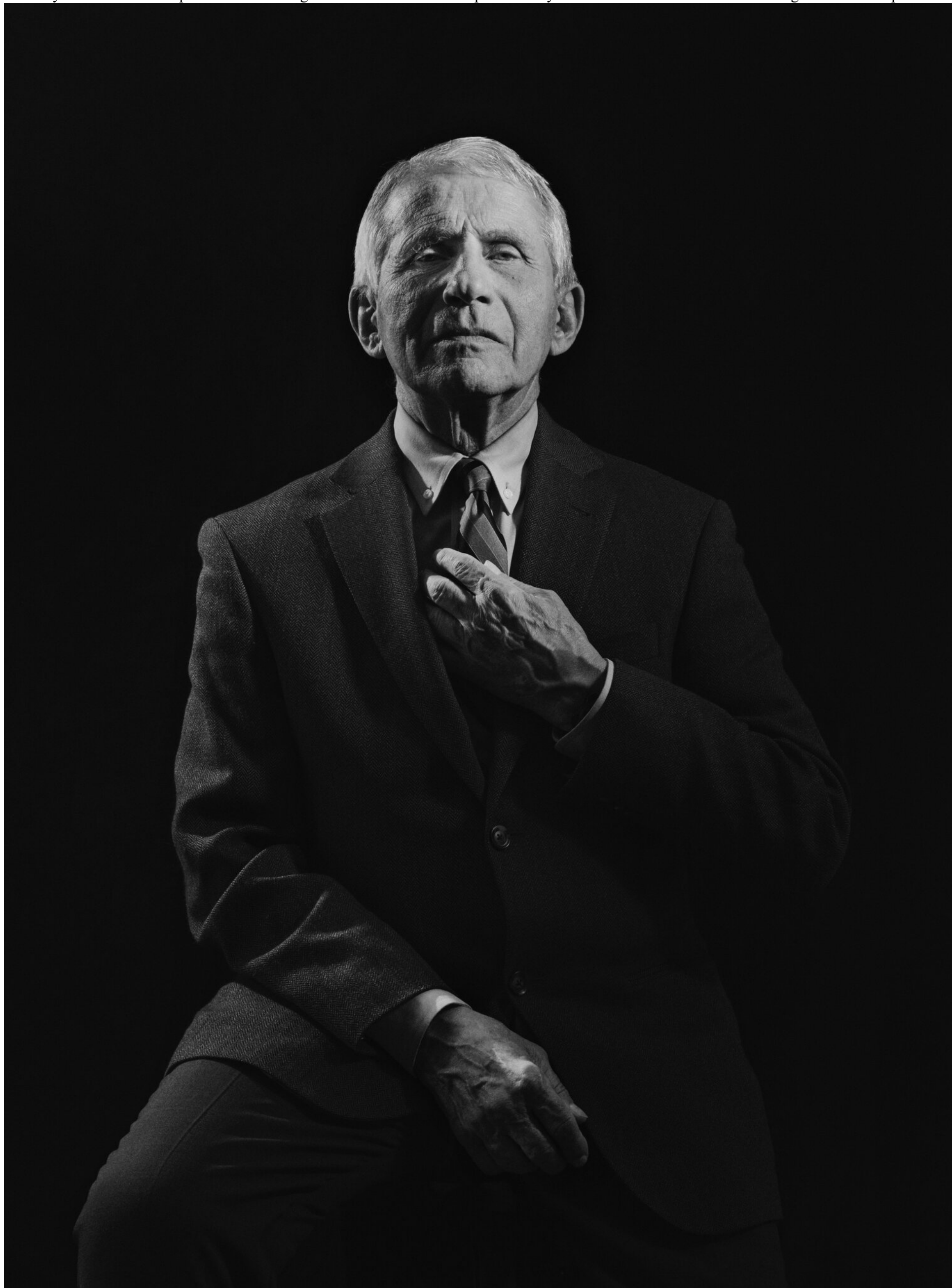


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Philip Montgomery for The New York Times

Dr. Fauci Looks Back: 'Something Clearly Went Wrong'

In his most extensive interview yet, Anthony Fauci wrestles with the hard lessons of the pandemic — and the decisions that will define his legacy.

By David Wallace-Wells

It was, perhaps, an impossible job. Make one man the face of public health amid an unprecedented pandemic, in a country as fractious as the United States, and there were bound to be disappointments and frustrations, and they were bound to get personal.

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Still, in December, when Elon Musk joked on Twitter that his “pronouns” were “Prosecute/Fauci,” it felt like the cresting of a turning tide against the man who had played essentially that role for the first three years of the pandemic. At least 30 state legislatures have passed laws limiting public health powers in pandemics. This January, the month after Anthony Fauci retired as the four-decade head of the National Institute of Allergy and Infectious Diseases, barely half of Americans said they trusted the country’s public-health institutions to manage a future pandemic. The Wall Street Journal named that as his legacy — sowing distrust about public health and vaccines. Earlier in the pandemic, the leftist magazine The Drift mocked Fauci as “Doctor Do-Little,” and Representative Matt Gaetz, a Florida Republican, proposed that Fauci had “blood on his hands.” Upon the announcement of Fauci’s retirement, Gov. Ron DeSantis of Florida, also a Republican, celebrated: “Grab that little elf and chuck him across the Potomac.”

