection for the game Dune. “Jimmy would hate to hear this, but Dune is Settlers of Catan if it took 12 hours,” says Jacobs. “It’s just too much.” But as Donaldson has proved, whether it’s effort, money, or explosions, too much is his favorite amount.

If Donaldson can somehow pull off this very long strategy game he’s playing, if he can create a self-perpetuating media company that makes enough awe-inspiring videos to sell enough of the snacks and apps he also makes to pay for more awe-inspiring videos, what then? In many ways, it’s easiest to understand Donaldson as the elite athlete he once wanted to be. “I just want to be the best and I want to make the best content possible,” he says. Eventually, athletes hit their physical limitations. It’s not yet clear that Donaldson will ever have to stop. —*With reporting by* JULIA ZORTHIAN

Virtual Dining Concepts (VDC), and claimed the burgers were “disgusting” and “inedible.” VDC countersued for \$100 million, claiming Donaldson was trying to “bully” the corporation into making a more favorable deal. Both parties declined to talk about the suits.

Donaldson says he finds constructive criticism in, of all places, the comments. “It’s hard to get him off Twitter,” says Duchscher, using the former name for X. “I lost that battle.” It was on X that he learned he had labeled Taiwan as China and Crimea as Russia on a map that appeared in a recent video. “Yeah, we should have paid way more attention to the map. Big mistake,” says Duchscher. “But nobody really talks about politics in this company. It’s not really a thing.”

Indeed, Donaldson’s videos assiduously avoid hot-button issues. His mother and some of his posse are open about their Christian faith, but the star, who used to have an “I am not ashamed of the gospel of Christ” banner on his YouTube page, now says he needs to do more research. “I believe there’s a God,” says Donaldson. “I just don’t know which one.” So innocuous are his videos that he was recently able to launch his channel on a social media site in China, which blocks YouTube. (“Subscribe for a dumpling!” says the home page.)

Weirdly, the videos that draw the most trenchant criticism are not the ones in which he feeds a perfectly good Lamborghini into a shredder, or valorizes obscene wealth, but those that show him doing good. He’s raised awareness about food insecurity, amputees in Cambodia, the

TIME 100

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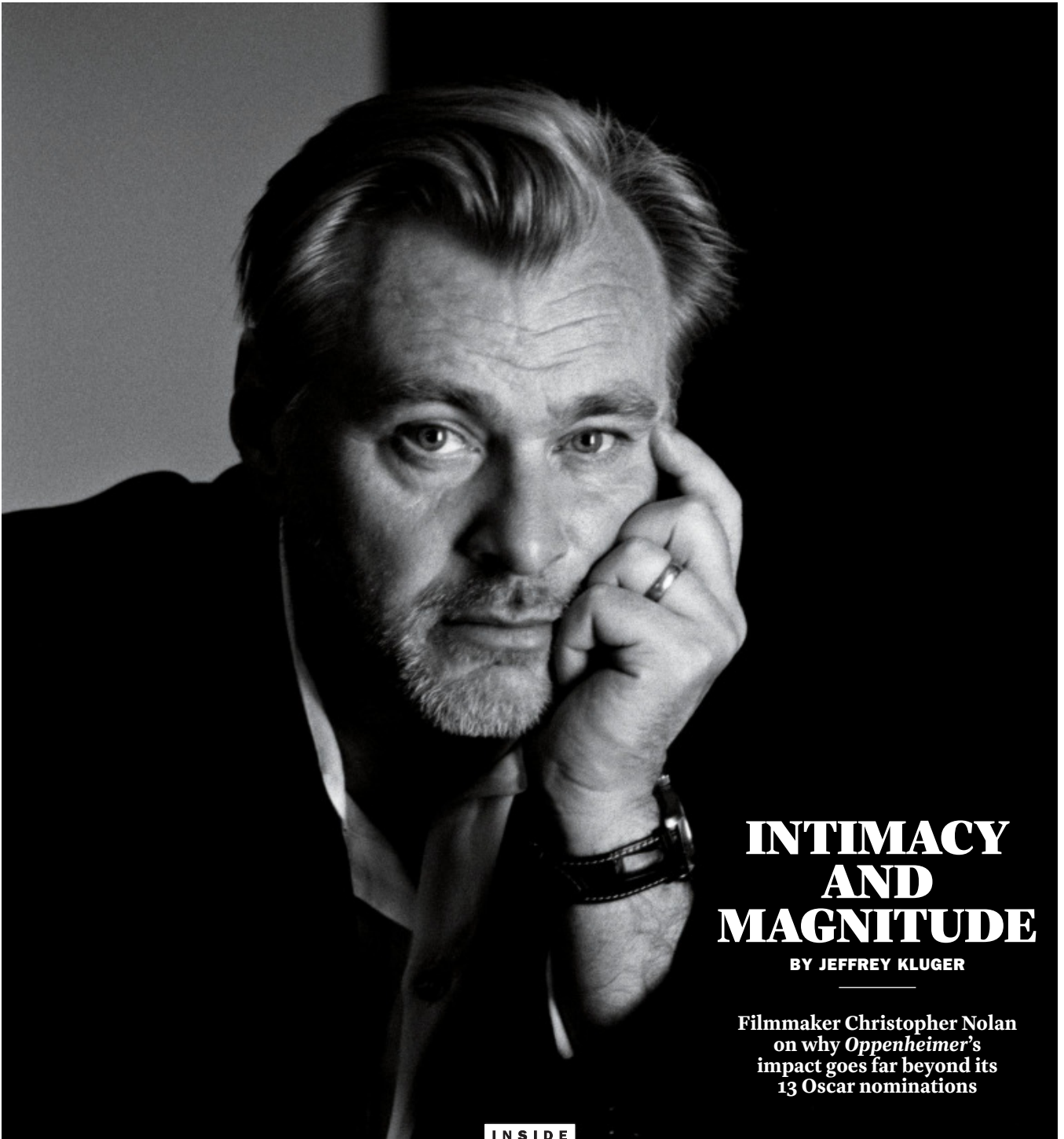
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INTIMACY AND MAGNITUDE

