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TIME

# THE FIRST AI WAR

Palantir and other tech giants are building the future of battle in Ukraine

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# How Tech Giants Turned Ukraine Into an AI War Lab

Vera Bergengruen is a senior correspondent at TIME, based in the Washington, D.C. bureau. She covers the overlap of national security, politics, and technology. Her work at TIME has won the Society of Professional Journalists' Sigma Delta Chi Award and a New York Press Club Award.

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."

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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. From 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.

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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 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.

**Read More:** *Inside Ukraine's Plan to Arm Itself.*

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 outsize 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, 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. The company's 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 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.

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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.

**Read More:** *Where Zelensky Comes From*.

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.

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**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.’”

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**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.

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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 deterrence,” 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.”

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* •

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# A Texas Town's Misery Underscores the Impact of Bitcoin Mines Across the U.S.

Andrew R. Chow is a technology correspondent at TIME. His covers crypto, AI, tech regulation, and culture.

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 even walk out on your back patio and 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 seemingly has caused wildlife to flee the region. "My citizens are suffering," says Hood County Constable John Shirley.

Granbury is one of many towns across the U.S. feeling the negative impacts of bitcoin mining, an energy-intensive process that powers and protects the cryptocurrency. Those impacts include carbon and noise pollution, and increased costs on consumers' utility bills. According to the New York *Times*, there are 34 large scale bitcoin mines across the U.S. In 2022, the crypto market tumbled, in part due to high-profile collapses of crypto companies like Sam Bankman-Fried's FTX. But in 2023, prices rebounded once again, and mining companies decided to expand their operations in order to cash in, causing global energy consumption for mining to double, according to one study. Critics say that mining is causing both long-term environmental damage, due to its energy use, as well as local harm. "We're at a loss here," Granbury resident Shadden says. "We want our lives back."

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Bitcoin is so energy-intensive because it relies on a process known as proof-of-work. Rather than being overseen by a single watchdog, bitcoin is designed to disperse 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. Over the last few years, Texas has become a global leader in crypto mining because miners can access cheap energy and land there, as well as benefit from friendly tax laws and regulation. Bitcoin miners consume about 2,100 megawatts of the state's power supplies, and companies like Riot Platforms and Marathon Digital Holdings have recently expanded in the state. (Other states, conversely, have pushed back on the industry: In 2022, New York imposed a moratorium on bitcoin mining over concerns that miners were overusing renewable energy resources.)

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In December, Marathon paid $178 million to purchase bitcoin mines in Kearney, Nebraska and Granbury from Generate Capital. But with the Granbury purchase, Marathon also inherited a swath of angry nearby residents across Hood County whose lives have been upended by the mining facility. Generate Capital started operating the 300-megawatt facility, which sits about an hour southwest of Fort Worth, in 2023. Initially, many residents were unaware what, exactly, was causing the noise. Shannon Wolf, who lives about 8 miles from the plant, first assumed that the rumble was coming from a nearby train. “It has woken me from a dead sleep before,” she says.

The rumble, it turned out, comes from the massive cooling fans that the facility runs to keep their computers from overheating. Data centers, like bitcoin mines, also run massive cooling fans that have drawn the ire of nearby residents.

As residents learned what had caused the din, social media platforms like NextDoor and Facebook flooded with complaints. “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 poster.

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

Shirley says that he is monitoring the decibel levels of the facility. 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—and 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 town hall on Jan. 29, hosted by Shirley and Hood County Commissioner Nannette Samuelson. About 75 people filled the room to complain about the facility. Complaints from attendees included migraines that required trips to the emergency room and a vertigo diagnosis. One attendee said she had been forced to put her chihuahua on seizure medication. Others claimed that their windows rattled from the vibrations, and that the noise made their homes unsellable.

“How does Hood County benefit from having such a ridiculous thing?” asked one woman. “What does this community gain from having them there?”

Charlie Schumacher, the vice president of corporate communications at Marathon Digital Holdings, wrote in an email to TIME that the company was unaware of the noise issues when it purchased the site. He said Marathon was commissioning a third party to conduct a sound study as early as next week. And on Feb. 1, three days after the town hall, Marathon announced that it planned to take over full day-to-day control of the Granbury mine from its previous operators.

“Marathon deeply values our relationships with the communities in which we live and work, and we appreciate the candid input our neighbors have shared with us in recent weeks,” he wrote. “Our

team will now have more influence over the sight and can hopefully have a more positive impact for the community. We are in constant touch with local officials and working with community leaders to gain more information about the situation and to work on solutions.

US Bitcoin Corp did not immediately respond to a request for comment.

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While the constant noise has become a major irritant in the county, residents also worry about the facility's impact on their power supply and the surrounding environment. Texas has a notoriously fragile grid that becomes strained in cold weather: a 2021 deep freeze caused millions of people to lose power. Wolf Hollow II, the gas plant that supplies the Granbury bitcoin mine with energy, failed during that crisis.

This year, parts of Texas were hit with a frigid arctic front in mid-January, with temperatures dropping into the teens. The state's grid operator, ERCOT (Electric Reliability Council of Texas), asked Texans to conserve electricity. The grid held up under strain, and Wolf Hollow continued to operate at full capacity, as did the mining operation.

Nevertheless, some residents in rural Hood County lost power. That included Hunter Sims, who lives a mile and a half from the plant and lost power for 9 hours, relying on a backup generator for his well. Sims was angered that he was without power while the mining operation continued unabated. Overall, he says his quality of life has worsened due to the facility's noise pollution. "When I'm sitting in my living room, I can hear a loud humming," he says. "You can't really relax."

A representative for Constellation Energy, the company that runs Wolf Hollow, said that any power outages were not a result of any

issues at the plant, but rather on the local level of transmission or distribution.

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Erik Kojola, a senior Climate Research Specialist for Greenpeace USA, says he's monitored similar complaints from residents near new bitcoin mining centers across the country, in Iowa, Indiana, Nebraska, and upstate New York. He also contends that bitcoin mining poses a much larger threat to the environment. "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."

Back in Granbury, the discomfort caused by the plant is causing some consternation for a region that largely prides itself on being pro-industry and anti-regulation. "I agree with people having the right to own a business if it's not illegal or amoral," says Granbury resident Wolf. "But when you're harming a group of people, there needs to be some type of remedy."

**Correction, Feb. 2, 2024**

*A previous version of this story misstated when the Wolf Hollow II power plant failed. It failed in 2021; it did not fail during a 2011 storm, though a separate but nearby plant, Wolf Hollow I, did. The story also mischaracterized how the Texas grid performed in mid-January. Some individuals lost power, but the grid held up.*

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# What to Know About the Farmer Protests in Europe

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Morgan Ody, a 44-year-old French farmer from the hilly region of Brittany, embarked on a 12-hour train journey through Paris before she finally arrived in the Belgian capital of Brussels. There, she joined tens of thousands of farmers who took to the streets on Thursday to demand that E.U. leaders do more to help with their economic plight.

Ody, who represents a French farming union called Confédération Paysanne, says that farmers across the European continent were already plagued by poor conditions brought on by falling incomes, high costs, and competition from cheap imports. But now, the E.U.’s recent announcement of more strict green policies threatens to make things worse.

“The situation is already difficult for farmers, who are completely overburdened because they work too much,” Ody tells TIME. “And now the E.U. wants to put in more free trade agreements, that will create competition that is impossible to overcome.”

After weeks of protests across the continent, the escalation in the Belgian capital on Thursday saw thoroughfares being blockaded by tractors and burned tires, while farmers from Germany, France, Belgium, Italy, and Greece threw eggs at the European Parliament, set bonfires, and even toppled a statue of John Cockerill, a 19th-century British industrialist.

## Why are E.U. farmers protesting?

Currently, the farming sector accounts for 11% of the E.U.’s greenhouse gas emissions, which the E.U. hopes to curb by revamping its existing Common Agricultural Policy, a yearly subsidy system worth nearly $60 billion. The new policies, which are part of the European green deal that aims to make the bloc climate-neutral by 2050, would include an obligation for farmers to devote at least 4% of arable land to non-productive features. They must also carry out crop rotations and reduce fertilizer use by at least 20%.

But many farmers argue these measures will make the European agricultural sector less competitive against imports. On Thursday, farmers union representatives told reporters they were “fed up in general” with “too much administration” and rules telling them how they should farm.

For Ody—who spoke with TIME on behalf of European Coordination Via Campesina, the collective voice of peasant farmers in Europe—the anger is fueled by contradiction. “On the one hand, we are being asked to farm more sustainably, which is fair enough because we know that the climate crisis exists because it’s affecting us,” she says. “But at the same time, we are asked to keep producing as cheap as possible, which puts us in an impossible situation.”