Whole person

Manslaughter

Of course, there were mistakes and missteps, including some by Fauci: describing the threat to the country as “minuscule” in February 2020, for instance; or first advising against wearing masks, and moving slowly on aerosol spread; or playing down the risk of what were first called “breakthrough infections” in the summer of 2021. And the broader public-health establishment that Fauci came to embody made other mistakes, too, even if it wasn’t always easy to know at the time or identify later who exactly was responsible. Almost certainly, schools stayed closed longer than they needed to. Very conspicuously, American vaccination rates never approached the levels of peer nations — and the problem wasn’t just the anti-vaccine right. Quarantine guidance was abruptly shortened in the midst of the Omicron variant, when thresholds of community-spread levels were suddenly redefined as well. There was no effective paid sick leave instituted, and the official end of the pandemic emergency on May 11 imperils the Medicaid coverage of 15 million Americans. But three years on, whether you are focused on Covid’s direct carnage or on its collateral damage, it seems irrational to pin the brutality of America’s pandemic on policy failures, however much Americans want to put the blame somewhere. Or on someone.

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Over several hours and multiple Zoom and phone calls in April, I spoke with Fauci about that: how he saw the full story of this historic public-health emergency and the role he played in it. At times, he was defensive, even combative, particularly when it came to episodes in which he felt that his own positions had been misconstrued and on the matter of gain-of-function research and the origins of the pandemic. But on the whole, he was reflective, even humble, especially about the way that Covid-19 exposed the limits of public health and, in his telling, kept surprising him and his fellow scientists.

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“I’m a physician,” he told me in response to criticism that he had pushed the country too far. “That’s my identity. I’ve taken care of thousands of patients in one period of my life during the early years of H.I.V. I believe that I have seen

as much or more suffering and death as anybody has in most careers. I don't mean to seem preachy, but I don't want to see people suffer and I don't want to see people die."

David Wallace-Wells: Three years ago, in March 2020, you and many others warned that Covid could result in as many as 100,000 or 200,000 American deaths, making the case for quite drastic interventions in the way we lived our daily lives. At the time, you thought "worst-case scenarios" of more than a million deaths were quite unlikely. Now here we are, three years later, and, having done quite a lot to try to stop the spread of the virus, we have passed 1.1 million deaths. What went wrong?

Anthony Fauci: Something clearly went wrong. And I don't know exactly what it was. But the reason we know it went wrong is that we are the richest country in the world, and on a per-capita basis we've done worse than virtually all other countries. And there's no reason that a rich country like ours has to have 1.1 million deaths. Unacceptable.

Wallace-Wells: How do you explain it?

Fauci: The divisiveness was palpable, just in trying to get a coherent message across of following fundamental public-health principles. I understand that there will always be differences of opinion among people saying, "Well, what's the cost-benefit balance of restriction or of masks?" But when you have fundamental arguments about things like whether to get vaccinated or not — that is extraordinary.

Wallace-Wells: Even now, when we talk about pandemic response, we focus on things like school closures and masks, but it seems to me that Covid mortality has been shaped much more by the country's vaccination levels. There have been three times as many American deaths since Election Day 2020 as before. And we've done much worse, compared with our peers, since vaccination began than we had before.