BY JEFFREY KLUGER

Filmmaker Christopher Nolan
on why *Oppenheimer's*
impact goes far beyond its
13 Oscar nominations

INSIDE

HOW SARAH J. MAAS BECAME
A TITAN OF FANTASY

LARRY DAVID'S REIGN
AS KING OF CRINGE

LULU WANG ON THE
EMPATHY IN EXPATS

DIRECTORS CHRISTOPHER NOLAN AND ALFRED Hitchcock do not have a whole lot in common—very different styles, very different eras, very different tales. All the same, during the five months in early 2022 when Nolan was shooting his blockbuster *Oppenheimer*, he found that Hitchcock's work bubbled to mind more than once—specifically the iconic scene in *Psycho* in which Anthony Perkins stabs an unsuspecting Janet Leigh as she showers.

The scene is savage, but after the mayhem is over, all turns orderly. Perkins washes down the shower, swaddles up the body, and places it in the trunk of a car which he tries to sink in a swamp. Halfway down, however, the car stops, its rear end poking above the water.

“[Perkins] looks worried,” Nolan says during a conversation in New York City in early January. “And suddenly you’re worried as well. How did that go from someone being massacred to me being worried that the guy covering up the murder is going to get caught?”

The answer is in what Nolan calls “cinema’s magical point of view,” the camera’s ability to immerse the audience so deeply in the experiences of the people on the screen that we feel what they’re feeling—root for what they’re doing—even if we don’t want to. A lot of that was necessary in *Oppenheimer*, Nolan’s film of the life of J. Robert Oppenheimer, the man who led the Manhattan Project—the government program that developed the atom bombs that were dropped on Hiroshima and Nagasaki at the end of World War II. Oppenheimer’s work, unlike the murder in *Psycho*, claimed 200,000 lives, not just one. And Oppenheimer’s really happened: those cities were incinerated; those 200,000 lives were lost.

So Nolan took a lot of steps to make sure we remained on Oppenheimer’s side. He wrote the stage directions in the screenplay in the first person—not “Oppenheimer enters the room,” but “I enter the room,” to help Cillian Murphy, who is nominated for an Academy Award for his portrayal of Oppenheimer, feel more central to the scene, and help moviegoers feel that too. The cameras huddled up closer to Murphy than they did to other actors as well, says Nolan. And the film opens and closes with matching shots—Murphy’s face with his eyes closed.

The result is not just a movie that has earned nearly \$1 billion worldwide since its release in July, not just one that garnered 13 Academy Award nominations and dominated January’s Golden Globes. The result is a movie that has rekindled a global conversation about the existence of nuclear weapons and their role in both keeping and menacing the peace over the past 80 years; about the intersection of politics and science—with the U.S. government driving and bankrolling the invention of the bombs and other nations following; about the dangers of cooking up new technology—like artificial intelligence—that can slip out of our control.

“The idea of nuclear war used to be limited to just the U.S. and Russia,” says Steven Shapin, professor of the history of science at Harvard University. “Now, even North Korea has the bomb.”

