

From Anti-Government to Anti-Science: Why Conservatives Have Turned Against Science

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Empirical data do not support the conclusion of a crisis of public trust in science. They do support the conclusion of a crisis of conservative trust in science: polls show that American attitudes toward science are highly polarized along political lines. In this essay, we argue that conservative hostility toward science is rooted in conservative hostility toward government regulation of the marketplace, which has morphed in recent decades into conservative hostility to government, tout court. This distrust was cultivated by conservative business leaders for nearly a century, but took strong hold during the Reagan administration, largely in response to scientific evidence of environmental crises that invited governmental response. Thus, science – particularly environmental and public health science – became the target of conservative anti-regulatory attitudes. We argue that contemporary distrust of science is mostly collateral damage, a spillover from carefully orchestrated conservative distrust of government.

In 2020, scientists performed an astonishing feat. In less than one year, they produced not one but several safe and effective vaccines against the novel coronavirus, SARS-CoV-2. Yet, by the summer of 2021, barely half of all Americans had been fully vaccinated, even though free vaccines were widely available. By the autumn of 2021, ten thousand deaths following vaccination had been reported, and only six positively attributed to the vaccine, with more than four hundred and fifty million vaccine doses administered. This is a vaccine-death rate of 0.0000001 percent.¹ Yet public health officials still struggled to persuade the remaining Americans to get vaccinated.

Commentators have read this opposition as evidence of a crisis of public trust in science. Crisis-in-science narratives are widespread in both the scientific literature and in mass-media reporting, but the available evidence does not support the narrative.² The General Social Survey has long included a question about trust in the leaders of major institutions, and its polling shows that most Americans evince confidence in scientific institutions. In 2021, the largest share of re-

spondents answered that they had “a great deal of confidence,” rather than “only some” or “hardly any” confidence, in scientific institutions.³ In fact, scientific and medical leaders are generally second only to military leaders in public estimation.⁴ Moreover – and contrary to popular impression – overall trust in scientific leaders has not changed since the 1970s. A 2018 poll by Research!America found that more than 70 percent of Americans believe that government investments in science and technology pay off in the long run. A recent report by the American Academy of Arts and Sciences that analyzed the Research!America poll, as well as other data, found that most Americans view scientific research as beneficial, support an active role for science and scientists in public life, trust scientists to tell the truth and report findings accurately, and believe that scientists should play a major role in shaping public policy with respect to health and the environment.⁵

These findings do not support the conclusion of a crisis of public trust in science. However, available data do support the conclusion of a crisis of *conservative* trust in science. Reaction to scientific findings is highly polarized, with Republican voters and self-identified conservatives far more likely than Democrats and self-identified liberals to reject consensus scientific findings, particularly in the areas of climate change and COVID-19 response. In 2020, 88 percent of Democrats agreed with scientific findings that climate change was a major threat to the well-being of the United States, but only 31 percent of Republicans thought so.⁶ Similarly, 94 percent of Democrats believe that the documented increase in global temperature is due to human activities (again, consistent with the scientific consensus), but only 69 percent of Republicans do. When it comes to the question of whether the globe is warming at all, the proportion of Republicans accepting that conclusion has decreased since 2000, from about 75 percent to only about 55 percent, even as scientists have declared the fact of global warming to be “unequivocal.”⁷ These patterns cannot be linked in any obvious way to who holds the presidency. Democratic acceptance of climate science and concern about climate change increased during both the Obama and Trump administrations, but Republican views were largely unchanged until 2019, when extreme weather events – including the largest fire in California history – may have shifted some people’s views.⁸

There is a similar pattern in reactions to COVID-19. Most Democrats support mask-wearing; most Republicans do not.⁹ Almost all Democrats are or plan to be vaccinated; many Republicans are not vaccinated and do not plan to be. In counties that Joe Biden won in the 2020 presidential election, 52.8 percent of people were fully vaccinated by September 2021, but in counties that went to Donald Trump, the rate was 39.9 percent.¹⁰ At that time, nearly half of all unvaccinated people identified as Republicans or Republican-leaning. Republican confidence in science dropped during the Trump administration: a 2021 Pew survey found a striking decline in Republican confidence that “science has largely had a positive

effect on society,” from 70 percent in January 2019 to 54 percent in March 2021, with no similar decline among Democrats.¹¹

These patterns cannot be attributed to scientific illiteracy. Researchers have found that scientific literacy and educational attainment do not predict attitudes related to specific science controversies. In general, higher education correlates with positive perceptions of science, yet highly educated Republicans are *more* likely than less educated ones to reject climate science or think that scientists are exaggerating the threat.¹² People who reported in the spring of 2021 that they would “definitely not” get the COVID-19 vaccine – as compared with those planning to “wait and see” – were not so much uneducated as overwhelmingly Republican (67 percent versus 12 percent Democrat).¹³ During the summer and autumn of 2021, this partisan gap grew, even as the scientific evidence of vaccine safety and efficacy also grew. These patterns of partisan polarization confirm an argument we have already made elsewhere: the sources of science rejection lay not in the science itself, but in prior political and ideological beliefs and commitments.

In our 2010 book *Merchants of Doubt*, we showed that climate-change denial was grounded in conservative hostility toward “Big Government,” in particular the idea that government regulation of the marketplace – whether in response to environmental issues, public health crises, or other social problems – was a step on a slippery slope toward socialism.¹⁴ Also in 2010, Aaron M. McCright and Riley E. Dunlap proposed that American conservatives tended to reject “impact” sciences – those concerned with identifying environmental and health damages – but not “production” sciences, those that support business and industry.¹⁵ In other words, conservatives are not rejecting science *tout court*, but rejecting sciences that undergird or might be perceived to demonstrate the need for government action. The problem with the “impact” framing, however, is that any science can become an impact science if scientists discover something that points to the need for government regulation. The scientists who discovered the ozone hole and acid rain did not think of themselves as environmentalists, or even environmental scientists. But they discovered problems created by activities such as burning fossil fuels, driving cars, and using refrigerants that could only be fixed by measures to reduce or otherwise control those activities. The solutions involved national government regulations and international treaties. The “merchants of doubt” did not oppose these laws and treaties because they doubted the science; they doubted the science because they opposed these laws and treaties.