Though many of the grievances are shared by farmers continent-wide, their concerns also vary from country to country. In Germany, farmers are protesting a plan by Berlin to phase out tax breaks on agricultural diesel to balance the budget, which they say would lead them to bankruptcy. In the Netherlands, farmers are revolting against a requirement to reduce nitrogen emissions. In France, farmers’ unions are unimpressed by the concessions offered by President Emmanuel Macron’s government and are fighting for improved pay, less bureaucracy, and protection from foreign competition.

The war in Ukraine has only made matters worse by causing a supply gut due to Russia’s aggression, upending trade flows and raising farmers’ costs for energy, fertilizer, and transport in many E.U. countries.

What measures are governments taking to solve the situation?

## What steps are E.U. governments taking to help farmers?

After Thursday's protests in Brussels, Macron called on the E.U. to implement farming reform, saying that Europe's farming sector is facing a big crisis and must "profoundly" change its rules by implementing a joint E.U. mechanism to guarantee fair prices paid to farmers by food giants and supermarkets. A newly-elected French prime minister, Gabriel Attal, also announced a package worth $160 million in aid for French farmers in need, after which two major farmers' unions said they would tell their members to suspend protests.

"Everywhere in Europe, the same question arises: 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?" Attal said on Thursday while announcing the measures.

Attal's pledge follows measures worth nearly $430 million that several European governments have already announced to help assuage the farmers' anger, while at the E.U. level, the European Commission is proposing loosening green farming requirements while still allowing agricultural subsidies.

But as E.U. leaders struggle to balance the need to save agricultural livelihoods while reducing farming's impact on the climate,

farmers like Ody say they are still angry and will continue to mobilize at protests. “Our main demand is that we get a European law that ensures that the price we get covers the cost of production, including revenue,” she says.

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# How American Singles Really Feel About Consensual Non-Monogamy

Cady Lang is a staff writer at TIME. She covers culture, focusing on identity, celebrity, and fashion.

Nearly one third of singles in America have had a consensually non-monogamous relationship, but many singles are still committed to the concept of traditional sexual monogamy.

According to the 2024 Match Singles in America report, which released on Wednesday, while 31% of singles in America have explored consensual non-monogamy (also known as ethical non-monogamy), 49% of singles say that traditional sexual monogamy is still their “ideal sexual relationship.” Of the one third of singles who had tried consensual non-monogamy, respondents reported participating in 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).

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Though consensual non-monogamy has long existed, it's enjoying a moment of popularity in the mainstream, and showing up in pop culture with television shows, books, and media focusing on its facets. Anthropologist Helen Fisher, Match's Chief Science Advisor, who helped co-lead the study, said that though this moment is an exciting development for consensual non-monogamy, it's 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 told TIME. "What's actually extraordinary is that we bother to pair up at all and indeed we do."

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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, who were the property owners. She notes that the current interest in consensual non-monogamy 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 as contributors 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.

**Read more:** *How the Fall of Roe v. Wade Has Changed Dating in the U.S.*

"I do think that the rise of consensual non-monogamy 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 outside of conventions when it comes to their needs, desires and relationships—and she says that will have a positive outcome.

"What's interesting about the consensual non-monogamy is not the non-monogamy," she says. "What is is the fact is 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."

Many of the singles who engaged in consensual non-monogamy did feel that the experience positively impacted their dating life; 38% said their non-monogamous 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.

**Read more:** *It's Now 40% More Expensive to Be Single and Dating Than It Was a Decade Ago*

Match's survey also found that finances continue to be the top stressor for singles for the second year in a row, with singles reporting that personal day-to-day finances was their top stressor, followed concerns over the economy and inflation. Ahead of the 2024 election, Match also found that singles have voting on their

mind this year, particularly when it comes to reproductive rights. The overturning of Roe v. Wade has affected the dating and sex lives of nearly 9 in 10 singles (87% of daters under age 50) since the 2022 ruling, a significant jump from 78% last year.

When it comes to the ballot box, 22% of singles say abortion legislation will determine their vote, while 70% say a candidate's view on abortion will have some impact on how they will vote, with a majority of singles reporting that they identify as pro-choice. The rollback of Roe v. Wade has also had a lasting impact on singles' dating and sex lives; 12% of people are more hesitant to date now, while 10% are more nervous or anxious during sex and 11% report having sex less often.

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# King Charles III Is Diagnosed With Cancer

Armani Syed is a world affairs reporter at TIME. She covers global affairs, with a focus on the SWANA region, arts and culture, and royal institutions.

King Charles III has been diagnosed with an undisclosed type of cancer, Buckingham Palace said Monday.

While the 75-year-old King recently underwent treatment for an enlarged prostate, the Palace said his diagnosis was not prostate cancer in a statement on Monday. The cancer was, however, discovered during subsequent checks that took place as a result of prostate treatment.

The statement adds that the monarch began receiving cancer treatment on Monday.

“The King is grateful to his medical team for their swift intervention, which was made possible thanks to his recent hospital procedure. He remains wholly positive about his treatment and

looks forward to returning to full public duty as soon as possible," the statement said.

The King's royal engagements have been postponed, with other senior members of the family expected to stand in on his behalf. The Palace added that the King has chosen to share details of his illness to "prevent speculation" and further public understanding for others who have been diagnosed with cancer.

**Read More:** *How the World Is Reacting to King Charles' Cancer Diagnosis*

The BBC reported Monday that Prince Harry has spoken to his father following the cancer diagnosis and will travel to the U.K. to see him in the upcoming days. The King has returned from Sandringham, in Norfolk, to London for his first treatment.

The King's health has been a public focus this month since he was admitted to a private London clinic hospital on Jan. 26 for a pre-planned procedure to correct his enlarged prostate, otherwise known as a benign prostatic hyperplasia (BPH).

Ahead of his hospitalization, Buckingham Palace announced on Jan. 17, that the King would undergo prostate treatment in efforts to encourage other men to have their prostate checked. His approach was successful, causing a surge in people checking the NHS website's page about the condition 11 times more than usual, according to *The Guardian*.

"In common with thousands of men each year, the King has sought treatment for an enlarged prostate," a statement read. Confirming that His Majesty's condition was benign, the Palace added that "the King's public engagements will be postponed for a short period of recuperation."

Royal commentator Richard Fitzwilliams told TIME that King Charles has shown a “a more open approach” from the royal family by demonstrating his willingness to share details of his health condition.

Fitzwilliams added that Charles’ illness is “undoubtedly serious” and that his ongoing cancer treatment will undoubtedly restrict his “workaholic” schedule.

“As the longest serving Prince of Wales in history he is likely to find it extremely frustrating that, for example, trips abroad may be postponed,” Fitzwilliams said.

## How the U.K. is reacting to the diagnosis

Politicians from across the U.K. began sharing well wishes for the monarch on Monday evening local time. U.K. Prime Minister Rishi Sunak posted on X saying, “Wishing His Majesty a full and speedy recovery. “I have no doubt he’ll be back to full strength in no time and I know the whole country will be wishing him well.”

On Tuesday, Sunak also spoke to BBC radio about the King’s diagnosis, saying, “thankfully, this has been caught early.” Sunak added that he would “communicate with him as normal” as per his duties as Prime Minister.

“He’ll just be in our thoughts and our prayers. Many families around the country listening to this will have been touched by the same thing and they know what it means to everyone,” Sunak said. “So we’ll just be willing him on and hopefully we get through this as quickly as possible.”

The Labour Party leader, Keir Starmer, shared a similar post, wishing the King “all the very best.” He added: “We look forward to seeing him back to swift full health.”

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Scotland’s First Minister Humza Yousaf sent “thoughts and prayers” to the monarch, wishing him “the very best for a speedy recovery and return to public life.” Yousaf’s X post continued: “My thoughts are also with Her Majesty The Queen and other Members of the Royal Family at what I know will be a worrying time for them all.”

Welsh First Minister Mark Drakeford was also “saddened to hear the news” and sent thoughts from himself and people across Wales to the royal family. He also wished him “Gwellhad buan,” or “get well soon” in Welsh.

Meanwhile, Northern Ireland’s newly appointed First Minister Michelle O’Neill said she is “very sorry” to hear about the King’s illness. “I want to wish him well for his treatment and a full and speedy recovery,” she said.

*This is a developing story, please check back for updates.*

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# The Rooftop Solar Industry Could Be on the Verge of Collapse

Alana Semuels is an economic correspondent at TIME. She covers work, consumer spending, retail, gender, and technology. She is a four-time nominee for the Gerald Loeb Award for Distinguished Business and Financial Journalism, and has won awards from the Society of Business Editors and Writers and the Los Angeles Press Club.

A decade ago, someone knocking on your door to sell you solar panels would have been selling you solar panels. Now, they are probably selling you a financial product—likely a lease or a loan.

Mary Ann Jones, 83, didn't realize this had happened to her 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. Unbeknownst to Jones, the salesman used "yoursolarguyujosh@gmail.com" as her purported email address—that of course, was not her email address. 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.

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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 to both consumers and investors to fund their growing operations.