That deadly proliferation of humanity’s worst weapons was much on Nolan’s mind when he made *Oppenheimer*, a cinematic tale that deals with nothing less than our species’ ability to commit nuclear suicide—or, if our better angels prevail, to save ourselves from destruction. “Nuclear weapons are in a class of their own in terms of destructive power for humankind,” Nolan says. “It speaks to the heart of why I wanted to make a film about the Manhattan Project. These [scientists] were the most brilliant people on the planet; they knew exactly what was going to happen.”

THE OPPENHEIMER FILM had its origins in a 2005 book—the Pulitzer-winning *American Prometheus*, by Kai Bird and the late Martin J. Sherwin. The book begins at Oppenheimer’s funeral and then flashes back to his childhood, before churning on through the prewar years and the development of the bomb. The screenplay, written by Nolan, dispenses with much of that prologue and opens in 1926, when Oppenheimer was studying physics at the University of Cambridge; he later made his way to Caltech, where he taught theoretical physics until, in 1942, U.S. Army Colonel Leslie Groves (played by Matt Damon) tapped him to lead the Manhattan Project.

When it came to crafting a new timeline for the screen, Nolan had a lot of latitude with *American Prometheus*. “As you start to unpack it, you realize it’s not purely chronological and the chapters are very neatly kind of interleaved,” he says. “It’s thematic with this sort of underlying chronology.” Nolan read the 720-page book once through, secured the screen rights to it, read it through again and then once more, this time taking copious notes.

“I let that kind of seep into my imagination,” he says. “Almost the way that we do with a fictional story.”

That kind of preparation pays off, as Nolan’s narrative craft keeps the movie moving efficiently through multiple mileposts—from the three-year development of the bomb at Los Alamos National Laboratory in New Mexico; to the U.S. military’s surveillance



▲
Murphy, left,
and Nolan
on the set of
Oppenheimer



of Oppenheimer's political leanings; to a postwar tribunal orchestrated by rival Lewis Strauss (played by Robert Downey Jr., who received an Oscar nomination for Best Supporting Actor), head of the Atomic Energy Commission, to strip him of his security clearance and thus his influence. It also turns inward, exploring Oppenheimer's struggles with guilt after the bombs have been dropped; his extramarital affair with San Francisco-based physician and psychiatrist Jean Tatlock (Florence Pugh); and his marriage to his wife Kitty (Emily Blunt, also Oscar-nominated for the role). Both women were known communists, at a time when those kinds of political affiliations were a dangerous thing in the U.S.

For a man trusted with such political and military power, Oppenheimer left both historians and Nolan scratching their heads at the recklessness of some of his personal choices. "Every person in his close circle is or was at one point either a member of the Communist Party or very close, and he was probably very close himself," says Alex Wellerstein, a science historian specializing in the history of nuclear weapons at the Stevens Institute of Technology in Hoboken, N.J. Adds Nolan: "During the [bomb development] he's going to

San Francisco and having a tryst with a known communist, and he's doing it while he's under surveillance by military intelligence. This is where he exhibits the sort of naiveté that only the most brilliant minds have."

In one case at least, naive behavior may have existed beside homicidal behavior. In an early and controversial scene in which Oppenheimer is still at Cambridge, Nolan shows him trying to poison his professor—injecting an apple on his desk with potassium cyanide. The movie, which in many cases relies on primary source material including transcripts of the security hearing, is thin on documentation for this piece of the story, but both Bird and Nolan insist that it happened—and that it's backed up by reports from Oppenheimer's contemporaries.

"Oppenheimer told his closest friends at the time that it was a poison apple," says Bird.

"It is a true story," says Nolan. "His parents were called over and he had to go to therapy for years." Still, he acknowledges, he did take some liberties

'In some ways, this is the most nihilistic film I've ever made.'

with facts in writing and shooting other parts of the film. "Everything else I really tried to approach as fiction because I feel we're not making a documentary. You can't hide behind authenticity; you have to make an interpretation—that's the job."

FOR A MOVIE that ranges as widely as *Oppenheimer* does—playing out in Los Alamos, Washington, Cambridge, and California, and populated by scientists, engineers, bureaucrats, and students—there is a snugness to the overall production. It is very much the tale of an era, but it is also the tale of one man. That's particularly evident when moviegoers compare *Oppenheimer* with Nolan's other films: the complex puzzle box of *Inception*, the thunderous *Dunkirk*, and especially *Interstellar*, which plays out on a grand, cosmic scale.

"I would say this is one of the more intimate projects I've worked on with Chris," says cinematographer Hoyte van Hoytema, who has collaborated on four of Nolan's films including *Oppenheimer*. "The cinematography is very much about people's faces. The faces become landscapes."