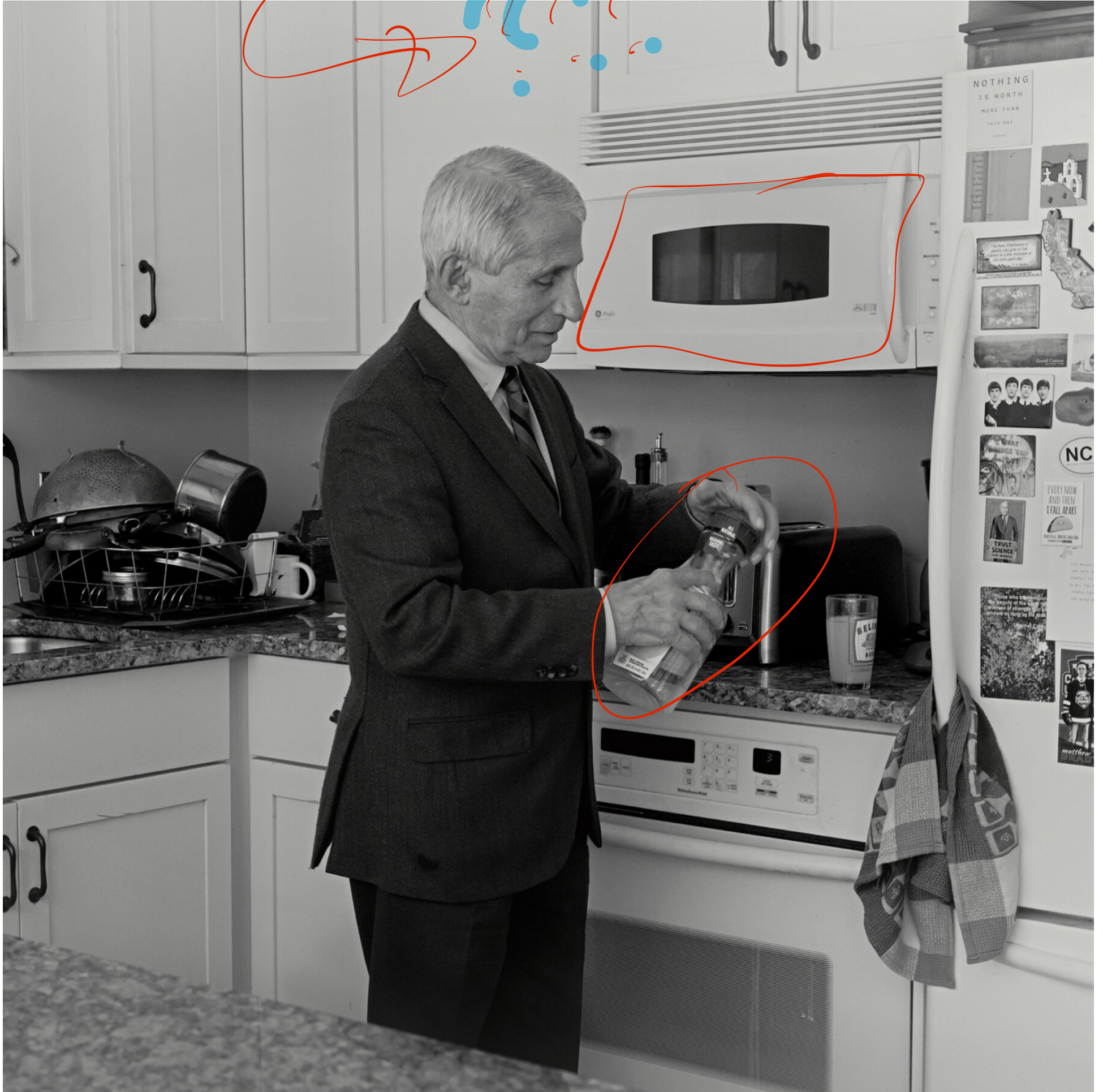
Fauci: I mean, only 68 percent of the country is vaccinated. If you rank us among both developed and developing countries, we do really poorly. We're not even in the top 10. We're way down there. And then: Why do you have red states that are unvaccinated and blue states that are vaccinated? Why do you have death rates among Republicans that are higher than death rates among Democrats and independents? It should never ever be that way when you're dealing with a public-health crisis the likes of which we haven't seen in over a hundred years.

That's part of it. The other part of it has nothing to do with that divisiveness. It has to do with the fracturing of our health care delivery system in this country. We have let the local public-health and health care delivery system really suffer attrition. And the health disparities — racial and ethnic health disparities. Every country has a little bit of that, but we really have a lot of it.

Wallace-Wells: You called America's pandemic performance virtually the worst in the world on a per-capita basis. But judging by excess mortality, the U.S. ranks about 40th worst in the world — still much more brutal than you would want from the world's richest country, but not quite as extreme. When I look around the globe, I guess you could say there were a few relative success stories in East Asia. But everywhere across Europe and the Americas, there are no real successes; it's just degrees of failure. Policies differed from place to place, but not by that much. And while some managed better than others, everybody suffered. Which makes me wonder, was it vanity to believe, as many of us did early in the pandemic, that we had the tools we needed to bring the nightmare to an end?

Fauci: Yeah, you're probably onto something there, David. I remember a public conversation I was having about the importance of a very effective degree of preparedness — how much it will allow you to escape significant damage from

an outbreak. And I remember saying, depending on the transmissibility, *morbidity* morbidity and mortality of a particular pathogen, that sometimes no matter how well you are prepared, you are going to get a lot of hurt. This was one of those outbreaks. And you're absolutely right. When you look around, nobody did great, except maybe one or two countries. Most everybody did poorly. Even those countries that had no political divisiveness the way we had, they did poorly. There were gaps and inadequacies in both preparedness and response that varied among different nations.



Anthony Fauci at his home in Washington. "I don't mean to seem preachy, but I don't want to see people suffer and I don't want to see people die." Philip Montgomery for The New York Times

Wallace-Wells: So what does that tell us about public health going forward? There seems to me to be almost a growing consensus, at least at the level of political discourse, that we went overboard, that we tried to do too much, that pandemic containment was quixotic or even counterproductive. *Too much (E)*

Fauci: Yeah — I could say, well, hey, we tried our best, and we still got screwed, so we're going to get screwed no matter what happens in the next one. I don't think that's an appropriate response. I think we can still improve significantly.

(E) benefit

And I put it into two general buckets. First, the scientific preparedness and response, and then the public-health preparedness and response.

And on vaccines, because of the extraordinary amount of effort and resources we had put into decades of preparedness to develop vaccine platforms and optimal immunogens, we did something that was unprecedented.

Wallace-Wells: Mass vaccination in under a year.

Fauci: How much worse would it have been if we didn't have a vaccine in 11 months? If it took three years to get a vaccine, we would have had five million deaths here. And the world, instead of having seven million deaths, which is an underestimate —

Wallace-Wells: It's probably 20.