These looming financial problems could topple the residential solar industry at a time when solar is supposed to be saving the world. Though solar represented just 3.4% of the nation's electricity generation in 2022, studies show that rooftop solar could eventually meet residential electricity demand in many states if

deployed widely, freeing American homes from dependency on fossil fuels. To help speed adoption, the Inflation Reduction Act extended a 30% tax credit for residential solar and battery installations.

Still, the residential solar industry is floundering. In late 2023 alone, more than 100 residential solar dealers and installers in the U.S. declared bankruptcy, according to Roth Capital Partners—six times the number in the previous three years combined. Roth expects at least 100 more to fail. 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. (This isn't because of an economy-wide trend; the S&P 500 has grown 26% over the same time period.) 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; it also faces a lawsuit alleging that the company made false and misleading statements about its financial well-being.

At the root of these struggles is the complicated financial engineering that helped companies raise money but that some investors and analysts say was built on a framework of lies—or at least exaggerations.

Since at least 2016, big solar companies have used Wall Street money to fund their growth. This financialization raised the consumer cost of the panels and led companies to aggressively pursue sales to make the cost of borrowing Wall Street money worth it. National solar companies essentially became finance companies that happened to 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.’”

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## How financialization raised the cost of rooftop solar

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 upfront for what was a relatively untested product. To get around this problem, a company called SolarCity came up with a new model in the early 2010s—leasing solar panels to customers, allowing them to pay little to no upfront cost. Companies like SunRun quickly followed; by 2014, this “third-party owned” kind of leased solar accounted for around 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 the hefty 30% tax credit for solar panels the government approved in 2005. It then took those tax credits and sold them to companies like Google or Goldman Sachs who, unlike SolarCity, were making a profit and so owed money on their taxes. Those sales helped fund 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 sell them to investors. Public companies especially faced intense scrutiny from investors who expected double-digit quarterly growth. And with upfront costs no longer a barrier for new customers, solar companies began to see almost every homeowner as a target, and they deployed expensive sales teams to go out and sell as aggressively as they could.

“It is genuinely hard for these national businesses to maintain profitability—if you want to grow, you have to spend a lot of money on customer acquisition,” says Michelle Davis, head of global solar at Wood Mackenzie.

SolarCity ran out of money in 2016 and was acquired by Tesla, but the problems created by its expensive model have persisted. (Tesla did not respond to a request for comment.) Even today, about one-third of the upfront 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 upfront 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 will only grow by 13% in 2023 and then contract 12% in 2024, according to predictions from 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.

Residential solar representatives dispute the claim that the industry is in trouble; though installations will decline in 2024, the number of homes with rooftop solar will increase from 4 million today to 10 million by 2030, according to Stephanie Bosh, vice president of communications for the Solar Energy Industries Association.

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. In their most recent earnings reports, SunRun lost $1 billion in the last quarter, while Sunnova said that one risk to its

future growth is its dependency on raising money from third-party investors. As Travis Hoium, 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.”

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## The lies that underpin consumer solar loans

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. Consumer lawyers have made allegations about salespeople fudging consumer incomes on loan applications so they could qualify; telling them they’d get a tax refund for solar panels even if their income wasn’t high enough; and sending important documents to fake email addresses so consumers wouldn’t see them and protest.

Jesus Hernandez, 53, says a salesman from Southern Solar called him in 2019 with the pitch that installing solar panels could cut his monthly electric bill to as low as $50 a month; Hernandez was paying around $500 a month at the time. Hernandez, a housekeeping supervisor, couldn’t afford the up-front costs, but the salesman said GoodLeap would give him a loan. When the salesman later came to his house in Dallas to close the deal, he also promised that were Hernandez to get panels, the government would write him a solar-subsidy check for $16,000. Hernandez was sold; he agreed to take out a 20-year loan to install about $62,000 worth of solar panels.

After interests and fees, that $62,000 turned out to be more like $90,000. Today, Hernandez pays about $400 a month on the loan. Worse, his electric bill is still in the $500 range, because the panels do not produce the promised electricity. The company took out a

lien on his house without his knowledge, he says, and it turns out that his 2019 income—around $50,000—meant that he wasn't making enough money to qualify for the tax incentive upfront. He sued Southern Solar, and a jury awarded him $500,000 in November 2023 but he hasn't seen a penny yet, he says. He tells anyone who asks that they shouldn't buy solar panels, and if they do, that they should record the whole sales pitch in case the salesperson isn't telling the truth. "Everything they told us was a lie," he says. (In response to a request for comment, Southern Solar said it was filing an appeal and so would not answer questions at this time.)

Hernandez is one of a growing number of consumers now saying in courts and in arbitration that salesmen from solar-panel and solar-panel-finance companies—including some of the biggest in the U.S., like GoodLeap, Mosaic, Sunnova, and SunRun— tricked them into taking out onerous loans they didn't want—or that someone signed them up for a loan without their knowledge. "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."

There is evidence that solar finance companies knew that not every sale is 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 salesmen 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. In other words, the cost of the panels, had they paid cash, would have been just $20,000; the extra 30% is the price they paid for the low-interest loan, though many consumers allege this was not explained to them.

Convincing 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 convince customers to sign up to finance a deal. “Every deal that we sell that’s financed, the lending company basically gives us a kickback,” said a recruiter on a public Zoom call in October trying to attract new salespeople to work for a company called TST Pros. That kickback is on top of an average of $7,000 commission per deal, the recruiter said. And of course, those costs get passed along to consumers, too.

Consumers don’t catch these 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, Connor says.

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's lawyer. (Goodleap says that it is inaccurate for Jones to claim that the loan was fraudulently originated and that it has a video of her being walked through its terms, though it declined to share that video with TIME.)

"These finance companies are well aware that salesmen are taking advantage of electronic devices to hide documents from consumers," says Andrew Milz, who has represented a number of solar-finance customers in cases filed against a range of companies including Mosaic.

Few of these solar cases have yet made it to court, in part because of the binding arbitration requirements in many of the loans and leases, but some recent developments make lawyers hopeful that their clients won't have to pay these loans. For example, last November, after just two days of testimony, a jury awarded Jesus Hernandez half a million dollars. And a California judge denied GoodLeap's legal motions to have Mary Ann Jones' case resolved by arbitration, meaning it is on its way to court, though GoodLeap filed an appeal.

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. Like in the subprime lending crisis, some companies issued loans to people who could not—or would not—pay them. Like in the subprime lending 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 5% in the fall of last year, according to an October 2023 report issued by KBRA, a bond ratings agency. Historically, delinquencies in solar ABS had been around 1%.

The firms that grade these asset-backed securities have long said delinquencies would be low because rooftop-solar customers had high credit scores. The problem is that they appear not to have considered that even customers with good credit scores may not want to pay for solar panels that they were told would be free—or that salesmen could be signing people up without their knowledge. The appraisal and ratings firms tasked with vetting these financial instruments have failed before in the solar industry; in 2019, a group of investors sued both the auditor and the appraiser that had signed off on a company called DC Solar that turned out to be a billion-dollar Ponzi scheme.

“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.

So far, national regulators have not taken much action against solar panel installers or the companies that finance solar loans. There is one exception: in 2021, the Consumer Financial Protection Bureau required a financial company called GreenSky to refund or cancel $9 million in loans to thousands of customers who reported not authorizing them. GreenSky's business model is similar to that of Mosaic and GoodLeap; salesmen show up at a potential customer's door promising them home improvements, encouraging them to take out a loan at the tap of a few buttons.

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 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 how many 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. Sunnova also emphasizes that each ABS has additional protections built in to protect investors from defaults, and that it has not had to use those protections. Mosaic did not respond to a request for comment.

Even if none of the consumer cases succeed in court, some Wall Street analysts say that solar companies' questionable accounting around the long-term value of the systems they sell could come back to haunt them if regulators take action. 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. As early as 2016, a researcher at MIT's Energy Initiative estimated that such companies were overstating this value by as much as 50%. 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, alleges that SunRun has claimed $40 billion in tax subsidies it didn't deserve, and 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 consistent with industry best practices, and 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."

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## The future of residential solar

The broad problems facing residential solar and financing companies are already causing some pain in the forms 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 amidst softening demand.

It could get a lot worse before it gets better, with not just lost jobs, but 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's fewer door-to-door sales.

Other analysts think the solar industry will rebound after a few tough years. They are not worried about alleged fraud—if there were so many unhappy customers out there, says Davis, the Wood Mackenzie analyst, the industry would be taking action. Besides, so many customers are required to enter into arbitration before suing in court that it could take a long time for any big repercussions.

Over the past few years, a handful of people got rich off of Americans who were told they could simultaneously save money and save the planet. For example, Hayes Barnard, GoodLeap's founder and chairman, was named by Forbes as one of the 400 richest people in the world in 2023. The idea that we need to convince tens of thousands of Americans who can't afford it to put solar on their rooftops shifts the responsibility for addressing the climate crisis from the entities who could really make a difference—big companies and governments, for example—and onto individuals who are good targets for financing companies.