Van Hoytema and Nolan compartmentalize things even further, shooting some of the film—Strauss's story in particular—in black and white and most of the rest in color. "Strauss's storyline and Oppenheimer's storyline are very divided," says van Hoytema. "We felt we needed a very clear distinction."

That balance of intimacy and magnitude feels right for *Oppenheimer*, which tells a story with the highest possible stakes. The film began shooting in February 2022, the month Russia invaded Ukraine, bringing to mind not just the peril of modern-day war and battlefield nukes, but that of the Cold War era, with Moscow and Washington both in command of an arsenal of city-killing ballistic missiles and only the threat of mutually assured destruction—the idea that letting one of them fly means they'd all fly—keeping them in their silos. Oppenheimer's little Hiroshima bomb had an explosive power of 15 kilotons—or 15,000 tons of TNT.



A single, modern-day U.S. Trident II missile can carry up to 12 nuclear warheads, packing 475 kilotons of punch each. With the invasion of Ukraine, Nolan says, all of the talk in the movie about competing with the Russians “took on a very different flavor. In some ways,” he adds, “this is the most nihilistic film I’ve ever made.”

That mortal legacy of the work done at Los Alamos was very much on the mind of Oppenheimer himself. One of the film’s more fraught scenes unfolds on Oct. 25, 1945, just over 2½ months after Hiroshima and Nagasaki were attacked. Oppenheimer had sought an audience with President Harry Truman, and on that day, the man who built the bombs and the man who dropped the bombs met for the first time, in the Oval Office. As the film depicts it and as accounts confirm, a guilt-wracked Oppenheimer was candid with Truman (played by Gary Oldman), confessing, “Mr. President, I feel I have blood on my hands.”

History recalls just what happened next differently—with Bird and Sherwin reporting that Truman himself gave conflicting accounts, sometimes saying that he replied, “Never mind, it’ll come out in the wash,” and other times that he handed a handkerchief to Oppenheimer and said, “Well here, would you like to wipe your hands?” In the film, Truman merely brandishes the handkerchief, looking at Oppenheimer with a mocking pout. The meeting ends and as Oppenheimer leaves, Truman can be heard describing him as a “crybaby” to an aide. The crybaby part is true, though it was a term Truman used to describe Oppenheimer in a memo to Secretary of State Dean Acheson.

“We made a pretty good stab at expressing it with certainty,” Nolan says.

There is much that *Oppenheimer* expresses—about science, violence, murder, morality; about the very fate of all 8 billion of us. During its promotional tour, Nolan appeared on a panel that included Thomas Mason, the modern-day director of the Los Alamos National Laboratory,

▲
Murphy, center,
filming a
pivotal scene in
Oppenheimer

The TIME100 Leadership Series, presented in partnership with Rolex, profiles members of the TIME100 community—the world’s most influential people. For video conversations and more, visit time.com/leaders

along with author and theoretical physicist Carlo Rovelli. Nolan recalls one of the attendees opining that “the deployment of nuclear weapons has helped ensure world peace for 80 years so far.” At that, Rovelli portentously echoed, “So far.”

“The absurdity of relying on these systems or this precarious balance,” Nolan says. “It’s frightening to contemplate.”

WHERE NOLAN GOES from here is not clear; he’s mum about what his next project will be—but there are clues. Six months after the release of *Oppenheimer*, he announced that his 2020 science-fiction thriller, *Tenet*, whose theatrical release was hamstrung by the pandemic, would be rereleased in Imax format. He said in a statement that that “was the way it was intended to be seen, on the largest Imax and large-format screens.”

Yet Nolan has a taste for cinematic small ball too. Asked to cite his favorite recent films, he doesn’t hesitate to name *Past Lives* and *Aftersun*. The latter is a tender coming-of-age drama, the former a gentle relationship tale that plays out over 24 years. *Aftersun*, he says, “was just a beautiful film.” *Past Lives* was “subtle in a beautiful sort of way.”

So would he do subtle? Probably not. “I’m drawn to working at a large scale because I know how fragile the opportunity to marshal those resources is,” Nolan says. “I know that there are so many filmmakers out there in the world who would give their eyeteeth to have the resources I put together, and I feel I have the responsibility to use them in the most productive and interesting way.”