Citizens protesting COVID-19 mandates have not for the most part questioned the science but have carried placards equating mask mandates with government tyranny and denial of personal liberty.¹⁶ When they have questioned the science, it has often been in the context of questioning the basis for government mandates that they oppose on other grounds.

All of these challenges lead to the question: Why do American conservatives distrust government? It is not obvious that conservatives, who historically have

valorized order, authority, and respect for tradition, should necessarily distrust government. Classical liberal economists – including Adam Smith – recognized that governments serve essential functions, such as building infrastructure from which everyone benefits, and regulating banks, which, if left to their own devices, could destroy an economy.¹⁷ Conservatives have also historically recognized that taxation was required to enable governments to perform those functions. For most of the nineteenth century, business leaders in the United States supported public investment in infrastructure too. Infrastructure investment helped create the modern business corporation, as state and federal governments used corporations to carry out large infrastructure projects, such as the electrification of rural America, the interstate highway system, the aerospace industry, and later the space program.¹⁸

Admittedly, there is a long tradition in American culture of believing that the government that governs best governs least.¹⁹ But broadly held cultural attitudes do not explain partisan divides. To explain that, we need to look more closely at a factor that has received insufficient attention: the prolonged attack on government by business leaders and political conservatives in the mid-late twentieth century, and the way in which anti-government attitudes spilled over into anti-science attitudes in the Ronald Reagan administration.

Our story begins in the early twentieth century, when a group of conservative business leaders and economists shifted economic and political thinking in a radical way. They argued that any government action in the marketplace – even if well-intentioned – compromised the freedom of individuals to do as they pleased, and therefore put us on the road to totalitarianism. Political and economic freedom were “indivisible,” they insisted, and so a compromise to the latter, even when it addressed an obvious ill like child labor, was a threat to the former. Their arguments gained some traction when Franklin Roosevelt dramatically expanded the scale and authority of the federal government through the New Deal. But they took serious hold during the presidency of Ronald Reagan, who famously insisted in his first inaugural address that “government is not the solution to our problem; government is the problem.” Reagan initiated a pattern of Republican rejection of any science that pointed to the need for more government regulation rather than less. Today, hostility to the federal government is a touchstone for political conservatives, and contemporary conservative distrust of science is collateral damage, a spillover effect of distrust in government.

American citizens in the mid-twentieth century were largely suspicious of “Big Business,” saw the government as their ally, and believed that government should address the problems that unconstrained capitalism had created.²⁰ These included “social costs,” such as the deaths of workers in dangerous mines, mills, and factories, as well as market failures like bank runs and collapses. When thousands of

workers were killed every year in railroad accidents, boiler explosions, and mine collapses, the U.S government created Workers' Compensation and established standards for occupational safety.²¹ When banks failed during the Great Depression, the government created the Federal Deposit Insurance Corporation (FDIC) to protect people's savings. As massive pollution of the nation's waterways made the water undrinkable, and the air in Los Angeles grew so poisonous that people died from breathing it, the public demanded government standards for clean water and clean air. The Progressive Era, the New Deal, and 1960s environmentalism all reinforced the essential role of government in addressing problems created by economic and industrial activity.

But while politicians of both major parties were devising government remedies to the failures of the marketplace, a small coterie of businessmen and conservative intellectuals set to work to block those remedies. They did so in part by conventional means: lobbying Congress, making campaign contributions, running ad campaigns. But unifying these familiar activities was a bigger project to change the way Americans thought about "the marketplace" and the role of government in it. It was a project to build an American myth designed to undermine confidence in the very idea that government could remedy the failures of capitalism.

The myth had three parts. The first is that free enterprise is one of the foundations of American government, on par with representative democracy and the civic rights enshrined in the Bill of Rights. Government action in the marketplace, the myth insisted, threatens these foundations. The second is that any compromise to economic freedom risks political freedom. The third is the claim that government is not the solution to the country's problems; it is the cause of them. To generate prosperity, government has to get out of the way, "get off our backs," and let "the market do its magic."

Their efforts worked. By the end of the century, public opinion had flipped: many Americans now admired business leaders as "entrepreneurs" and "job creators," and believed that it made more sense to count on markets to solve problems than to engage government.²² Many Americans saw government as dead weight, taxation as unfair or even a form of theft, and chuckled knowingly when Reagan insisted that the scariest nine words in the English language were, "I'm from the government and I'm here to help."²³

The people involved in the project to change how Americans viewed government were diverse and dispersed, but they were also interconnected in important and sometimes startling ways. They included trade organizations and corporations; industrialists, writers, intellectuals, and economists; Protestant religious organizations beginning with Spiritual Mobilization in the late 1930s; and influential foundations and think tanks, like the Foundation for Economic Education, which drew personnel from the Chamber of Commerce and from Spiritual Mobilization.²⁴ There was not a conspiracy, but it was a network of people who knew

each other, supported each other intellectually and financially, and used this mutual support to expand their influence.

In this essay, we identify four instances when conservative businessmen and intellectuals purposefully advanced distrust in government to influence public opinion: a propaganda campaign launched in the 1920s by leaders in the electric industry to fight government involvement in electricity markets, and continued in the 1930s and 1940s by the National Association of Manufacturers to fight the New Deal; the promotion by private philanthropists of pro-market, anti-government ideology at the University of Chicago; the transmogrification of Ronald Reagan from New Deal Democrat to anti-government Republican under the influence of General Electric executives, and the launch of his political career with the financial support of those executives; and, crucially, the Reagan presidency, during which science became collateral damage of this anti-government ideology.