Fauci: Yes, it's probably 20. And it would have been double that without vaccines. So I don't think we should throw our hands up and say we could not have done any worse.

Wallace-Wells: Let's talk about the vaccines. It was the fastest rollout in history, a miracle of modern medicine. But we had vaccines designed by the end of January 2020. The Phase II safety trials were completed by early July. Could we have accelerated the rollout from there and blunted that awful first winter surge? Could we do it faster in the future?

Fauci: Yes. The G7 talks about it: the hundred-day mission, to have distribution within a hundred days. Not that everybody gets vaccinated, but that you start doing it. Is that easy? No, it's going to be really hard. Is it possible? I think so.

Wallace-Wells: And what about rollout? So often Americans talk about vaccine hesitancy as you did a few moments ago: that fewer Republicans than Democrats are vaccinated, and that red states are less vaccinated than blue ones. But in addition to the partisanship gap, there were also large vaccine gaps by education, income and race. What could we have done better to promote vaccination among those groups?

Fauci: David, I don't have a great answer for you. I don't know. There are so many complexities involved here. I think we tried. I know we tried. How effective we were, that's a different story. Even with the vaccine trials, we anticipated reluctance on the part of brown and Black people. And I personally put in a lot of effort, as did Francis Collins and some of my colleagues at the Vaccine Research Center, to make sure that there was proper representation in the clinical trials. But right off the bat, we were dealing with a new type of vaccine, an mRNA vaccine. And there was this smoldering level of suspicion and that divisiveness in the country. And then there was the whole idea of people not getting vaccinated, and then came mandating.

Wallace-Wells: You think that was harmful?

Fauci: Man, I think, almost paradoxically, you had people who were on the fence about getting vaccinated thinking, why are they forcing me to do this? And that sometimes-beautiful independent streak in our country becomes counterproductive. And you have that smoldering anti-science feeling, a divisiveness that's palpable politically in this country.

The thing that astounded me is that when there were surges of infections in certain regions and the hospitals were being overwhelmed, people were still saying it's fake news. I mean, people whose loved ones were in the hospital

were denying that it was Covid. ~~It seems inconceivable.~~ That's why I have to say I really don't know. I wish I had an answer, but some very strange psychodynamics were going on in our country.

Wallace-Wells: Is it just our country? Or is that built into the challenge of communication during a new pandemic, where you have moving targets and uncertainties but you also need to offer concrete guidance through the fog of war?

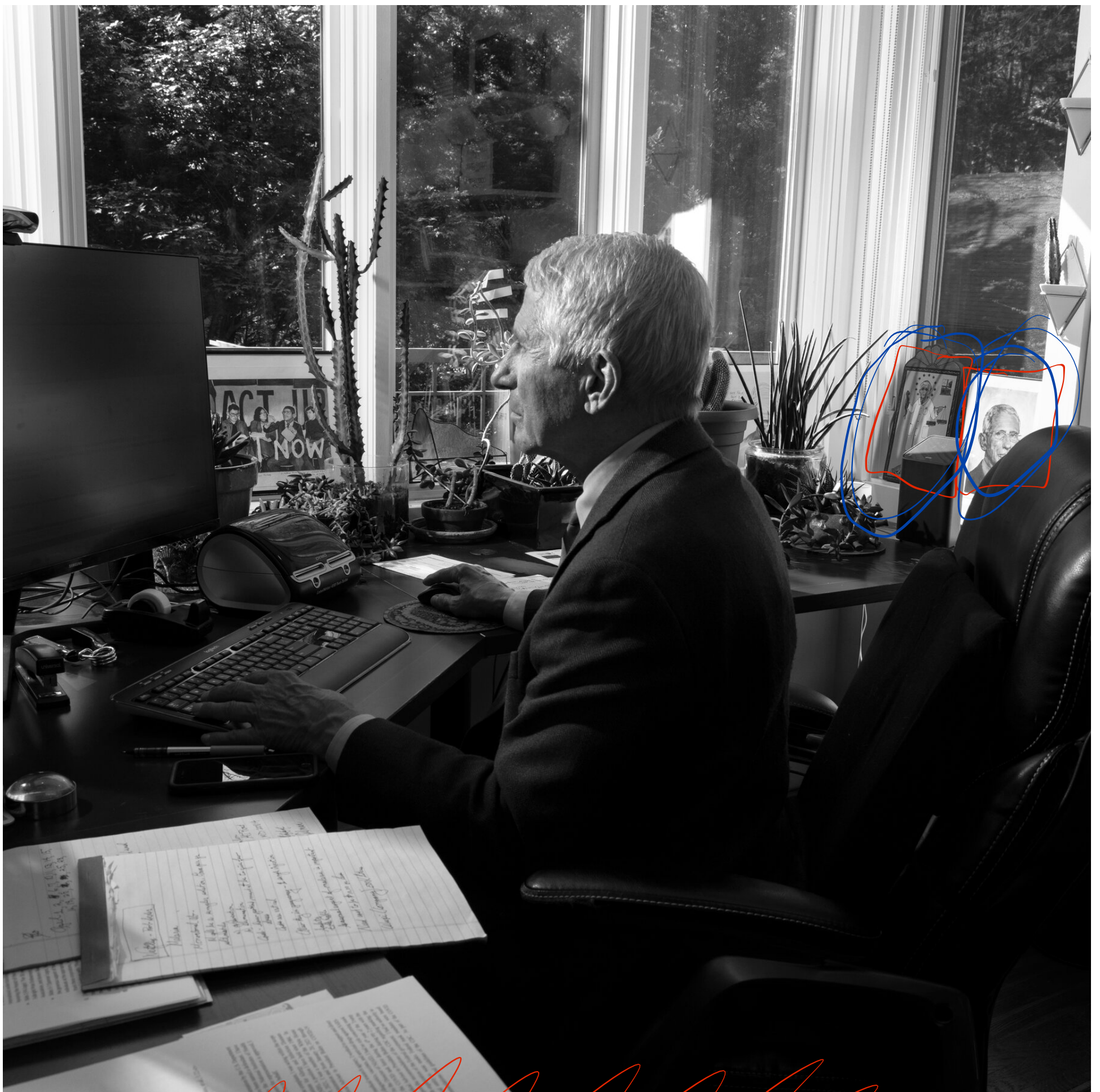
Fauci: Inherently, **communication in pandemics is difficult under** the best of circumstances. What has been so troubling to me as a health official is when you are dealing with a moving target, the evidence is evolving and new data becomes available, but you get so many different people with their own sets of data that are not real data. But even in a perfect world, it would not be easy.