By any measure, *Oppenheimer* ticks the productive and interesting boxes, and Nolan ticks the box as a director who had both a story to tell and a mission to achieve—to reopen the debate about nuclear weapons and the existential threat they pose in the modern world. Oppenheimer the man, Nolan says, showed “willful blindness” to the mortal and historical ramifications of the work he did at Los Alamos. *Oppenheimer* the movie looks at them clearly—and chillingly. □

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PROFILE

The multiverse of Sarah J. Maas

BY MEGAN MCCLUSKEY

IT'S 9:30 ON A FREEZING MONDAY NIGHT IN JANUARY and there's a line stretching down the block outside of Manhattan's Book Club Bar. The occasion: a midnight release party for fantasy author Sarah J. Maas' *House of Flame and Shadow*, the third entry in her *Crescent City* series. The twist—there's always a twist where Maas is concerned—is that Maas is on her way to surprise the throng of almost exclusively female fans willing to wait in the cold to get their hands on her book the minute it becomes available.

When she enters through the front door, fans are so busy sipping on themed drinks and prepping for trivia that she goes unnoticed. There are a few stunned gasps. Then the cheering begins. "I feel like this will go down as one of the best nights of my life," she tells me at the next stop, a Barnes & Noble where she will count down to midnight with a bigger crowd. "There's such a positive energy."

So much has led up to this moment: Maas has sold more than 38 million copies of her books. She is a titan of fantasy fiction whose three best-selling series—*Throne of Glass*, *A Court of Thorns and Roses (ACOTAR)*, and *Crescent City*—are a driving force behind the meteoric rise of romantasy (a portmanteau for "romantic fantasy"). On BookTok, the influential, reader-centric corner of TikTok, the #ACOTAR hashtag boasts over 8.5 billion views, with users touting podcasts and tattoos. Demand for Maas' books has surged in response, with her publisher, Bloomsbury, announcing that sales of her work had increased by 79% in the first half of 2023—a boost compared to the "Harry Potter effect."

"My fans are a force of nature," Maas, 37, had warned me over Zoom, the day before the new book's release. "I wouldn't be where I am today without them."

She's reached a critical juncture—a crossover between two of three fantasy worlds that grounds her 15-plus books within one multiverse. It's an ambitious move, and not without risk—even if her book is a blockbuster, can she continue to top her own success? As the clock inches closer to 12, the palpable excitement makes one thing clear: as long as her readers have a say, Maas is here to stay.

AMID THE DYSTOPIAN-NOVEL CRAZE of the early 2010s, Maas' fairy-tale-inspired high fantasy was a boon for young-adult fiction (*Throne of Glass* and *ACOTAR* were originally shelved as YA, despite controversy over sexual content). But after eight *Throne of Glass* books and four *ACOTAR* installments, she made her first foray into adult fantasy in 2020 with *Crescent City* Book 1, *House of Earth and Blood*. She had decided the series' second book would end with its human-Fae (think Tolkienesque elves with supernatural abilities) hybrid heroine making a magic-fueled jump into the world of *ACOTAR*.



Maas in New York City on the eve of the release of *House of Flame and Shadow*



'My fans are a force of nature. I wouldn't be where I am without them.'

"For years, I had sprinkled hints throughout all of my books that they were part of a megaverse," Maas says. It proved savvy, prompting deep rabbit holes of theorizing online. "When I started writing *Crescent City*, I had this idea out of the blue that, bam, this is the moment. I can f-cking do this." But getting the first *Crescent City* installment over the finish line was no easy feat. In 2019, around a year after her son Taran, now 5, was born, she began experiencing frequent panic attacks. "I was having such rampant anxiety and depression that it was devouring me," she says. "That was probably the lowest point in my life, emotionally and creatively."

She started going to therapy and poured her mental-health journey into her latest *ACOTAR* novel, published in 2021. "When I wrote *A Court of Silver Flames*, I was in the earliest stages of my own climb out of a pit of despair," she says, tearing up at the memory. "So I crawled out of that pit alongside [the book's protagonist] Nesta."

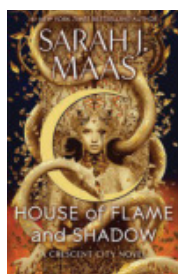


▲
Fans at Book Club Bar, above, and Barnes & Noble, left

That emotional vulnerability is a big draw for her readers. Attendees at Book Club Bar confirm this: “Sarah embraced the fact that Nesta was struggling,” 34-year-old Briana Oliver tells me. “Nesta going through this depression and finding solace in books was very relatable. She doesn’t need to be anything other than who she is.”

Many of Maas’ readers, or “Maas-sassins,” are relative newcomers to her work. Some cite the initial months of the COVID-19 pandemic as a catalyst. But there are recurring themes in their stories—that Maas reinvigorated their love for reading, validated their affinity for fantasy, or made them feel less alone. In a genre long dominated by male authors, that’s no small thing. “I’ve read a lot of fantasy, most of it by men,” Jackie Montalvo, 29, tells me. “Men’s writing doesn’t always do it for me. So to read a series by a woman and see the difference fills me with joy.”