In the early twentieth century, electricity was mostly monopolized by the entrepreneurs whose for-profit business made the required machinery – famously, Thomas Edison and George Westinghouse – and the private utilities that exploited that machinery, including Edison Electric. Their companies and utilities were extraordinarily successful: Edison and Westinghouse became household names as electricity lit up cities and urban homes across the country.²⁵

Rural customers wanted electricity as much as their urban counterparts – and many observers argued that they needed it more – but electrical utilities had neglected them. In Pennsylvania in the 1920s, only about 10 percent of rural residents had access to an electricity grid.²⁶ Moreover, country folks who were fortunate enough to have access paid much higher rates – often double their urban counterparts’ – leaving many farmers unable to afford electricity even when it was offered.²⁷

Outside the United States, electricity was generally not viewed as a commodity like corn or pork bellies to be bought and sold at a profit, but as a public good like water or sewers that demanded government engagement to ensure equitable distribution. In Germany and France, electricity generation was developed as a public utility; in the United Kingdom, Parliament nationalized electricity generation.²⁸ The contrast in outcome was stark: by the 1920s, nearly 70 percent of Northern European farmers had electricity, but fewer than 10 percent of U.S. farmers did.²⁹

Against this backdrop, reformers such as Pennsylvania Governor Gifford Pinchot argued the need for greater government involvement in electricity markets. In response, the National Electric Light Association (NELA) launched a massive propaganda campaign that included, among other things, the hiring of academics to rewrite textbooks and develop curricula to promote pro-market, anti-government perspectives in emerging business schools and economics programs across the country. They also recruited experts to write reports “proving” that private elec-

tricity was cheaper than public electricity, despite available facts that showed otherwise.

NELA also promoted the larger argument that private property was the foundation of the American life, so any attempt to interfere with the private electricity industry threatened to undermine that way of life. Opinions to the contrary (they claimed) were unsound, socialistic, and fundamentally un-American.

When the Federal Trade Commission later investigated NELA's activities, they concluded that "private utilities, led by [their] industry trade group, the National Electric Light Association" had "mounted a large and sophisticated propaganda campaign that placed particular emphasis on making the case for private ownership to the press and in schools and universities."³⁰ Historian David Nye concurs: "The thousands of pages of testimony revealed a systematic covert attempt to shape opinion in favor of private utilities, in which half-truths and at times outright lies presented municipal utilities in a consistently bad light" and private utilities in a good light.³¹ Historian Ronald Kline calls the campaign "underhanded" and "unethical."³²

The Federal Trade Commission found that the "character and objective of these activities was fully recognized by NELA and its sponsors as propaganda," and that, in their internal correspondence, they "boasted that the 'public pays' the expense."³³ Ernest Gruening, a journalist at the time who later served as the territorial governor of Alaska and then as U.S. Senator, noted that when the presiding judge in the hearings asked if NELA had neglected any form of publicity, its Director of Public Information replied: "Only one, and that is sky-writing."³⁴

In the 1930s, as the Great Depression unfolded and the failures of the marketplace seemed to demand government response, the National Association of Manufacturers (NAM) reprised the NELA effort with a multimillion-dollar propaganda campaign to convince the American people that – despite all the apparent evidence to the contrary – American business and industry were working just fine. They argued that the real causes of the Great Depression were the unreasonable demands made by unionized labor, coupled with excessive government interference in the affairs of business and federal taxation that starved industry of the monies it needed to expand productive capacity.

Using print media, radio, and film, NAM ran a propaganda campaign that lasted into the 1940s to influence what newspapers had to say about the economy and American life, what teachers taught in the classroom, and what the American people came to believe about the federal government. NAM's president cited the famed tobacco industry strategist Edward Bernays as the sort of authority whose help NAM should (and later would) seek.³⁵ NAM sent pamphlets, leaflets, comic strips, and push surveys to newspaper editors and radio stations across the country, as well as materials to member companies to help them persuade their work-

ers not to unionize. They published magazines and organized lecture series aimed at teachers, clergy, and youth. They produced and distributed free of charge radio programs, short films, feature films, and “documentaries.” Like NELA, NAM also attempted to influence and censor textbooks.

The budget for these efforts matched their ambitions.³⁶ In 1937 alone, NAM spent over \$793,000 (the equivalent of about \$14 million today) on “public information” designed to work as integration propaganda.³⁷ These expenditures constituted more than 55 percent of the organization’s total income and continued to rise in subsequent years.³⁸ In 1946, its public relations budget was \$3 million.³⁹

NAM leaders had concluded that a strictly economic defense of business was insufficient to turn the American people against government and toward business. They needed to link their cause to something “all Americans held dear,” not free enterprise, but freedom itself: “Free enterprise [will not] be saved as the result of appeals in the name of free enterprise alone,” one NAM memo argued. “The public must be convinced that free enterprise is as much an indivisible part of our democracy and the source of as many blessings and benefits as are our other freedoms of speech, press, and religion.”⁴⁰ If they could “emphasize effectively the inseparability of ‘democracy’ and ‘free enterprise,’” enthusiasm and support for the former could carry the latter.⁴¹

This led to the insistence on the inseparability or indivisibility of democracy, political freedom, and free enterprise capitalism, what we have labeled the *indivisibility thesis*. “Representative political democracy, religious and social liberties and free enterprise are inseparable and with one lost, all are lost,” NAM declared in 1938.⁴² Economic freedom was one of the three legs in a tripod of freedom that kept America standing.⁴³ The New Deal, with its alphabet-soup of regulatory agencies, was a threat to the fabric of American life. Today, rural electrification; tomorrow, goodbye to the Bill of Rights.⁴⁴