Wallace-Wells: It sounds as if you are talking about this primarily as a phenomenon of the right. But you've been criticized a fair amount from the left as well, especially as the Biden years have worn on. This is an oversimplification, but on the right, you could say the main thrust of criticism was that the public response was too heavy-handed. On the left, it has been that it was too hands-off. That in the Biden era, guidance about masking and testing and quarantining were driven less by public-health concerns than by what was seen by the White House as economic, political and social realities — that people wanted to move on, however many people were dying.

Fauci: I certainly think things could have been done differently — and better — on both sides. I mean, anybody who **thinks that what we or anybody else did was perfect is not looking at reality. Nothing was done perfectly.** But what I can say is that, at least to my perception, the emphasis strictly on the science and public health — that is what public-health people should do. I'm not an economist. The Centers for Disease Control and Prevention is not an economic organization. The surgeon general is not an economist. So we looked at it from **a purely public-health standpoint.** It was for other people to make broader assessments — people whose positions include but aren't exclusively about public health. Those people have to make the decisions about the **balance between the potential negative consequences** of something versus the benefits of something.

Certainly there could have been a better understanding of why people were emphasizing the economy. But when people say, "Fauci shut down the economy" — it wasn't Fauci. **The C.D.C. was the organization that made those recommendations. I happened to be perceived as the personification of the recommendations.** But show me a school that I shut down and show me a factory that I shut down. Never. I never did. I gave a public-health recommendation that echoed the C.D.C.'s recommendation, and people made a decision based on that. But I never criticized the people who had to make the decisions one way or the other.

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 (F) GOOD
 (X) BAD



"I have always felt when there are people pushing back at you, even though they in many respects are off in left field somewhere," Fauci says, "there always appears to be a kernel of truth — maybe a small kernel or a big segment of truth — in what they say." Philip Montgomery for The New York Times

Wallace-Wells: One thing I've seen you emphasizing lately is the lesson that you need to act early to stop exponential growth, and that **earlier interventions are much more effective than later interventions**. But in January and February and even into March of 2020, you and a lot of other folks in the public-health infrastructure were spreading a message that most Americans didn't really need to worry about the virus, that it wasn't a real risk to most of us. It wasn't until later in March that the alarm was really raised. Was that too late? Could we have raised the alarm earlier? And if so, what would the effect have been, do you think?

Handwritten purple notes:
 YK
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 18

Fauci: Well, first of all, this is one of the things that keeps getting distorted. When I said we don't need to do anything different right at this moment, please don't forget that was followed by a semicolon, and then a "however," and then by, "This could change rapidly, and **we better be prepared for that**." I said that every single time. And the people who want to do gotchas on me only show the first part.

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Wallace-Wells: But if you go back in time, if you put yourself in February 2020, you're telling Helen Branswell, for instance, that this virus was low-risk and that you didn't want to stake your credibility on what could be a false alarm. Do you wish you had said then more emphatically that this is a real, urgent threat and that we need to stand up our defenses immediately?

Fauci: Yeah, I think, retrospectively, we certainly should have done that. If you look at what we knew at the time, though — we didn't know that in January. We were not fully appreciative of the fact that we were dealing with a highly transmissible virus that was clearly spread by ways that were unprecedented and unexperienced by us. And so it fooled us in the beginning and confused us about the need for masks and the need for ventilation and the need for inhibition of social interaction.

Wallace-Wells: The asymptomatic spread.

Fauci: To me, that was the game-changer. And if we knew that very early on, our strategy for dealing with the outbreak in those early weeks would have been different. So when people say to me, "Could we have done better?" Of course, of course. If you knew many of the things then that now you know, definitely you would want to do things differently.