But despite the fact that there are many consumers like Mary Ann Jones, who are deep in debt and saddled with solar panels they don't want, the rooftop solar sales offensive continues. 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 non-working 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.

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# 7 Ways to Deal With Climate Despair

Angela Haupt is a health and wellness editor at TIME. She covers happiness and actionable ways to live well.

Forget climate anxiety: many people are in flat-out climate despair. 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 post-traumatic 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 of books

including *Emotional Resiliency in the Era of Climate Change: A Clinician's Guide*. "Things like, 'This makes so much sense, I hear you, I understand, let's talk about this more.'" Understand that it's not irrational to be full of worry, rage, fear, guilt, or grief when the planet's on fire.

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

## Talk about it.

Climate change tends to get the religion-and-politics treatment—people avoid talking about it, says Carol Bartels, a therapist based 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.

## Use your connections.

Research suggests that the lonelier and more socially isolated someone feels, the higher their levels of climate distress. Finding your people can help. Join local land-restoration efforts, get involved with community gardening, or stop by your favorite park's clean-up day. "A lot of the messaging we get is very individualist, like, 'Stop driving so much,'" says Jenni Silverstein, a licensed clinical social worker based in Santa Rosa, Calif., an area that's been ravaged by wildfires. "Those actions are valuable, but this is a collective situation, and collective responses are where we have power." We accomplish more with others than we do by ourselves, she adds.

If you're struggling to find a like-minded community, think about where you already have a foot in the door. If you work in the medical field, for example, ask your colleagues if they want to help start an initiative for reduced waste, Davenport suggests, or your department could oversee a new rooftop garden. "You have some influence—you're already part of a community," she says. "If each of us engaged in the places where we're already active, it would make a huge difference."

## Analyze your carbon footprint.

Some people cope with climate distress by distancing themselves from the problem—they ignore it, hoping it will go away, says Dr. Lise Van Susteren, a psychiatrist in Washington, D.C., who co-founded the Climate Psychiatry Alliance. It's more effective to "take the energy of all those emotions and redirect them into constructive action," she says, and that starts with analyzing your own carbon footprint. Online calculators can help you determine the total amount of greenhouse gases generated by your actions. It can also be helpful to simply take inventory of your habits, Van Susteren points out: Could you walk or bike instead of driving to work? What about cutting CO2 emissions by taking the train instead of an airplane? "Be honest with yourself so you can understand both the opportunities and challenges," she advises.

## Share your views.

This is no time for humility. Make sure everyone around you knows what you're doing to combat climate change, says Van Susteren. "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. She grows fruits and vegetables and shares them with her neighbors, for example—even the ones who don't care about climate-friendly lifestyles. If they ask about her garden, she explains how to get started. "Getting angry with people does zero good," she says. "It's important to keep the dialogue open. When we make enemies out of people who could be our allies, we're making a grave mistake."

## 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.'"

Middle-schoolers like to do things with their community, she adds, so consider banding together to raise money to install solar panels at the school. Older teens 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. For example, "'That's why we're not going to fly off here or fly out there; we're going to get a hybrid instead and drive through the Shenandoah and camp out and look at the stars.'" Brainstorm activities or changes that will help you all feel like you're making a difference.

## Get artsy.

Making art can help people regulate and work through their emotions, says Ariella Cook-Shonkoff, a psychotherapist based 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.

She often challenges clients to use colors, shapes, and lines to express how they’re feeling at that moment. You might be surprised at what comes out on the paper; art is a way of tapping into thoughts you didn’t even realize you had, Cook-Shonkoff says. As you study your finished work and try to make sense of its meaning, you might gain a deeper understanding of how you’re really feeling. “You can start to distill those emotions and be able to communicate them with other people,” she says. “There’s a lot of dialogue that can happen.”

## 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 the challenging feelings, she says, “because doing so can renew your sense of why it’s important to fight for this.”

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# The U.S. Public Has Never Been More Anti-War. Biden Isn't Taking Note

William Walldorf is a professor of politics and international affairs at Wake Forest and a visiting fellow at Defense Priorities. He is currently writing a book, *America's Forever Wars: Why So Long, Why End Now, What Comes Next*, focused on Syria, Iraq, and Afghanistan.

The U.S. is creeping toward war in the Middle East. A drone attack at a U.S. base on Sunday killed 3 American troops and injured 34 others. The attack—claimed by Islamic Resistance in Iraq, which opposes Washington's support for Israel—has prompted President Joe Biden to vow retaliation. His Administration is readying retaliatory strikes "over the course of several days" that mark a dangerous escalation that could spiral out of control.

Are Americans ready for war? Not at all.

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 divisions at home could 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 Korea and Vietnam. In the 2000s and 2010s, the big story was about Sept. 11 and defeating terrorism. This "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 Islamic State in the late 2010s, and no other transnational group group has taken their place. Americans have also grown tired of Middle East wars, like the one the U.S. is walking into now. 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 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 ceasefire in Israel's war on Gaza, not U.S. military action. Biden's efforts to rally the nation with eloquent statements haven't worked either (as other presidents 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 Biden's 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. Progressive Democrats are balking too. A new U.S. war today will create deep revulsion from these quarters. Revulsion will also come from Republicans, too. 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 brakes on or oppose military action.

This should all give U.S. decision-makers pause. As research shows, pursuing unpopular wars can create a lot of public resistance to wars that are 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 denies involvement in Sunday's attack. He should also reconsider further airstrikes against the Iran-backed Yemen's Houthis 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. 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 avoid the Red Sea and redeploy troops in Jordan, Syria, and Iraq to more secure regional bases further afield from Israel's ongoing war in Gaza. The U.S. regularly moves highly exposed troops for force protection.

Most crucially, Washington needs to push Israel to a ceasefire in Gaza. Its war is quickly becoming a regional war at odds with U.S. interests. A ceasefire will cool regional tensions, stop further

escalation, keep the U.S. homefront from exploding, and bring policy in line with true U.S. national security interests (most of which now lie outside the Middle East).

In short, adjust Middle East policy now before it’s too late.

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# Countries Are Proving It’s Possible to Boost the Economy While Cutting Emissions

Justin Worland is a senior correspondent at TIME in the Washington, D.C. bureau. He received Covering Climate Now's inaugural Climate Journalist of the Year award in 2022, among other awards. He is the Outrider Foundation fellow at TIME.

(*To get this story in your inbox, subscribe to the TIME CO2 Leadership Report newsletter here*.)

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 required. And, more energy equals more emissions.

That history has led to a persistent belief that dealing with climate change necessarily means accepting lower growth. Now, reality is challenging that assumption. In recent weeks, new analyses have pointed out that carbon emissions are diverging from economic growth in many countries.

In these columns, I often look more closely at specific businesses or policies. But at times it can be worth pausing to reflect on the macro trends at play and their significance for private sector climate action. And it’s hard to overstate that separating economic growth from emissions really is a game changer.

Most obviously, it matters in the energy sector. The demand picture is changing in ways that some observers would have thought impossible not too long ago, and investors and businesses would be wise to challenge their assumptions that the future will look like the past. But it’s relevant outside the energy sector and across the broader economy, too. The fact that carbon emissions can be

durably decoupled from economic growth is real-world proof that the green transition underway can endure without crushing the economy. Companies and investors who ignore this may be in for a rude awakening.

The prospect of advancing economic development while cutting emissions has been closely watched and debated for decades. Climate advocates insisted that clean energy could drive the same prosperity as fossil fuels; naysayers said cutting emissions would lead to economic decline. Data points—like a drop in emissions during recessionary periods—only served to reinforce the gloomy vision.

But in recent years the picture has changed rapidly. In January, the Rhodium Group, an independent research group, found that U.S. carbon emissions dropped slightly last year even as the economy grew thanks in large part due to the continued move away from coal power.

And this week an analysis from the International Energy Agency showed how this same trend is playing out to varying degrees across developed countries. GDP has grown while emissions drop in the U.S., Europe, Japan, Korea, Australia, and New Zealand. In other countries, including India and China, the speed at which emissions are increasing has slowed down even as economic growth continues much more rapidly. Each country has its own story, but the general contours remain the same: clean energy, energy efficiency, and the electrification of things that would have once been powered by fossil fuels.

This is definitely a positive climate development, but it goes without saying that this decoupling isn’t happening fast enough. The good news is that accelerating the decoupling would also create opportunities for new innovations across industries and technologies. Business just needs to seize them.

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# The Last Presidential Debate of 2024 May Have Already Happened

Philip Elliott is a senior correspondent at TIME, based in the Washington, D.C. bureau, where he covers national campaigns, elections, and government. He also writes TIME's politics newsletter, The D.C. Brief.