NAM messages denied the federal government’s central role in the recovery from the Great Depression, attempting instead, in the words of historian Burton St. John III, to bind Americans “to the pre-Depression ideal of the supremacy of the markets.”⁴⁵ NAM would try to shift Americans’ view of government from a “friend” offering a “helping hand during the Depression” to something that stood in the way of prosperity.⁴⁶ Above all, NAM insisted, the people who should be trusted to guide the ship were the captains of American industry.⁴⁷ The villain in the American story was not Big Business but Big Government.⁴⁸

As the economy began to recover from the Great Depression, the NAM message began to take hold. In 1941, a NAM survey found that 71 percent of respondents believed the disappearance of the free enterprise system would harm their personal liberty.⁴⁹ Later that year, NAM polling found a majority of Americans believing that industry – not government – could best protect against the threats posed by the conflicts overseas.⁵⁰

Despite these exceptional efforts, and despite NAM's advancing steps toward their goal, some American businessmen thought NAM had not been aggressive enough in fighting government encroachment in the affairs of business. One was Harold Luhnow, a businessman from Missouri and head of the libertarian Volker Foundation. Another was Jasper Crane, a former DuPont executive. Crane felt that NAM focused too much on the details of commerce and not enough on the vision of the society they wanted to build and sustain. They were also too willing to compromise. The battle for a free society needed to be carried forward by "a cadre of intellectuals and businessmen that would be *absolutely committed to the market*."⁵¹ Historian Kim Phillips-Fein quotes Crane: "I have been wondering whether we ought to attempt to mobilize a few men who are *absolutely sound in the faith and will not compromise*, who are earnest in thinking, talking and writing for freedom, and who are resolved to uphold it at any personal sacrifice."⁵²

Crane and Luhnow decided to develop and fund a project to move the public conversation – and thereby American society – in the spirit of Karl Marx, but in the opposite direction. They despised Marx, but thought that he was correct about one thing: that the point of philosophy should not be to study the world, but to change it.⁵³ The successful outcome of their project would be an altered social contract, in a society that valorized and protected economic freedom above other considerations. But how would they do that? Marx had written a book that had changed the world; maybe they could find someone to do the same on their side. What they needed, then, was not just *a* book, but *the* book – "the New Testament of capitalism," the "bible" of free enterprise, written by a man who would take no intellectual prisoners.⁵⁴ Crane and Luhnow found him in the Austrian neoliberal economist Fredrich von Hayek.

Hayek's manifesto, *The Road to Serfdom*, had been published in 1944, and its argument was the indivisibility thesis: that any compromise to economic freedom threatened political freedom. For Hayek, there could be no such thing as democratic socialism or even social democracy, because the "unforeseen but inevitable consequences of socialist planning is to create a state of affairs in which if the policy is to be pursued, totalitarian forces will get the upper hand."⁵⁵ In 1945, Luhnow funded Hayek's American book tour, but wanted much more than just a book tour. He wanted social change. But he worried that Hayek's approach was too intellectual and too European. The best way to get the book that America needed, Luhnow and Crane concluded, was to finance a project at a reputable American institution where the arguments could be developed in an American register with an American audience in mind. Their chosen institution was the University of Chicago. The operation would be named the "Free Market Project."

Over the objections of the economics department, Luhnow provided the money for Hayek to be hired, and also funded the launch of the Free Market Project, bringing together several economists who shared their vision. One of these

like-minded economists was George Stigler, who would produce an edited version of Adam Smith's *The Wealth of Nations* that expunged nearly all of Smith's caveats, including his discussion of the need for bank regulation, for adequate wages for workers, and for taxation for public goods, like roads and bridges. Another was Aaron Director, who developed a project making the case against anti-trust enforcement.⁵⁶ A third was Milton Friedman.

Hayek never wrote the American *Road to Serfdom*, but Milton Friedman did. His best-selling book *Capitalism and Freedom* laid out the indivisibility thesis in language that any educated person could understand, and achieved Luhn's goal of accessibility and impact. First published in 1962, it would sell over half a million copies, see numerous editions, be translated into eighteen languages, and be adapted into a ten-part PBS television series, *Free to Choose*. The book appears on virtually every list of the top 100 or even the top 10 books by conservatives. It was named a top 100 book by *Time* magazine, *The Times Literary Supplement*, and others. Friedman would become not only the most influential economist of his generation, but one of the most influential public intellectuals. In 1966, he became a regular columnist at *Newsweek*, and went on to write hundreds of opinion pieces for mass media publications.⁵⁷ In the 1970s, he was a frequent speaker at the UK Institute of Economic Affairs, credited with shaping Margaret Thatcher's policies, which in turn influenced Ronald Reagan. Friedman became an advisor to both, as well as to Chilean economists associated with the dictator Augusto Pinochet.⁵⁸ President Reagan awarded Friedman both the National Medal of Science and the National Medal of Freedom.

Reagan raised Friedman's star, but the president had in fact developed his anti-government ideas long before he ever met Friedman. Most Americans know that Reagan was an actor before he became a politician, but they may not know that his flagging acting career was revived by the General Electric Corporation (GE), who gave him a job that was crucial both to his professional transformation from actor to politician and to his political transformation from New Deal Democrat to anti-government Republican.

By the 1960s, corporate leaders, neoliberal economists, libertarian intellectuals, and market fundamentalists had for more than thirty years been selling a story in which businessmen were the heroes and government the villain. It was a story in which markets were efficient; individual enterprise was all that was needed to succeed; and racism, discrimination, corporate violence, monopolistic practices, and dangerous working conditions played only an incidental role. It was a story in which "economic freedom" meant the freedom of business owners to run their shops as they saw fit, even if that included anti-competitive practices or imposing environmental costs on surrounding communities. Above all, it was a story in which political and economic freedom were in-

divisible, so any government action in the marketplace – even if well-intentioned and seemingly warranted – would put us on the slippery slope to socialism, or worse. In effect, American manufacturers had manufactured a myth.