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Wallace-Wells: But looking back from the vantage of today, if we had implemented the policies that we implemented in the middle of March instead in the middle of February, would we actually be in a very different place now, in 2023? I don't want to sound fatalistic, but it has been such a long pandemic. Would moving faster in those first months have made a material difference to our overall response?

Fauci: I don't know. It is conceivable that we would've ultimately been in the same situation. And would we have been able to shut down the economy? Would the country have accepted it, when you had a handful of cases and one death? I'm not saying that's a reason not to do it — we should have, probably, if we knew what we know now. But with just a few cases, I don't know if we would've gotten the country to shut down.

Wallace-Wells: Part of that was issues with testing, right? Because we had many more infections than reported cases back then — our testing was so bungled. How big a problem was that?

Fauci: Huge. It was a huge, huge, huge problem. Not only the technical mess-up by the C.D.C., but then the follow-up of not encouraging the use of other tests from other sources and instead saying: "No, wait, wait, we'll fix it. We'll fix it." As opposed to saying, "Hey, let's just allow these other tests that are readily available."

Wallace-Wells: It was around the same time that the mask guidance wavered — first, masks were not recommended, and then they were. But I want to ask you to reflect on the even bigger picture: Were the culture-war fights over masking worth it? Or did those fights have a bigger negative impact on future vaccine uptake among conservatives than the positive impact they had on spread? To be clear: I'm not someone who doesn't think masks work. I think the science and the data show that they do work, but that they aren't perfect and that at the population level the effect can be somewhat small. In what was probably our best study, from Bangladesh, in places where mask use tripled, positive tests were reduced by less than 10 percent.

Fauci: It's a good point in general, but I disagree with your premise a bit. From a broad public-health standpoint, at the population level, masks work at the

margins — maybe 10 percent. But for an individual who religiously wears a mask, a well-fitted KN95 or N95, it's not at the margin. It really does work. But I think anything that instigated or intensified the culture wars just made things worse. And I have to be honest with you, David, when it comes to masking, I don't know. But I do know that the culture wars have been really, really tough from a public-health standpoint. Ultimately an epidemiologist sees it as an epidemiological phenomenon. An economist sees it from an economic standpoint. And I see it from somebody in bed dying. And that's the reason it just bothers me a lot — maybe more so than some others — that because of the culture wars you're talking about, there are people who are not going to make use of an intervention that could have saved their lives.



Fauci with President Donald Trump at the Vaccine Research Center in Bethesda, Md., on March 3, 2020. Doug Mills/The New York Times

Wallace-Wells: Let's talk about herd immunity. In 2020, you talked a fair bit about what it would take to get there. A Times article in December 2020 suggested that you had been raising your estimate for the threshold at which herd immunity would arrive.

Fauci: That article gets completely distorted, David. That has been weaponized against me.

Wallace-Wells: Well, tell me how I should see it.

Fauci: Not how you should see it. I'm telling you what it is, and then you'll make up your own mind. I'm not that presumptuous. But when I was "changing the numbers," it was a garbled conversation. What I was trying to tell Donald was that we don't know what the threshold of herd immunity would be. But I probably could have been more clear that we were talking about a moving target, because we didn't know how transmissible the virus was.

Wallace-Wells: But when I watched your recent lecture at Georgetown, you didn't talk about herd immunity at all. Nobody does. Which makes sense, given that perhaps 95 percent of the country has had the disease, on top of the almost 70 percent who have been vaccinated, and the virus is obviously still

circulating. And in fact a number of epidemiologists I've spoken to have told me that given the nature of this virus, we should have never entertained herd immunity as a possibility, given the way SARS-CoV-2 replicates in the body. What went wrong there?

KAZIMIR (W)

Vaccine

Don't think for a minute

HERC

Allyson Williams

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Fauci: Well, I don't think anybody did anything wrong. What went wrong was that the virus did not act the way one would have thought the virus would act. We made an assumption that turned out to be an incorrect assumption – that this was going to act like other viruses.

The classical definition of herd immunity has been completely turned upside down by Covid. And let me go through the steps. Herd immunity is based on two premises: one, that the virus doesn't change, and two, that when you get infected or vaccinated, the durability of protection is measured in decades, if not a lifetime. With SARS-CoV-2, we thought protection against infection was going to be measured in a long period of time. And we found out – wait a minute, protection against infection, and against severe disease, is measured in months, not decades. No. 2, the virus that you got infected with in January 2020 is very different from the virus that you're going to get infected with in 2021 and 2022.

Influenza
multiple antigens
1000s

Wallace-Wells: Sometimes it seems to me we would be better off thinking of Omicron as an entirely different virus. It's so distinct from not just the ancestral strain but also the early variants.

Fauci: Exactly. The vaccines protected well against infection and disease with Alpha, Beta and Delta. Then along comes Omicron. It evades immunity so well that a vaccine doesn't even protect very well against infection. So with a changing virus and a duration of immunity that doesn't last – what is herd immunity for that virus?