Maas’ fandom also includes many who were cheering her on long before she was published. At 16, she began uploading chapters of what would become her debut novel to the online forum FictionPress. The story—a loose retelling of *Cinderella* in which the heroine is a deadly assassin—became one of the site’s most popular submissions. “The people who read



the earliest versions of *Throne of Glass* made me realize the characters meant something to someone other than me,” she says. “That was so encouraging as a young writer.”

Maas went on to share rough drafts of what was later turned into the first three books in that series. Bloomsbury acquired *Throne of Glass* in 2010; the first book hit shelves in 2012. Two installments followed in quick succession, each climbing higher on the *New York Times*’ best-seller lists. But it was the 2015 debut of *ACOTAR*, originally marketed as a darker reimagining of *Beauty and the Beast*, that would propel Maas’ success to new heights. In addition to the series’ popularity online—where fans gush over its strong female leads and trio of Fae-warrior love interests (affectionately known as the “Bat Boys”)—a TV adaptation co-written by Maas is currently in development at Hulu.

WHEN IT COMES TO ROMANCE, Maas doesn’t skimp on spice. But her love stories largely strike a chord because of the deep emotional connections underlying the physical attraction. She attributes her ability to craft appealing male characters to her relationship with her husband Josh, with whom she has two children, Taran and 2-year-old Sloane. As Maas chats from her New York City home office, Josh briefly interrupts to bring her a matcha latte. On release night, he’s by her side throughout the evening. “I’m blessed to have someone who treats me like an equal and celebrates my successes,” she says. “The baseline standard is that these males respect and cheer for the women in their lives, and know that they deserve to feel special and loved.”

But not all readers have felt seen by the work. Maas has drawn fire from those who say her books lack diversity or feature characters of color and LGBTQ characters who exist only in relation to white, heteronormative protagonists. “I’m constantly learning,” Maas says of the criticism, noting that she now employs sensitivity readers. “When I make a mistake, I learn from it. I want my writing to be reflective of how diverse my fantasy worlds are and for every person who picks up my books to feel seen and welcome.”

The appetite Maas’ readers have for her work appears insatiable. And the book world has taken note. In March 2023, she signed a new four-book deal with Bloomsbury on top of a pre-existing three-book contract. More screen adaptations are sure to follow. Even with her new title mere hours away from release, a faction of the Book Club Bar crowd is already thinking about the future of the Maas-verse rather than wondering if the long-awaited crossover will play out as they’ve hoped. Some variation of “please write faster” is a common refrain when I ask what they would tell Maas if they got the chance to talk to her.

When they actually do, the adoring looks on their faces suggest they probably decided to say something else. But it’s all in keeping with this symbiotic relationship—they trust her to carry their favorite stories forward just as she trusts them to continue returning to her worlds.

“I want my readers to come away from my books with the knowledge that they can fight for what matters to them,” Maas says. “My books have happy endings. They’re supposed to be hopeful.”

ESSAY

The uncancelable Larry David

BY JUDY BERMAN

IN THE 12TH AND FINAL SEASON OF *CURB YOUR Enthusiasm*, Larry David—a character based on and played by creator Larry David—pressures a busy hotel housekeeper to fish his glasses out of the toilet. He whines about having to pay a big “condolence tip” to a waiter whose mom just died. He muses to his buddy Leon Black (J.B. Smoove), who is Black, “I wonder if a Black man going to Africa is like a Jew going to Israel.” He calls Apple’s Siri the C word. And that’s all in the first episode.

Since *Curb* debuted on HBO in 2000, fans have relished such excruciating scenes, where Larry’s unique combination of privilege and neuroses unleashes politically incorrect chaos. With Leon and his manager Jeff Greene (Jeff Garlin) as accomplices, he makes an art of causing offense. No one is safe from his trifling: women, kids, people of color, LGBTQ people, service workers, characters with disabilities, and adherents of every major religion and political orthodoxy.

The fictional Larry wouldn’t last a day in the public square circa 2024. But the real David never seems to get canceled, no matter how many cultural third rails he touches. It’s quite a feat at a time when the discourse around comedy is so combustible. The social media masses scrutinize award-show hosts’ old jokes. Right-wing pundits sic their viewers on comedians who mock their pet causes. Onetime liberal heroes Dave Chappelle and Louis CK have been knocked off their pedestals by antitrans humor and reports of sexual misconduct, respectively.