But despite the hard sell, for the most part, Americans weren't buying. FDR was the longest serving president in American history, elected and reelected four times, and in 1948, his vice president, Harry Truman, had won reelection in his own right. When Dwight Eisenhower was elected in 1952 – the first Republican president since Herbert Hoover – it was as a centrist seeking to avoid excessive power concentration in either state or private hands.⁵⁹ Eisenhower not only supported Social Security, but expanded it. With respect to the New Deal, he famously wrote that “should any political party attempt to abolish social security, unemployment insurance, and eliminate labor laws and farm programs, you would not hear of that party again. . . . There is a tiny splinter group, of course, that believes you can do these things,” but “their number is negligible and they are stupid.”⁶⁰ Barry Goldwater was one of that small number, and in 1964, he had suffered a crushing defeat.⁶¹ Ordinary Americans – especially working- and middle-class Americans – saw the government as their ally because, for most of the twentieth century, it was.⁶²

Twenty years later, however, the picture was different, and the person who did the most to change it was Ronald Reagan. The “Gipper” flipped the national narrative from one in which government existed to address the needs of the people to one in which government blocked people's aspirations. In the 1920s, Americans had hated Big Business. Reagan would persuade them to hate Big Government. Promising to “get the government off our backs,” Reagan encouraged Americans to see government as malevolent, not benevolent.⁶³ “The nine most terrifying words in the English language,” he snickered, “are *I'm from the government and I'm here to help*.”⁶⁴ The solution was to shrink government, cut it down to size, “starve the beast,” and let the market do its “magic.”⁶⁵

Reagan would ask Americans to love the market and loathe the government, but – and perhaps this was the key to his success – he didn't frame it as a tale of loathing. He framed it as a love story: loving freedom, loving capitalism.⁶⁶ The late historian Michel-Rolph Trouillot suggested that Reagan's brilliance lay in his capacity “to inscribe his presidency into a prepackaged narrative about the United States.”⁶⁷ Trouillot was right: it had been packaged by NEA, NAM, and Milton Friedman, and Reagan learned it when he worked for GE.⁶⁸

Reagan had joined General Electric in the 1950s to jump-start both the company's faltering efforts at television production and his own faltering acting career.⁶⁹ As the host of the popular weekly television program *GE Theatre*, Reagan created one of the most successful personas of the century: himself. It was not merely a matter of fashioning an image, but a radical reconstruction from New Deal Democrat and president of a major union (the Screen Actors Guild) to

anti-union, pro-management, right-wing Republican. Moreover, while the American people knew Reagan as the host of *GE Theatre*, that was only half of his job. The other half was as the public face of a massive PR program designed to convince GE's workers and citizens in their communities of the greatness of American capitalism and the threat represented by Big Government.

Reagan's mentor in this work was GE executive Lemuel Boulware, whose anti-union tactics were so extreme they earned a name: Boulwarism. (They also earned GE several indictments for federal labor law violations.) Boulware's politics became Reagan's politics, and GE's vision Reagan's vision.⁷⁰ Reagan's political fortunes were transformed as well, as he emerged from GE with powerful backers in corporate America who helped him launch his political career.

In later years, Reagan would assemble a forceful coalition of business leaders, social conservatives, evangelical Protestants, and disaffected blue-collar Democrats that would propel him to the presidency, but this was not the coalition that launched his political career. Reagan's 1960s "kitchen cabinet" was a handful of wealthy business executives assembled by a group of GE executives, including Boulware.⁷¹ Reagan's victory in his bid to become governor of California was in many ways surprising: few people at that time had launched a successful career in politics by running first for an office as high as governor of one of America's largest states. But while Reagan may have been untested in public office, his message and delivery had been extensively tested in his years at GE, which had given him a public platform, a political ideology, and the opportunity to refine both the message and its delivery in the thousands of speeches that he had given across the country before he ever ran for office.

As governor of California, Reagan was no liberal, but neither was he hostile to science. As president, however, he faced a conundrum: the emerging science of a set of issues – acid rain, the ozone hole, and man-made climate change – that suggested the need for firm and timely federal action to avoid serious, perhaps even catastrophic, damage. Reagan's answer was to question the science.

One clear example involves acid rain. In the months before Reagan took office, scientists had concluded that air pollution caused acid rain, and the Carter administration was moving toward a treaty with Canada that would severely limit air pollution from American power plants. But when Reagan took office, he reversed course, introducing the idea that the science was not sufficient to justify a strong regulatory response, much less a treaty. The administration did not merely cast doubt on the existing science, it also interfered in the scientific peer review process. In 1984, presidential science advisor George Keyworth intervened in the final stages of a scientific review, instructing the lead author to make changes that made the science seem less certain than the scientific panel had concluded it was; the administration then used this to justify inaction.⁷² When it came to the ozone

hole, Reagan eventually signed the Montreal Protocol, the international treaty that controlled ozone-destroying chemicals, but not before some of his advisors and cabinet members disputed the science behind stratospheric ozone depletion; later, they would question the emerging evidence of global warming.

Reagan's successor, George H.W. Bush, tried to balance the demands of environmental protection and the marketplace. He championed the 1990 Clean Air Act amendments that instituted a market mechanism – emissions trading – to control the pollution that was causing acid rain. He also established the U.S. Global Climate Research program to improve scientific understanding of climate change, and agreed to a complete ban on the chemicals responsible for stratospheric ozone depletion. But Bush was a one-term president, in part because his moderate and fact-based positions were out of step with an emerging Republican ideology that took no prisoners when it came to climate change. Under Reagan, a precedent had been established: to question science that illuminated any problem that invited (or worse, seemed to demand) government action.