*This article is part of The D.C. Brief, TIME's politics newsletter. Sign up here to get stories like this sent to your inbox.*

In a typical election year, we would be seven months away from the first presidential debate of the parties' nominees. A date and location is 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 more likelier one is that the Texas event gets canceled, as will 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, between Republicans Nikki Haley and Florida Gov. Ron DeSantis. Trump, as he had done for every primary debate, skipped that one, refusing to share the same air as his lesser-polling GOP rivals. (Ratings for these primary events, it must be noted, were terrible without Trump to provide entertainment.)

And now we appear to be heading to a game of debate chicken, where neither of the likely candidates appears ready to state whether they are even willing to step on the same stage with their opponent later this year.

A spokeswoman for Biden's campaign said headquarters would have no comment about the debate schedule or have anything to add to this piece with fingerprints attached. 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.

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But chat with the coterie of advisers that claim to be shaping campaign strategy, and their responses reveal themselves as efforts to set expectations for gameplans that aren't set in stone. Put plainly: a Trump-Biden debate could still happen (though probably won't).

How did we get here? Even before Trump won a single vote or earned a lone delegate in his quest to return to the White House, the Republican National Committee told the longstanding bipartisan

group that has organized presidential debates for decades that it was not interested in their planning, *thank you very much*. 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, whose handling of the events in recent cycles have drawn GOP accusations of bias, and earned a unanimous rules change at an RNC meeting down in Memphis.

Then, a year later, Trump himself contradicted the central party's choice to accommodate his whims: "He and I have to definitely debate. That's what I love. The two of us have to debate," Trump said in June when asked about a head-to-head session against Biden. And a few months later, Trump half-joked in December that he wanted to make debates a centerpiece of his run: "How about 10 debates?"

If given a chance to take on Biden again, it might be too tempting for Trump, who is being counseled to limit his already wide exposure on multiple fronts—including legal—and let the movement he started power him back into office. The same may be the case for Biden, who harbors a visceral reaction to "the former guy," yet still 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, at least for now, the two men seemingly heading toward the nominations carry zero interest in messing with those fluid conditions just yet. And, given the talk coming from their advisers and allies, they may well already have boxed themselves out of the debate halls, which are already booked starting in mid-September.

Of course, neither Biden nor Trump is their party's nominee officially. But this deep into the primary calendar, there's no reason to think Trump will agree to share a stage with Haley—the last candidate standing between him and a third White House nomination in eight years. For her part, Haley declined chances to again debate DeSantis heading out of Iowa; DeSantis dropped out days later despite his own second-place finish in Iowa rather than face a third- or-worse finish in New Hampshire.

Biden has adopted a similar strategy against his primary rivals. True, Biden is the incumbent President while Trump is just acting like one. Biden has brushed off calls for primary debates, as is the norm for all modern incumbents since Gerald Ford. Incumbents of both parties have blown off intra-party challenges to a second term and have even canceled primaries altogether. Bill Clinton in 1996 won 34 of the 36 primaries that year, George W. Bush won 30 states while 10 states canceled theirs in 2004 and effectively ceded themselves to Bush alone on the ballots. When Barack Obama sought a second term, 10 states bailed on balloting altogether in the primaries; for Trump in 2020, in the midst of a pandemic, scores of states did the same for often-contradictory reasons.

While voters might be jarred by the prospect of the major party candidates never debating one another in person before Election Day, it's not entirely unheard of. Historically, though, it's been at the prerogative of the incumbent President as to whether any debates happened. Lyndon Johnson ignored the general-election debate season in 1964, just a year after he moved from the VP's suite to the Oval Office in the wake of John F. Kennedy's assassination a year earlier. Jimmy Carter in 1980 decided to miss the first two debates when independent candidate John Anderson was included; only 25% of voters told Gallup ahead of the debate that they agreed with Carter's decision, and he was moving out of the White House a few months later to make way for Ronald Reagan.

But challengers forcing the situation is not unprecedented, either. Richard Nixon skipped the debates in 1968 as a challenger and did the same in 1972 as an incumbent. (The memory of his disastrous 1960 debate against JFK clearly informed Nixon's media team.)

The history lessons are at the fingertips of party insiders looking to justify each side's seemingly inevitable plan to skip the debates. But none of that is very persuasive, nor are the arguments all that relevant to the range of issues being raised this cycle. Trump's defenders insist the real problem is the debate commission, which they say is beholden to corporate interests that hate Trump and would pick an unfair moderator. A Biden backer, meanwhile, suggested that allowing the President to share a stage with Trump is too much of a risk, noting that the first time they met to debate in 2020, Trump had tested positive for Covid-19 during the days leading up to that clash without disclosing it.

Ultimately, though, there is this reality: Americans are not particularly persuadable, at least not at this moment and when considering these two options. (Plenty of the 67% of Americans who don't like a Biden-Trump rematch could consider themselves Haley-curious if somehow she could wrestle the nomination away from Trump.) Partisans can pick their own versions of reality, right- and left-leaning networks can amplify messages their hosts find useful, local news has been hollowed out, limiting the extent to which voters are learning about how the outcome of the election will affect local communities. And that's even before disinformation creeps into the mix.

So while the top spinners at campaign headquarters are playing coy about debate stage-setting and pre-spin, it's clear it's partly out of uncertainty. The hired guns may have an idea about what's coming, but the bosses are their own brands of stubborn. Trump may find the drama too juicy to miss; Biden may want to prove he still has the Trump-slaying skill that gave him the top job 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.

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# The New COVID-19 Shot Is Surprisingly Effective Against the Latest Variant

Alice Park is a senior health correspondent at TIME. She covers the COVID-19 pandemic, new drug developments in cancer and Alzheimer's disease, mental health, HIV, CRISPR, and advances in gene therapy, among other issues in health and science. She also covers the Olympics, and co-chaired TIME's inaugural TIME 100 Health Summit in 2019. Her work has won awards from the New York Press Club, and recognition from the Deadline Club. In addition, she is the author of *The Stem Cell Hope: How Stem Cell Medicine Can Change Our Lives*.

The latest COVID-19 vaccine offers good protection against the currently dominant strain of the virus, according to a new report in the *MMWR*, a journal 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 data sets, the team of CDC scientists compared people’s COVID-19 test results to their self-reported vaccination status collected from September 2023 to mid-

January 2024. They found that the new vaccine was about 54% effective at protecting people from symptoms of COVID-19. In other words, the symptoms that prompted people to get tested were less likely to be due to COVID-19 and more likely to be something else among those who were vaccinated a week to four months before getting tested.

They further calculated that the vaccine was 49% effective at protecting against symptoms from the JN.1 variant, which now causes a majority of infections in the U.S.—even though the shot was designed to target a different version of the virus, the XBB.1.5 variant.

That part of the analysis was based on the fact that current SARS-CoV-2 lab tests look for three major genetic signatures of the virus, which most of the variants previously contained. JN.1, however, is missing one of them, which allows scientists to distinguish the JN.1 samples from those containing other variants.

**Read More**: *How COVID-19 Vaccines and Infections Are Tweaking Our Immunity*

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“This is, to my knowledge, the first vaccine effectiveness estimates available worldwide for JN.1,” says Ruth Link-Gelles, vaccine effectiveness program lead for COVID-19 and RSV at CDC, 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 visits, urgent care visits, and

hospitalizations in coming weeks, but says these initial data on protecting against infections 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,” she says. But any immunity, whether from vaccines or infections, wanes. Link-Gelles says additional data will show how long the protection lasts, especially against symptoms of the disease. (Previous research suggests that protection against severe illness is longer lasting.)

The results underscore public health advice to get vaccinated, especially 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, with 21% of people over age 18 receiving the latest vaccine and 41% of those over age 65,” says Dr. Manisha Patel, chief medical officer of CDC’s National Center for Infectious Respiratory Diseases. “These data show that really the time to get vaccinated is now.”

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# EPA Chief Michael Regan Wants to Advance Environmental Justice—With the Energy Industry's Help

Justin Worland is a senior correspondent at TIME in the Washington, D.C. bureau. He received Covering Climate Now's inaugural Climate Journalist of the Year award in 2022, among other awards. He is the Outrider Foundation fellow at TIME.

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."

**Read More:** *Sanitation Problems Have Plagued Black Residents of an Alabama County for Decades. The Government Might Finally Do Something About It*

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 misspent 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.

**Read More:** *Why Some Companies Are Doubling Down on Climate Action*

"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."

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.”

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**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 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.

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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.

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**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, hopscotching 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.

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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 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.”

**Read More:** *Before She Refused to Give Up Her Seat, Rosa Parks Had a Long History as a Voting Rights Activist*

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

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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.

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**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. TIME is solely responsible for all content.*

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# Menopause Is Finally Going Mainstream

Jamie Ducharme is a health correspondent at TIME. She covers the COVID-19 pandemic, Long COVID, mental health, vaping, psychedelics, and more. Her work for TIME has won awards from the Deadline Club, the New York Press Club, and the Newswomen's Club of New York. Additionally, she is the author of *Big Vape: The Incendiary Rise of Juul*, which was adapted for a forthcoming Netflix docuseries.