David, by contrast, is more widely beloved—and cooler—than ever before. *GQ* hails the 76-year-old boomer as a fashion icon. He gets name-dropped by Natasha Lyonne and Ayo Edebiri. In 2021, the same year streetwear brand Kith released a *Curb* collab, he set the internet ablaze by engaging in perhaps the most Gen Z activity possible: sipping espresso martinis with Timothée Chalamet.

For 24 years, the critical distance and self-deprecating humility that separate comedian from character have saved David from provoking the kind of outrage his avatar so relentlessly sows. He has, for the most part, managed to send up the universally irritating virtue signaling of rich liberals and channel the unspeakable frustrations of viewers without endorsing actual



▲
As *Curb* winds to a close, David is more relevant than ever before

bigotry or injustice. As *Curb* airs its final episodes, its misanthropy has never felt more timely.

LARRY DAVID THE CURB ANTIHERO, tellingly referred to by David as “TV Larry,” has been classified by actual scholars as a schlemiel—Yiddish for chump, fool, or awkward bungler. What makes TV Larry more interesting than the average schlemiel, and his transgressions more fraught, is his success. Set for life thanks to residuals, the *Seinfeld* co-creator wanders L.A.’s wealthiest neighborhoods, playing golf, making scenes in restaurants, and taking on inessential projects.

Like a *Seinfeld* character with infinite free time, he obsesses over minutiae, escalating every conflict, no matter how inappropriate. When Michael J. Fox (one of many stars who play themselves) shakes his head toward Larry, Larry demands to know if it was a gesture of disapproval or an involuntary “Parkinson shake.” A know-it-all certain everyone else is doing life wrong, he doesn’t seem to know much at all. (“What’s the difference between Harriet Beecher Stowe and Harriet Tubman?” he wonders in one episode.)

He’s not alone in his failings. Jeff is a buffoon, always setting off his shrill, tacky wife Susie (Susie

Essman). Leon's life revolves around, as he puts it, "tappin' ass." In the misanthropic world of *Curb*, everyone is a pathologically annoying product of their own pettiness, ignorance, and hangups. In "Palestinian Chicken," often cited as the show's best episode, Larry and Jeff frequent a Palestinian restaurant, where they feel uncomfortable as Jews. Larry is so desperate to maintain his good standing that he gets into a fistfight with his suddenly pious friend Marty Funkhouser (the late Bob Einstein), who shows up in a yarmulke. The spat endears him to the establishment's sexy proprietor, Shara (Anne Bedian); soon they're in bed, getting off on exchanging offensive names. In the end, Larry stands frozen between two sides of a demonstration: Jews, led by Susie, protesting the restaurant's new location next to a Jewish deli, and a Palestinian counterprotest led by Shara. Cue *Curb*'s queasy theme music.

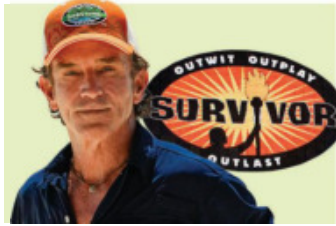
"Palestinian Chicken" is not really a statement about Palestine or Israel or antisemitism or geopolitics. The characters' identities are just a medium for exposing their self-involvement. Marty and Susie are pathetic for believing their interference with a small business constitutes righteous activism. Jeff, Shara, and especially Larry are not mouthpieces for their people; they're selfish pleasure seekers. True to David's *Seinfeld*-era "no hugging, no learning" credo, no one gleans an iota of wisdom from the conflict.

WHEN STAGING screaming matches between people of all identities on the most sensitive of topics, it helps to seek input from the performers involved. *Curb* has always had a uniquely effective way of doing so. Because episodes are improvised from outlines, the actors write their own dialogue as cameras roll. In a 2004 *New Yorker* profile, David invoked a memorable rapper character named Krazee-Eyez Killa (Chris Williams), as an example of why this approach was so effective: "Could I have written those words in a million years better than that guy said them? No f-cking way! I wouldn't have had the balls to do it!"

The humility inherent in this approach, which echoes David's own self-deprecating performance, is hard to come by these days, when

THE CRINGIEST CURBS

BY BEN ROSENSTOCK



"THE SURVIVOR"

A Holocaust survivor and an alumnus of the TV show *Survivor* argue about who endured more.



"THE BARE MIDRIFF"

Larry becomes fixated on his average-size assistant's preference for crop tops.



"THE N WORD"

Larry uses the *N* word when retelling a story he overheard, offending many in the process.



"PALESTINIAN CHICKEN"

Larry champions the Palestinian community after falling for a restaurant's food—and proprietor.

popular stand-ups from Chappelle to Amy Schumer traffic in sociopolitical sanctimony and position themselves as experts on experiences not their own. To a certain extent, *Curb* functions as a parody of precisely these tendencies.