Conservative resistance to scientific findings emerged originally in environmental and public health domains, where markets had *created* the problems, like diseases caused by tobacco use, acid rain caused by electric power generation, or the ozone hole caused by chemicals used in refrigeration and propellants.⁷³ But it would be wrong to say that the trigger was “regulatory” science or impact science, because much of the relevant science emerged in the context of basic research, such as the work in forest ecology and soil science that established the problem of acid precipitation.⁷⁴ Some of it emerged in the context of applied science that conservatives supported, such as the work in the 1950s and 1960s on weather modification – much of it funded by the U.S. military – that contributed to predicting global warming. But in time, animus toward specific scientific findings spilled over into animus toward science, generally. One telling example involves the Big Bang theory, which Christian conservatives once welcomed, as it seemed (in contrast to steady state theories) to affirm that the universe had a beginning. But then Christian conservatives turned against the theory.⁷⁵ From the 1990s onwards, to be an American conservative increasingly meant being distrustful of science.

By the 2020s, Republican leaders were rejecting factual evidence on a host of problems that pointed to the need for the government to act in ways that could infringe upon business or personal liberty – from gun control and the opioid crisis to the safety of vaccination and efficacy of mask mandates. They were also attacking scientists – particularly those engaged in climate research – subjecting them to hostile congressional inquiries, Freedom of Information Act requests, and even subpoenas. Conservative activists used lawsuits to try to obtain scientists' correspondence, hoping to catch them in embarrassing statements.⁷⁶ Climate scientists were also subject to attacks in conservative media. The message was not that

particular policy approaches to climate change were undesirable, but that climate scientists were untrustworthy.⁷⁷

What began as an ideological argument had become a cultural pathology. A commitment to “limited government” caused conservative leaders not merely to drag their feet on responses to climate change, health care, opioid addiction, and other problems that the private sector has been unable to solve – and that are too big for individuals or even the states to fix on their own – it also led them to attack scientific findings related to these issues, and the scientists responsible for those findings. And, when COVID-19 hit in 2019, it caused conservative leaders to encourage their constituents to distrust science and defy scientists’ guidance, even when their lives were at stake.

In April 2020, Dr. Anthony Fauci called for a nationwide stay-at-home order to slow the spread of COVID-19. “I don’t understand why that’s not happening,” said the country’s leading expert on infectious disease, although he did acknowledge “the Trump administration’s hesitancy to encroach upon local authorities.”⁷⁸ Many Americans shared the doctor’s confusion. Why wouldn’t President Trump use his authority to issue a national stay-at-home order? Or use his influence to persuade governors to do so? Above all, why did the president downplay the threat and refuse to act on the advice of his experts while there was still a chance of containing the virus and saving hundreds of thousands of American lives?⁷⁹

To many people, the president’s actions were inexplicable. To us, they seemed all too familiar. Trump’s response was, in fact, almost inevitable given three things we know about his administration and the policies it represented: a habit of hostility toward science and other forms of expertise, a worldview that prioritizes the economy above all else, and the adherence to the ideology of “limited government” that has made conservatives belligerent toward the federal government even when they are running it. The president’s response to COVID-19 was consistent with the worldview that American business conservatives began to develop a century ago and that, with persistent repetition, took root in conservative circles. Three years ago, few observers would have viewed virology or immunology as impact sciences, yet both have come under attack during the COVID-19 pandemic for the evidence they have offered on the benefits of social distancing, masking, and vaccination mandates.

Distrust is a complex social and psychological problem, and is unlikely to be explained by any single factor. But the distinctly partisan pattern of American distrust in science suggests that its origins are likely to lie more in political beliefs and commitments than in anything that scientists themselves have done or failed to do. To be sure, poor communication by scientists does not help their cause, but – absent other factors – missteps by scientists would likely generate skepticism across the political spectrum rather than in one part of it.

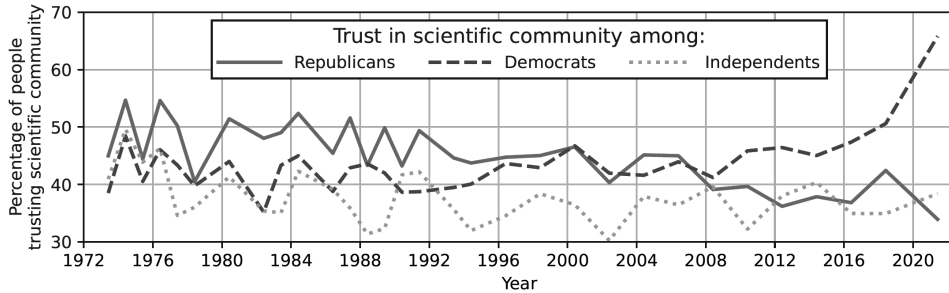
Evidence compiled by sociologist Gordon Gauchat in 2012 confirms that conservative trust in science has dropped dramatically since the 1980s, as our argument suggests it should have. In 1974, there was no statistically significant difference between liberals and conservatives in their level of trust in science. In the 2000s, the gap between liberal and conservative trust in science had reached 14.1 percentage points, according to General Social Survey data captured in Figure 1. (Moderates began with the lowest levels, ending the period with levels comparable to conservatives, a finding for which we have no ready explanation.) By the 2010s, conservatives' trust in science had steadily declined, while liberals' trust remained roughly constant. The most recent data, for 2021, suggest a further dramatic increase in the partisan divide, with the gap widening to 33.6 percentage points. The data collection methodology changed in this plague year, and it represents one year, not a decadal average, so the result is not directly comparable to the older data. But the 2021 result is similar to the dramatic drop in the Republican belief that science was generally good for society, which Pew Research Center found in their polls the same year.⁸⁰

This pattern, Gauchat notes, is long-term rather than abrupt, and cannot be pinned on who held the White House at any interval during this period. It is also distinctive in comparison to trust in other secular institutions. He finds that “the politicization patterns observed for science are unique and do not reflect a parallel decline across institutions.”⁸¹