Kathryn Clancy wrote an entire book about menstrual cycles. But even she was surprised by some of the pre-menopausal symptoms she recently began 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 will experience symptoms including hot flashes, brain fog, and changes to mood, sleep, and sexual function as they approach menopause, defined as the point in time a year after their last period. But that transition, which typically

begins between the ages of 45 and 55, 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 post-menopausal women found that almost none of them had learned about menopause in school, and about half of them "did not feel informed at all" about the life stage.

But there are signs that menopause is finally going mainstream, as both the medical and business worlds get serious about the needs of the million-plus people in the U.S. who reach menopause every year. 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 wellness products targeted toward those going through the transition.

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

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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 only take place once the core issues change: how research is conducted and disseminated, how doctors are trained, and how seriously practitioners take women's pain.

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For Dr. Sharon Malone, chief medical advisor 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 of hormones that have dropped off—to increased risks of breast cancer and other serious conditions. After that, hormone therapy use plummeted in the U.S.

But, Malone says, there's a crucial caveat to the data: the study participants' average age was 63, older than that of a typical patient receiving hormone therapy for menopause. Later analyses, and statements from researchers involved in the study, clarified that the risk of breast cancer may have been overstated, particularly for younger people.

In a 2022 position statement, the North American Menopause Society said hormone therapy has more benefits than risks for women younger than 60 and 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.

There has also been debate about whether hormone therapy is linked to a heightened risk of dementia—a risk that Dr. Kejal Kantarci, a professor of radiology at the Mayo Clinic, says her research has not borne out, 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 later, they found no significant differences in cognitive function between the two groups. Other studies, however, have reached different conclusions.

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.”

Moayedi 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 after graduation, she, like many of her colleagues, worked in a clinic staffed by doctors finishing their medical training, which mostly served people who were uninsured or underinsured. Most of the patients Moayedi saw were lower-income pregnant people who qualified for Medicaid or older people on Medicare—which meant she hardly ever saw people who were going through menopause, despite training to become an ob-gyn.

Physicians who don’t specialize in obstetrics and gynecology likely know even less, she says, because women’s health is often (wrongly) considered “separate from the rest of medicine.” Moayedi says 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.

Another reason doctors are under-informed, Clancy says, is that most reproductive-science research looks at people at the peak of their childbearing years, which typically excludes adolescents and adults entering menopause. She says there’s a clear need for more studies—and more funding for studies—on people who fall outside

those main reproductive years. A bill introduced in 2022 called for $100 million for menopause research in 2023 and 2024, but it hasn't moved forward.

Even so, Malone says she's encouraged by the fact that menopause is receiving renewed attention—and that people are noticing the need for that course correction at all.

"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.'"

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# How Christopher Nolan Found Intimacy on a Grand Scale

Jeffrey Kluger is an editor at large at TIME. He covers space, climate, and science. He is the author of 12 books, including *Apollo 13*, which served as the basis for the 1995 film, and was nominated for an Emmy Award for TIME's series A Year in Space.

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. Half-way 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 biopic 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 characters 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."

**Read more:** *Oppenheimer Dazzles With Its Epic Story of a Complicated Patriot*

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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 back to Caltech where he taught theoretical physics until, in 1942, U.S. Army Col. Leslie Groves (played by Matt Damon) tapped him to lead the Manhattan Project.

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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 of Oppenheimer’s political leanings; to a post-war 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; as well as 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 naïveté 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 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 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."

**Read more:** *An Atomic Bomb History Expert on the 'Terrible Moral Dilemma' in Oppenheimer*

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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* to 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."

Hoytema and Nolan compartmentalize things even further, shooting some of the film—Strauss' story in particular—in black and white and most of the rest in color. "Strauss' 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 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 thousand 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 two and a half 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 eight billion of us. During the promotional tour for the movie, Nolan appeared on a panel that included Thomas Mason, the modern-day director of the Los Angeles National Laboratory, 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.”

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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 re-released 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 eye teeth 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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# How Sarah J. Maas Built a Sprawling Fantasy Multiverse

Megan McCluskey is a staff writer at TIME. She covers culture, focusing on horror, fantasy, and science fiction.

It’s 9:30 on a freezing Monday night in January and there’s a line stretching down the block outside of the Book Club Bar in the East Village of Manhattan. The occasion: a midnight release party for fantasy author Sarah J. Maas’ new book, *House of Flame and Shadow*, the third entry in her *Crescent City* series. The twist—there’s always a twist where Maas is concerned—Maas is on her

way to surprise the throng of almost exclusively female fans willing to wait in the cold for a chance to get their hands on her book the minute it becomes available.

For the occasion, Maas wears a glittering black Valentino skirt that calls to mind the motif of starlight that plays throughout her books. When she enters through the shop's front door around an hour later, fans are so busy sipping on themed drinks (like the sparkling purple White Raven's Special) and getting ready for a round of trivia that, at first, she goes relatively 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," a beaming Maas tells me as we catch up at the second stop of the evening, a Barnes & Noble where she will count down to midnight with an even bigger crowd (some of whom are decked out in full *Crescent City* cosplay, including flowing wigs and pointed fae ears). "There's such a positive energy.'"

If it sounds a little corny, it's hard to blame her for being caught up in the moment. After all, so much has led up to it: Maas has already sold more than 38 million copies of her books worldwide. She is a titan of fantasy fiction, with three best-selling series—*Throne of Glass*, *A Court of Thorns and Roses* (*ACOTAR*), and *Crescent City*—that are a driving force behind the meteoric rise of a whole new subcategory in the genre: romantasy, a portmanteau for "romantic fantasy" that has exploded in popularity over the past year. On BookTok, the reader-centric corner of TikTok that has become an increasingly powerful force in the publishing industry, Maas' novels are a viral phenomenon. The #ACOTAR hashtag alone boasts over 8.5 billion views on the app, with users touting everything from podcasts breaking down complex plot points to fitness challenges to tattoos to immersive in-person events inspired by the series. Demand for Maas' books has surged in response, with her publisher, Bloomsbury, announcing in October that sales of her work had increased by 79% in the first half of 2023—a boost

for the publishing house that's been described as akin to the *"Harry Potter* effect."

"My fans are a force of nature," Maas, 37, tells me as we talk over Zoom in the days leading up to the new book's release. "I wouldn't be where I am today without them."

She's reached a critical point both in her career and her writing—a direct crossover between two of her three distinct fantasy worlds that grounds her 15-plus books within one overarching multiverse. It's an ambitious move that feels like it could be the start of something totally new, like when Samuel L. Jackson showed up at the tail end of *Iron Man*, except these are book series with werewolves, angels, and preternaturally attractive fairies. It's a massive moment for Maas, and the publishing industry, and not without risk—her book is sure to be a best-selling blockbuster, but there's the ever looming question of what comes next. Can she continue to top her own success?

It's also something that the author's fervent fanbase has been greatly anticipating. As the clock inches closer to 12 on the eve of *House and Flame and Shadow*'s release, the excitement surrounding the expansion of the Maas-verse is palpable, and

seems to make one thing abundantly clear: as long as her readers have anything to say about it, Maas is here to stay.

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Amid the dystopian novel craze of the early 2010s, Maas' brand of fairy tale-inspired high fantasy was a boon for the ever-evolving young adult fiction scene (both *Throne of Glass* and *ACOTAR* were originally shelved as YA, despite controversy over the series' explicit sexual content). But after eight *Throne of Glass* books and four *ACOTAR* installments, Maas made her first true foray into adult fantasy (where she has since remained) with the 2020 publication of *Crescent City* book one, *House of Earth and Blood*. At that point, Maas had already decided the series' second book, 2022's *House of Sky and Breath*, would end with its human-fae hybrid heroine Bryce Quinlan making a magic-fueled jump into the world of *ACOTAR*.

"For years and years, I had sprinkled little hints throughout all of my books that they were part of a megaverse," Maas says. It proved a savvy move from a reader perspective, prompting deep rabbit holes of fan theorizing on Reddit and TikTok. "Then, when I started writing *Crescent City*, I had this idea out of the blue that, bam, this is the moment. I just felt like, 'I can f-cking do this. It's going to be amazing.'"

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, Maas began experiencing increasingly 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, both emotionally and creatively.”

She started going to therapy—which she describes as an ongoing process that’s changed her life—and poured her mental health journey into the most recent *ACOTAR* novel, which was published in 2021. “When I wrote *A Court of Silver Flames*, I was in the very 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.”