This is not to say that the show or its creator has a perfect track record. A trans actress said in 2015 that she'd walked out of a *Curb* audition, in response to a joke, which never aired, she deemed transphobic. An episode about a woman who bares her flabby stomach at work just felt mean. Not every choice made in early seasons (see: Larry's casual use of the *N* word in "Krazee-Eyez Killa") aged well.

If what redeems David's diciest provocations is the genuineness of his commitment to equal-opportunity offense, with TV Larry always getting the comeuppance he deserves, then it's his bleak vision of society that gives his humor its thrilling edge. Rather than a tangle of systemic forces, *Curb* throws open the gates of a global asylum run by 8 billion maniacs, all weaponizing their differences against one another. Some, myself included, would insist you can't separate individual psychology from structural inequality. But the asylum image certainly captures the mood of an era of anger and delusion, as unhinged internet invective increasingly erupts into physical space.

David responds to rampant hysteria not with political polemic, but with confirmation that, in exasperated spirit if not in material circumstances, he's scrapping in the muck with the rest of us. The more the world goes to hell, the more relatable his cranky alter ego becomes. The same goes for David's trend-averse personal style, which reads as an almost punkish gesture of refusal. It's no wonder that the utter delight he took in social distancing made him a guru of lockdown.

In that sense, maybe David's indifference to cancellation—the fact that he neither fears blowback nor, like so many discourse-poisoned comedians, obsesses over his haters—is the superpower that makes him invulnerable to it. As showrunner Jeff Schaffer recently put it: "People need Larry, although the feeling is not mutual." What could possibly be cooler? □

Lulu Wang The director of *The Farewell* on her new streaming series *Expats*, the power of empathy, and the lesson in a search for a salad with cranberries

Your breakout film, *The Farewell*, about a dying matriarch, asked questions about the difference between American and Chinese values when it comes to things like family and community. What were you trying to explore? I think that there's something about old world, new world. There's this theme that runs through all of my work around collectivism vs. individualism. It's easy to think of it as a binary, that Americans are all about individualism and Eastern cultures often emphasize collectivism. But I think ultimately the answer lies somewhere in between. For everybody it's going to be a little bit different.

How did you come to *Expats*, your limited series on Amazon? When I read Janice Y.K. Lee's novel, which Nicole Kidman brought to me, I felt so compelled by how nuanced and layered all of the female characters were, and the way that these women are all so different. In my personal life, I have this masochistic quality of putting people who are very different and have very different points of views together. And there's so much joy for me when I see people who, on the internet, they would probably yell at each other. But in life, you put them together and you share a meal and you have these conversations, and I've seen people who, like, expand. In my work I wanted to do the same thing.

Why did you first pass on doing it? My fear was that there was a desire to want to celebrate the expat bubble because it is a very aspirational world and everyone loves to see rich people and their shenanigans. So I was also struggling with, how do I tell a story about privilege and make sure that I'm not judging it, but I'm also not celebrating it?

Is the tide shifting for Asian American representation in Hollywood?

I definitely do think that there is a shift, in that there's a lot more facets to the Asian American story. That it's not just an immigrant story, it's not always an outsider story. It can just be about people.

PERSON OF THE WEEK

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It's set in Hong Kong. How did you consider the intersection of the personal and the political when you were making this world? I thought a lot about Hong Kong as a character and the journey of the city as a parallel to the journey of the women in the story. This question of, do you fight? Or do you endure? Those are both forms of resilience. And for my family who has done both in different situations, that's a question that these characters ask. And it's a question that I think many Hong Kongers have asked.

After moving to L.A. you started this company called Legal Reel shooting videos for plaintiffs' attorneys. What did you learn from that? I learned a lot about empathy, about how to talk to people to get them to open up. I was crafting a narrative to help tell somebody's story where they felt otherwise unheard. How do you value the loss of somebody who's been injured at work who can no longer play with their kids?

You also worked as a personal assistant on feature films. I did that too. What's the worst thing you were asked to do? I was asked to get a very specific salad from the deli of Whole Foods, and I had to check, like, five Whole Foods at close to 10 o'clock at night because they didn't have the one with the cranberries. I was like, I'm made for more than this.

What did you learn from making your first film, *Posthumous*? I learned that I could make a film. There's a lot of impostor syndrome in this industry. I'm very much somebody who has to feel out the process. And so I had a lot of self-doubt, and then by the end of it I just felt like, OK, I know how to do this. —CHARLOTTE ALTER



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