Gauchat calls this divergence of trust in science “a breakdown of this postwar consensus [about science] along sociopolitical lines.”⁸² He interprets this breakdown in ideological terms: conservatives turned against science while liberals did not. Gauchat concludes that the source of this divergence is “empirically underdetermined,” but that “conservatives' distrust is [likely] attributable to the . . . increased connection between scientific knowledge and regulatory regimes in the United States, the latter of which conservatives generally oppose.”⁸³ A 2021 study by sociologist John J. Lee expanding on Gauchat's work examines the matter in terms of party affiliation, finding that Republican trust in science has decreased, and Democratic trust has increased. Lee attributes this to elite messaging such as the anti-government propaganda campaign we have summarized here.⁸⁴

The General Social Survey asks respondents about their level of confidence in major American institutions, including science. Examining the survey data, we see that there is both a major ideological shift and a partisan change of attitudes toward science since the 1970s, and that the substantive changes have mostly occurred since the 1990s. In the 1970s, there was little difference in the response between liberals and conservatives: on average, 45 percent of all respondents had a great deal of confidence in science; the figure for liberals was 47 percent and for conservatives it was 45 percent. To the extent that there was a partisan divide at that time, Republicans expressed *more* confidence in the scientific communi-

Figure 1
Level of Confidence in Science by Political Party, 1974–2021



Source: The General Social Survey, the latest conducted from December 1, 2020–May 3, 2021. Auditors asked, “I am going to name some institutions in this country. As far as the people running these institutions are concerned, would you say you have a great deal of confidence, only some confidence, or hardly any confidence at all in them?” Figure by Alexander Kaurov.

ty than Democrats did. This began to change, however, in the 1990s. In 1995, 48 percent of liberal respondents expressed a great deal of confidence in science versus only 40 percent of conservatives. Figure 1 shows that this ideological shift was followed by a partisan shift: between 2000 and 2008, Republicans became less likely to trust science than Democrats. Figure 1 also shows that the shift in Republicans’ attitudes away from trusting science precedes a shift toward trusting science among Democrats. The decreasing Republican confidence in the scientific community begins in the 1990s, but increasing Democratic confidence does not get underway until the 2010s, with a dramatic increase after the election of Donald Trump. This suggests that Democrats reacted to President Trump’s anti-science positions by further embracing science.

Sociologists Timothy L. O’Brien and Shiri Noy argue that the partisan divide over science can be traced to the partisan divide in religious identity that has grown in parallel.⁸⁵ As the Republican Party has become identified with conservative religiosity – in particular, evangelical Protestantism – religious and political skepticism of science have become mutually constitutive and self-reinforcing. Meanwhile, individuals who are comfortable with secularism, and thus secular science, concentrate in the Democratic Party.⁸⁶ The process of party-sorting along religious lines has helped turned an ideological divide over science into a partisan one.

We agree but underscore that the alignment of conservative Protestant religious identity with free-market political ideology is no coincidence. The business leaders and intellectuals we have discussed here worked to create this align-

ment. From the 1940s to the 1990s, they worked to embed free-market economic thought into the curricula of Protestant seminaries, and placed it in the hands of individual ministers and lay readers, so that *market* fundamentalism became part of the identity of American *religious* fundamentalism. The rise of market fundamentalism in America is directly tied to the rise of conservative religion to political power in the late twentieth century, and vice versa.⁸⁷ The timing of the observed changes in public opinion are consistent with this interpretation.

Because regulatory regimes are located in secular government – and, in the United States, typically in the federal government – conservatives encouraged by dominant ideologies of the past half-century express broad animus toward “the government,” and not just toward specific regulatory regimes or policy instruments. Yet this does not necessarily imply animus toward science. After all, it is logically possible to accept scientific claims – for example, about the threat of climate change or the efficacy of masking – and still believe that the government should not do anything about it. And it is logically possible to accept the reality of problems identified by scientists, and accept market-based mechanisms to address them, as President George H.W. Bush did with acid rain. Thus, conservative distrust of science requires additional explanation, and we find that explanation in the efforts of American business leaders to turn Americans against government regulations, efforts that met success in the Reagan administration and have informed conservative thinking since. In short, contemporary conservative distrust of science is not really about science. It is collateral damage, a spillover effect of distrust in government. Therefore, to rebuild trust in science, we cannot simply defend science as an enterprise or demonstrate the integrity of scientists. We must address – and counter – prevailing conservative narratives of a government that smothers prosperity and threatens the liberties of its people, when it is in fact working to sustain and equitably distribute prosperity and protect its people from grave threats like climate change.

AUTHORS' NOTE

This essay is derived from the authors' forthcoming book, *The Big Myth: How American Business Taught Us to Loathe the Government and Love the Free Market* (New York: Bloomsbury Publishing, 2023).