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Maas’ emotional vulnerability is reflected in her writing and is a big part of what keeps her readers coming back. Ahead of her arrival at Book Club Bar, I spend some time mingling with the

night's attendees, who are ready and willing to tell me all about why they love her work. "Sarah embraced the fact that Nesta was struggling and didn't shy away from that," one fan, 34-year old Briana Oliver, tells me of *A Court of Silver of Flames* (second only in her personal Maas ranking to perennial favorite *A Court of Mist and Fury*, book two in the *ACOTAR* series). "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 "Maassassins" (these days, a fanbase isn't a fanbase if it doesn't have a quippy name), are relative newcomers to her work. I hear from several fans who say they first picked up one of her books in the last few years, with some citing the initial months of the COVID-19 pandemic as the catalyst for the start of their Maas-verse journey. But there are recurring themes that run throughout their stories—that Maas reinvigorated their love for reading, or validated their affinity for the fantasy genre, or made them feel less alone. In a genre historically dominated by male authors, that's no small thing.

"I've read a lot of fantasy, most of it written by men," 29-year-old Jackie Montalvo tells me. "Men's writing doesn't always do it for me. So to read a series written by a woman and see the difference fills me with happiness and joy."

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Alongside her more recent devotees, Maas also has fans who were cheering her on long before she was a published author. In 2002, Maas, then 16, began uploading chapters of what would eventually become her debut novel, *Throne of Glass*, to the once-thriving online writing forum FictionPress. The story—a loose retelling of Disney's *Cinderella* in which the heroine is a deadly assassin rather than a damsel in distress—became one of the site's most popular submissions and earned Maas a significant following.

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

Her inclination toward the endless possibilities of the fantasy realm took root early. “I’d loved fairy tales since I was a kid. Then I discovered there were fairy tales for grown-ups” she says, naming authors Garth Nix and Robin McKinley as two of her early inspirations. “That opened something in my mind, heart, and soul. I realized I not only loved stories like that, I wanted to write stories like that.”

Under the working title of *Queen of Glass*, Maas went on to share rough drafts of what was later revised and turned into the first three books in her *Throne of Glass* series. With her FictionPress readers urging her on, she then pulled her work from the site in 2008 to pursue traditional publication. “That support kept me going,” she says. “I knew there was an audience out there for this book.”

Bloomsbury acquired *Throne of Glass* in 2010 and the first book in the series hit shelves in 2012. Two more 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, steamy romances, 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 the romance aspect of her romantasy tales, Maas doesn't skimp on what the genre's fans refer to as "spice." But her on-page love stories largely strike a chord because of the deep emotional connections that underlie her characters' physical attraction to each other. "Romance isn't usually my thing," 25-year-old Isabella Scala says of her preferred genres. "But these books are my escape."

Maas attributes her ability to craft male characters who appeal to so many of her female readers to the relationship she has with her husband, Josh, who she's been with since she was 18 and with whom she shares two children, Taran and 2-year-old Sloane. As Maas chats with me from her New York City home office, Josh briefly interrupts our video call to bring her a matcha latte. On release night, he's by her side smiling and fielding questions from fans throughout the evening.

"I'm really blessed to have someone who treats me like an equal and celebrates all my successes," she says. "The baseline standard is that these males respect and cheer for the women in their lives, and know that they're these incredible people who deserve to feel special and loved."

For all her focus on the way her books make her readers feel, not all of them have felt seen by the work. Over the years, 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 and trying to do my best," Maas says of the criticism,

noting that she now employs sensitivity readers to help ensure respectful representation. “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.”

Nearly 12 years—and many thousands of pages—into her career as a published author, the appetite Maas’ readers have for her work is seemingly insatiable. And the book world has taken note. In March 2023, Maas signed a new four-book deal with Bloomsbury on top of a pre-existing three-book contract that included *House of Flame and Shadow.* It would be shocking if announcements of more TV and film adaptations don’t follow in due course.

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 ever got the chance to talk to her.

Later, when Maas is surrounded by fans still reeling from her surprise arrival, it seems clear from the adoring looks on their faces that’s ultimately not what they’ve decided to share with (or demand

of) her. But it’s all in keeping with what defines this symbiotic relationship—they trust her to carry their favorite stories forward just as she trusts them to continue returning to her characters and 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.”

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# The Uncancellable Larry David

Judy Berman is the TV critic at TIME. Along with reviewing current television, she writes about the ways in which entertainment and pop culture intersect with our larger social and political realities. Her TIME essay on *Ted Lasso* and modern masculinity won a New York Press Club award in 2022.

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 an inattentive waiter whose mother just died. He muses to his permanent houseguest Leon Black (J.B. Smoove), who is Black, “I

wonder if a Black man going to Africa is like a Jew going to Israel," and berates Leon's aunt in her own home. 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 his manager Jeff Greene (Jeff Garlin) and, since Season 6, Leon as accomplices, he makes an art of causing offense. No one is safe from his trifling. Women, kids, people of color, members of the LGBTQ community, service workers, characters with disabilities, and adherents of every major religion and political orthodoxy have all been targets of his tirades.

The fictional Larry David wouldn't last a day in the public square ca. 2024. But the real Larry 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 *SNL* hires' podcasts and awards-show hosts' old jokes. Right-wing pundits sic their viewers on comedians who mock their pet causes. Onetime liberal heroes from Louis C.K. to Dave Chappelle have been knocked off their pedestals (though hardly intimidated into retirement) by reports of sexual misconduct and anti-trans humor, respectively.

David, by contrast, is more widely beloved—and cooler—than ever. Though he's a 76-year-old boomer with what the *Wall Street Journal* approvingly described as a "boring-dad look," his fandom spans generations.Magazines like *GQ* hail him 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. David had another viral moment this past week, when he playfully attacked Elmo from *Sesame Street* live on the *Today* show, then apologized to the puppet between fits of laughter. The incident played like a parody of bad celebrity behavior (see: Will Smith slapping Chris Rock at the Oscars). And really, is there anyone over age 5 who *can't* identify with the urge to throttle Elmo?

For 24 years, the critical distance and self-deprecating humility that separate comedian from character have saved him 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 (among other in-groups) and channel the unspeakable frustrations of viewers without endorsing actual bigotry or injustice. And in 2024, as the show airs its final episodes, the misanthropy *Curb* radiates has never felt more timely.

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Larry David the *Curb* antihero, tellingly referred to by the real David as "TV Larry," has been classified by more scholarly minds than mine as a quintessential *schlemiel*. The Yiddish term encompasses a range of pejorative types, from chump to fool to awkward bungler. What makes TV Larry more interesting than your average *schlemiel*, and his transgressions more fraught, is his success. Set for life thanks to residuals, the *Seinfeld* co-creator meanders around Los Angeles' wealthiest neighborhoods, playing golf, making scenes in restaurants, and taking on inessential

projects. One season it's a role in *The Producers* on Broadway; in another, he opens a "spite store" to compete with a coffee-shop owner who was rude to him.

Like a *Seinfeld* character, but more so because he has infinite free time, Larry obsesses over minutiae. He escalates every conflict, no matter how inappropriate. When Michael J. Fox (one of many celebrities who appear as themselves) shakes his head in Larry's direction, Larry demands to know if it was a gesture of disapproval or an involuntary "Parkinson shake." Despite being a know-it-all who's convinced 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 idly 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." Larry's friends, much like his foes, are hypocritical, bratty, priggish, lazy. He's just the same, except less tactful. In the misanthropic world of *Curb*, everyone is a pathologically annoying product of their own pettiness, ignorance, prejudices, and hangups—Larry more than most.

It is these warped egos that fuel the show's incandescent social pyrotechnics. In an episode often cited as the series' best, "Palestinian Chicken," Larry and Jeff frequent a Palestinian restaurant, where they feel uncomfortable as Jews, because they love its chicken. Larry is so desperate to maintain his good standing there that he gets into a fistfight with his suddenly pious friend, Marty Funkhouser (the late Bob Einstein), for showing up to lunch in a yarmulke. The altercation endears him to the establishment's sexy proprietor, Shara (Anne Bedian); soon they're in bed, getting off on calling each other offensive names. The episode ends with Larry standing frozen between two sides of a demonstration: a mob of Jews, led by an irate Susie, protesting the restaurant's new location next door to a Jewish deli and an equally angry Palestinian counterprotest led by Shara. Cue Luciano Michelini'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 political engagement. Jeff, Shara, and above all Larry are not mouthpieces for their people; they're just selfish pleasure seekers. True to David's *Seinfeld*-era "no hugging, no

learning” credo, not one character gleans an iota of wisdom from the conflict.

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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 rather than scripts, the actors are writing their own dialogue as cameras roll. In a 2004 *New Yorker* profile, David invoked a memorable rapper character named Krazee-Eyez Killa, played by 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 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 walked out of a *Curb* audition in 2015, in response to a joke, which never aired, that she deemed transphobic. Not every gag that makes the cut lands, either; an episode, “The Bare Midriff,” built around a woman who bares her flabby stomach at work, feels mean more than funny. Not every choice made in early seasons, such as Larry’s casual use of the N-word in “Krazee-Eyez Killa,” has aged well. Neither did the FTX Super Bowl ad David starred in less than a year before the company’s collapse. *Curb*’s cast includes actors who’ve faced reasonably justified public scrutiny, like Garlin, who left ABC’s *The Goldbergs* in 2021 amid accusations of on-set misconduct (which he disputed). Cheryl Hines plays Larry’s ex-wife but is in real life married to the conspiracy-minded presidential candidate Robert F. Kennedy Jr. (David had an amusingly frank response to Kennedy’s comment, last year, to the New York *Times* that the candidate felt “support and love” from Hines’ friends: “Yes love and support, but I’m not ‘supporting’ him.”)