IgA
B cells

Wallace-Wells: But beyond the evolution of the virus, should we ever have expected herd immunity with a virus like this? My understanding is that because of the way SARS-CoV-2 replicates in the upper airway and the mucosal passages, it is very hard, if not impossible, to stop transmission.

VK
IgA

Fauci: That's true but unrelated. That makes it more complicated to know who's infected and capable of transmitting and who's not. But it still doesn't change the concept of herd immunity.

VAX -> IgG Blood
Antibodies -> IgA Mucosa

Wallace-Wells: So were we wrong to expect that after a given amount of infection and vaccination, the disease would disappear? Because that was an extremely conventional view in 2020.

IgG
IgA
Influenza

Fauci: It depends on what you mean by "disappear." If you control community infection at a low-enough level that it doesn't disrupt society, to some people that means it disappears. To other people, it means, well, it's there, but it doesn't bother society very much.

But be careful: No, it was not completely out of line to think that you could get protection against infection – that even if you got some virus in you, it wouldn't be of a high-enough titer to transmit to somebody else.

And then we found out something that was stunning. When you looked at the titer of the virus in infected and asymptomatic people and a virus in the nose of symptomatic infected people, it was the same. What the hell is going on here? That was a big surprise. So we were wrong, but we weren't wrong because we didn't interpret data in front of us. We never had those data. We did not know early on that 50 to 60 percent of the transmissions would be

asymptomatic. That was like, whoa. When I saw those data, I said: This is different. We're dealing with a disease the likes of which we've never seen before.

Wallace-Wells: Just to refresh my memory, when did we learn that? Late spring 2020?

Fauci: Mid- to late spring. People were saying that anecdotally in February and early March. But we didn't really fully realize it until the end of March.

Wallace-Wells: So by the time vaccinations were rolling out in December, we had a relatively good idea about all of these dynamics and the way they worked in the immune system. At that point, many Americans were thinking, we're going to get these two shots, and we're never going to see this disease again. But at that point, experts probably knew enough to know that was wishful thinking, right? After all, all the trials actually demonstrated was protection against severe disease.

Fauci: Yes. We probably should have communicated better that the clinical trials were only powered to look at the effect on clinically recognizable disease, symptomatic disease. Although, at least with the ancestral strain, they did protect against infection to a certain degree.

Wallace-Wells: Did we do enough to communicate the age skew of the disease? At the outset, we had a public-health approach that was sort of built around universal protection and the idea that we needed to limit transmission as much as we could in order to protect the most vulnerable people we knew. I think the average American knew that it was more dangerous among older people and that it was more dangerous for people with comorbidities. But I still think, honestly to this day, that almost no one appreciates just how wide that age skew really is, given that the risk to someone in their 80s or 90s is perhaps hundreds of times as high as it is to someone in their 20s or 30s.

Fauci: You are hitting on some terrific points. Did we say that the elderly were much more vulnerable? Yes. Did we say it over and over and over again? Yes, yes, yes. But somehow or other, the general public didn't get that feeling that the vulnerable are really, really heavily weighted toward the elderly. Like 85 percent of the hospitalizations are there. But if you ask the person in the street, they may say, "Oh, yeah, elderly are more vulnerable, but everybody's really vulnerable" — which is true, but to a much lesser extent.

Wallace-Wells: In the vaccine rollout, did we make a mistake in prioritizing health care workers as opposed to seniors?

Fauci: I don't know if it was a mistake. A mistake is such a charged word. "Fauci made a mistake, people died. Fauci lied, people died." Come on. I don't know if it was a mistake. I think the standard way of protecting people who are at greater risk every day was a sound principle.



Representative Marjorie Taylor Greene, a Georgia Republican, holding a news conference on June 15, 2021, to call for Fauci's dismissal as head of the National Institute of Allergy and Infectious Diseases. Jim Watson/Agence France-Presse — Getty Images

Wallace-Wells: And then, did we talk enough about the risk of breakthroughs? Through the summer of 2021, the messaging was that breakthrough cases were very rare and functionally never resulted in serious illness. But beginning with the Delta variant, both of those things became much less true. And now, in 2023, more than half of our deaths are among vaccinated people.¹¹ Was there enough communication to prepare people — especially the vulnerable elderly — for some continuing risk going forward?

Fauci: I mean, we tried. David, we're playing a lot of Monday-morning quarterbacking here. This is some really serious Monday-morning quarterbacking.

Wallace-Wells: Well, yeah, that is the game we're playing — trying to learn from what happened. I'm not trying to prosecute you on any of these points. I'm just trying to ask: What went right? What went wrong? What do we understand better now? And what could we do better next time?

Fauci: Of course we could have done better. We tried. If you look at what I was saying in the months before I stepped down, and what Ashish Jha is saying to this day, it's that if you are vaccinated and boosted and have available therapy, you are not going to die, no matter how old you are. We were very explicit in saying that. Did people hear that? I don't know. How loud do you have to say something for people to understand? How often have you got to say it?

Wallace-Wells: OK, let's talk about origins. My understanding of your position and perspective is that you feel there's strong and accumulating evidence pointing to a zoonotic origin of the pandemic, as opposed to a lab leak. But you don't feel as if the case is closed.