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- ⁶⁵ Howard Gleckman notes that the focus on tax cuts was both to stimulate the economy through supply-side economics, but also to try to shrink the federal government by denying it money. He points out that the latter aspiration has failed, but the former of course failed, too. Howard Gleckman, “Starving the Beast? The Tax Cuts and Jobs Act Seem to Be Feeding It,” *Forbes*, February 6, 2018, <https://www.forbes.com/sites/beltway/2018/02/06/starving-the-beast-the-tax-cuts-and-jobs-act-seems-to-be-feeding-it>.
- ⁶⁶ Mariana Mazzucato, *The Entrepreneurial State: Debunking Public vs. Private Sector Myths* (New York: Anthem Press, 2013).
- ⁶⁷ Michel-Rolph Trouillot, *Silencing the Past: Power and the Production of History* (Boston: Beacon Press, 1995), 26, paraphrasing William F. Lewis, “Telling America’s Story: Narrative Form and the Reagan Presidency,” *Quarterly Journal of Speech* 73 (3) (1987): 280–302.
- ⁶⁸ Bruce L. R. Smith and James D. Carroll, “Reagan and the New Deal: Repeal or Replay?” *PS: Political Science & Politics* 14 (4) (2013), 765.
- ⁶⁹ Tim Raphael, “The Body Electric: GE, TV, and the Reagan Brand,” *TDR: The Drama Review* 53 (2) (2009): 113–138, <https://doi.org/10.1162/dram.2009.53.2.113>; Thomas W. Evans, *The Education of Ronald Reagan: The General Electric Years and the Untold Story of His Conversion to Conservatism* (New York: Columbia University Press, 2008). On Reagan’s faltering acting career before he went to GE, see Timothy Raphael, *The President Electric: Ronald Reagan and the Politics of Performance* (Ann Arbor: University of Michigan Press, 2009), 160.
- ⁷⁰ Thomas W. Evans stresses that Reagan was never implicated in these prosecutions, but Reagan did work for GE during the period when the activities under investigation took place, and he was GE’s leading public spokesman promoting the company’s vision at the time. Evans, *The Education of Ronald Reagan*, 161–162. See also Myron W. Watkins, “Electrical Equipment Antitrust Cases—Their Implications for Government and for Business,” *University of Chicago Law Review* 29 (1) (1961): 97–110.
- ⁷¹ The two other key figures were Ralph Cordiner and J. J. Wuerthner. The latter would later direct Volunteers for Nixon-Agnew. Memorandum, “Wuerthner to Citizen’s Staff, RNC Staff, New York Staffs, Citizen’s Field Operation and GOP Leaders Re: Progress Report on Enlisting 5 Million Volunteers, with Attachments. 5 Pages,” September 25, 1968, box 36, folder 7, Richard Nixon Presidential Library White House Special Files Collection, Yorba Linda, California.
- ⁷² Oreskes and Conway, *Merchants of Doubt*, 100.

- ⁷³ Chris Mooney, *The Republican War on Science* (New York: Basic Books, 2005).
- ⁷⁴ Oreskes and Conway, *Merchants of Doubt*, especially discussion in chapter four.
- ⁷⁵ See, for example, “Big Bang,” Answers in Genesis, <https://answersingenesis.org/big-bang>.
- ⁷⁶ See, for example, the case against Michael Mann and the University of Virginia. Michael Halpern, “Breaking: Climate Change Scientist Michael Mann (and Scientific Inquiry) Win in Virginia FOIA Case,” *The Equation: Union of Concerned Scientists*, September 17, 2022, <https://blog.ucsusa.org/michael-halpern/breaking-climate-change-scientist-michael-mann-and-scientific-inquiry-win-in-virginia-foia-case>. Mann continues to be involved in a defamation suit against the pro-market, anti-regulatory Competitive Enterprise Institute. *Mann v. Competitive Enterprise Institute*, 2012 CA 008263 B (D.C. Super Ct. 2012), <http://climatecasechart.com/case/mann-v-competitive-enterprise-institute>.
- ⁷⁷ Oliver Milman, “Climate Scientists Face Harassment, Threats and Fears of ‘McCarthyist Attacks,’” *The Guardian*, February 22, 2017, <https://www.theguardian.com/environment/2017/feb/22/climate-change-science-attacks-threats-trump>; “How the Fossil Fuel Industry Harassed Climate Scientist Michael Mann,” Union of Concerned Scientists, October 12, 2017, <https://www.ucsusa.org/resources/how-fossil-fuel-industry-harassed-climate-scientist-michael-mann>; and Renee Cho, “Perspectives of Scientists Who Become Targets: Katharine Hayhoe,” Climate Science Legal Defense Fund: Columbia University, August 10, 2017, <https://www.csldf.org/2017/08/10/perspectives-scientists-become-targets-katharine-hayhoe>. See also Joby Warrick, “Congressional Skeptic on Global Warming Demands Records from U.S. Climate Scientists,” *The Washington Post*, October 23, 2015, <https://www.washingtonpost.com/news/energy-environment/wp/2015/10/23/congressional-skeptic-on-global-warming-demands-records-from-u-s-climate-scientists/>; Lauren Kurtz, “NOAA Refuses to Produce Internal Communications Subpoenaed by House Science Committee,” Climate Law Blog, Sabine Center for Climate Law, October 30, 2015, <http://blogs.law.columbia.edu/climatechange/2015/10/30/noaa-refuses-to-produce-internal-communications-to-house-science-committee/>; and Reiner Grundmann, “‘Climategate’ and The Scientific Ethos,” *Science, Technology & Human Values* 38 (1) (2013): 67–93, <https://doi.org/10.1177/027016224391432318>.
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- ⁷⁹ Eli Stokols and Noah Bierman, “Trump Coronavirus Response Puts Administration Weaknesses under Harsh Spotlight,” *Los Angeles Times*, March 12, 2020, <https://www.latimes.com/politics/story/2020-03-12/trump-coronavirus-response-spotlights-administration-weaknesses>.
- ⁸⁰ Funk and Tyson, “Growing Share of Americans.”
- ⁸¹ Gordon Gauchat, “Politicization of Science in the Public Sphere: A Study of Public Trust in the United States, 1974 to 2010,” *American Sociological Review* 77 (2) (2012), <https://doi.org/10.1177/0003122412438225>, 182.
- ⁸² *Ibid.*, 168.
- ⁸³ *Ibid.*, 184 (“empirically underdetermined”) and 171–172 (“conservatives’ distrust”).

- ⁸⁴ John J. Lee, “Party Polarization and Trust in Science: What about Democrats?” *Socius: Sociological Research for a Dynamic World* 7 (1–12) (2021), <https://doi.org/10.1177/23780231211010101>.
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- ⁸⁶ A good summary of this alignment can be found in Robin Veldman, *The Gospel of Climate Skepticism: Why Evangelical Christians Oppose Climate Action* (Berkeley: University of California Press, 2019).
- ⁸⁷ Oreskes and Conway, *The Big Myth*. See also Kruse, *One Nation Under God*.