If what redeems David’s diciest provocations is the genuineness of his commitment to equal-opportunity offense, with TV Larry bearing the brunt of real Larry’s jokes, then it’s his unsparingly bleak vision of society that gives his humor its thrilling edge. Rather than a tangle of systemic forces privileging and oppressing whole categories of person, *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 argue that individual psychology and structural inequality are inextricably connected. But the asylum metaphor 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 holier-than-thou 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—across generations and identities—his incorrigibly 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 his hermit-like existence, the utter delight he evidently took in social distancing, made him a guru of COVID lockdown. (He also correctly diagnosed the notoriously tone-deaf celebrity "Imagine" video that circulated early in the pandemic as "crazy.")

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, speaking in January about the end of *Curb*, put it: "People need Larry, although the feeling is not mutual." What could possibly be cooler?

**Correction, Feb. 5**

The original version of this story misstated the relationship between Leon and a character Larry David berates in *Curb*'s Season 12 premiere. She is Leon's aunt, not his mother.

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# The 10 Most Controversial Episodes of Curb Your Enthusiasm

At long last, the final season of *Curb Your Enthusiasm* has arrived. Since the HBO comedy premiered in 2000, creator and star Larry David has spent 110 episodes shocking and delighting us—often by exploring taboo subjects other writers might be too afraid to touch. Practically every episode involves Larry getting embroiled in some web of misunderstandings and bad-faith interpretations, offending people wherever he goes. It's a quality that rarely extends to real life, where David has mostly managed to avoid any concentrated backlash.

Perhaps in some ways, *Curb* resists traditional criticism when it comes to material aging poorly. Re-watching the show, it's easy to spot certain jokes that wouldn't be made today, if only out of fear of (often justifiable) pushback—but just as often, those edgy riffs hold up because they're grounded in Larry's very specific, skewed way of viewing a constantly changing culture. Besides, as in series like *It's Always Sunny in Philadelphia*, depiction doesn't always equal endorsement; even at his most reasonable, Larry never claims

to be a moral authority, and he almost always gets punished for his ignorance.

Still, in looking back at the last 11 seasons, some episodes still stand out as particularly bold—the ones that make me gasp even on a third or fourth re-watch. With season 12 starting on Feb. 4, let's take a look at 10 of them.

**Read more:** *The Uncancellable Larry David*

## Season 1, Episode 10: "The Group"

In future seasons of *Curb*, final episodes would usually serve to resolve the ongoing season-long storylines. But Season 1, the show's narratively loosest, climaxed with a particularly wild self-contained episode. When Larry's ex-girlfriend Lucy (Melanie Smith) asks him to attend an incest survivors group with her, he makes up his own false abuse story to set the other women at ease about his presence, embellishing with extraneous details about his uncle Leo. There's also a lot of dark comedy with another member (Laraine Newman) who lists off an endless litany of the abuses she endured—and, in the hysterical final scene, ends up publicly confronting the real, very much innocent uncle Leo.

## Season 3, Episode 8: "Krazee-Eyez Killa"

Most of this hilarious episode is about Larry accidentally getting involved in hiding the infidelities of his new friend: a rapper named Krazee-Eyez Killa (Chris Williams), who's engaged to Wanda Sykes. But the most jarring and obviously controversial element of this episode comes from a throwaway moment: David's use of the N-word, which he utters multiple times while befriending Krazee-Eyez Killa. There's no intended malice in his usage of the word; Larry is just repeating back Krazee-Eyez Killa's affectionate

epithet, referring to himself with the word. Still, it's hard to imagine this episode airing in 2024.

## Season 4, Episode 9: "The Survivor"

This personal favorite revolves around a vow renewal ceremony for Larry and Cheryl's 10th anniversary. Larry invites his father's friend, a Holocaust survivor, thinking he'll be able to bond with the rabbi's guest, a fellow survivor. But it turns out the rabbi's friend is then-29-year-old Colby Donaldson, who was (in real life as on *Curb*) on *the show Survivor*. At dinner, the two survivors get into a gloriously inappropriate argument over which of them suffered more.

## Season 5, Episode 4: "Kamikaze Bingo"

This one is a tad too on the nose for me with its kamikaze theme and narrative parallels, though many viewers praise it highly. After meeting a Japanese art dealer named Yoshi whose father made it out of World War II alive despite his role as a kamikaze pilot, Larry suggests his dad was a coward for surviving—leading a dishonored Yoshi to attempt (and fail) suicide himself. At the end of the episode, Yoshi's father gets his revenge during Larry's visit to the nursing home, yelling "Banzai!" as he charges toward Larry in his motorized chair.

## Season 5, Episode 7: "The Seder"

When Larry meets his new neighbor Rick (Rob Corddry), a *Seinfeld* fanatic who can help him with his golf swing, he thinks he's found a new friend. That's when he realizes Rick is a convicted sex offender. But he sticks to his guns and invites Rick to the Davids' Passover Seder, a decision that proves … controversial among the other neighbors, to put it lightly. Just look at how tightly Susie Greene (Susie Essman) clutches her young daughter Sammi

(Ashly Holloway) to her side when Larry introduces them to Rick. Larry displays an uncommon degree of empathy in sticking up for the guy, though a big part of that comes from enjoying his flattery. Unfortunately, when Sammi chokes during dinner, Rick is the only guest present who can save her with mouth-to-mouth, though the episode thankfully spares us an actual visual.

## Season 5, Episode 9: “The Korean Bookie”

When Jeff’s dog Oscar goes missing, Larry starts to suspect that his bookie, a Korean man who also works as a florist, is responsible. At the end, he finds out the bookie contributed a dish to a friend’s wedding. He connects the dots, assuming the missing pet became a key ingredient for the dish, then ruins the event by erroneously telling everyone they’re eating dog. Of course, Oscar turns out to have been alive the whole time, revealing the racism underlying David’s assumption.

## Season 6, Episode 8: “The N Word”

Oh yeah, the other episode where Larry says the N-word a bunch. This time, he overhears someone else say the word in the hospital bathroom, and makes the mistake of saying it himself while telling the story to other people. Multiple times, various Black characters overhear him: a doctor who accidentally shaves Jeff bald while distracted, and the family Larry took in after they were displaced by Hurricane Katrina. Season 6 is the first to feature breakout star J. B. Smoove as Leon Black, introducing him along with his Auntie Rae (Ellia English), his sister Loretta (Vivica A. Fox), and her two kids. But Larry’s use of the slur leads the Blacks to temporarily move in with Jeff instead, only to return after they get sick of his loud snoring.

## Season 7, Episode 1: “Funkhouser’s Crazy Sister”

This particularly amoral, dark episode revolves around the release of Marty Funkhouser's (Bob Einstein) sister Bam Bam (Catherine O'Hara) from a mental institution. First, Jeff betrays his wife by taking advantage of Bam Bam sexually. Then, to cover it up when Bam Bam reveals what he did during a dinner party at the Greenes', Jeff suggests she was making it all up. As a result, she gets carted off back to the mental institution despite her innocence. Even Larry looks disturbed by that one.

## Season 7, Episode 6: "The Bare Midriff"

While Jerry Seinfeld and Larry are working together on the *Seinfeld* reunion, they run into a problem with their assistant (Jillian Bell): she won't stop wearing shirts that expose her midriff. In some ways, they have a point—the assistant certainly isn't behaving or dressing professionally—but the extent of their kneejerk disgust clearly comes from a place of fatphobia. In the goofy final moments, though, that exposed midriff saves the day: Larry almost falls off a building, but manages to grab onto his assistant's belly instead, hanging precariously from her flesh.

## Season 8, Episode 3: "Palestinian Chicken"

This episode is a consensus favorite, and David recently named it as his own. After Larry and Jeff start visiting a new and acclaimed Palestinian chicken restaurant, he becomes an unlikely champion of the Palestinian community in L.A.—and an unlikely sexual partner to the restaurant's owner, a woman named Shara (Anne Bedian), who insults him in bed with anti-Semitic language (he likes it). His apparent shift in allegiance isolates his Jewish friends like Susie and Marty, and in an ending immortalized via GIF, Larry finds himself torn between communities. Though the episode is over a decade old, its relevance is certainly felt today, with many Americans at odds over the war in Gaza—though Larry's stance at

any given moment is clearly more motivated by chicken and sex than politics or human lives.

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