Fauci: Yes. Absolutely. I feel that until you have a definitive proof of one or the other, it is essential to have an open mind. And I have been this way from the very beginning, David, notwithstanding the criticisms to the contrary. But I want to highlight the difference between possible and probable. If you look at

what's possible, I absolutely keep an open mind until we get a definitive proof of one versus the other. However, as a scientist, I could not ignore the accumulation of evidence favoring one versus the other.

Wallace-Wells: I also think a natural occurrence is more likely. But that evidence strikes me as more circumstantial, in the sense that we have papers demonstrating that, based on samples collected in January, the wet market in Wuhan, China, was a superspreading site early in the pandemic. But while that's suggestive, it doesn't seem to me to be proof that the pandemic began there. On top of which, all indications are that the first human case was in December, if not earlier. What am I missing?

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Fauci: Well, the emergence of two separate isolates, the A and B lineages, argues really strongly that it wasn't just a superspreader event. Both A and B came from the market. A and B weren't anywhere else early on. That's pretty strong evidence, but it's not definitive. And so you and I are not far off at all.

But one other thing that is tough to talk about: Because both are possible, even putting aside probability, we should be strengthening whatever it takes to prevent both — to prevent a new natural occurrence or a new lab leak. For the lab leak, you can do it by always re-examining the guidelines that you do for studies, making sure protocols are in place, making sure there's transparency. On the other side, to address the possibility of a natural origin, you have to pay close attention to the animal-human interface and get rid of this wet-market stuff where you bring wild animals into close contact with humans. Which they shouldn't have done: As you well know, the rule was no wild animals in the market.

Wallace-Wells: I wrote an essay recently about this — that we don't need to know to take action. But moving beyond policy, if we don't yet have definitive data and are balancing probabilities in our minds, how should we think about these two narratives? The two stories seem very different to me. If we're talking about a natural origin, we might think of it as a morality tale about the incomplete triumph of the modern world over nature — and how the natural world still threatens us. If we're talking about it as something that came out of a lab, it's much more a story of hubris — we did this to ourselves.

Fauci: David, I think we did it to ourselves if it was either one. I disagree with you a little bit there, saying it's on us if it's a lab leak. I think it's on us no matter what it is.

Wallace-Wells: How do you mean?

Fauci: The animal-human interface is something we need to pay very close attention to. That's how the bird flu happens — you put birds in pens with people and pigs.

Wallace-Wells: And think about factory farming ...

Fauci: If it's a natural occurrence, for goodness' sake, natural occurrences occur all the time. We should have been doing something about that. If it's a lab leak, then we really should have been much, much more attentive to protocols and training and restrictions.

Wallace-Wells: But the particular responsibility shakes out a little bit differently if it's ultimately some vendor in a wet market who is illegally transporting animals or if it's the product of this international research apparatus, right? I don't want to overstate the American authority or oversight over every experiment at the Wuhan Institute of Virology — let alone the Wuhan C.D.C. But there is a large American component to the development of this whole

international enterprise, going back several decades, and you've played a role in developing and funding that .¹²

Fauci: First of all, all of the intelligence groups agree that this was not an engineered virus. And if it's not an engineered virus, what actually leaked from the lab? If it wasn't an engineered virus, somebody went out into the field, got infected, came back to the lab and then spread it out to other people. That ain't a lab leak, strictly speaking. That's a natural occurrence.

Wallace-Wells: Even in that case, the research itself is still playing a role. But when you say everyone agrees it was not an engineered virus — I don't think they do. I think they generally agree it was not purposefully engineered to be a bioweapon. I don't believe they've ruled out other forms of engineering — direct genetic interventions or serial passage of viruses.

Fauci: David, you could have taken a virus and serially passaged it in 1920. I could do that tomorrow in your kitchen. You don't need to do engineering.¹³

And if you look at the viruses that the \$120,000-a-year grant was given through EcoHealth to the Wuhan Institute to do surveillance on, and you look at the viruses that they studied that they published in the literature, and that was in all of their progress reports, those viruses could not possibly ever turn into SARS-CoV-2, even if they tried to turn them into SARS-CoV-2, because they were evolutionarily so far from SARS-CoV-2 that anybody who knows anything about virology would say there's nothing you could do to those viruses that would turn them into SARS-CoV-2. Yet what gets conflated is that the N.I.H. funded them, therefore you are liable for the lab leak if it's a lab leak. It had nothing to do with what we did, because the viruses were unable to be made into SARS-CoV-2.

Wallace-Wells: I'm not suggesting that the work described in that particular EcoHealth grant led to the pandemic. But we know that there was a lot of other work being done in Wuhan. And if I were you, and I was going to sleep every night thinking that there was even some very small chance that the virus came from a laboratory doing the kinds of research that I had helped promote and fund over the last few decades, I think that might weigh on me a bit, even if I was absolutely sure I had done everything I had done with the best intentions.

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Fauci: Now you're saying things that are a little bit troublesome to me. That I need to go to bed tonight worrying that N.I.H.-funded research was responsible for pandemic origins.

Wallace-Wells: I'm not saying you need to do anything. I'm putting myself in your shoes and telling you what I think it would mean to me to really believe there's a chance, even a very small one, that this pandemic was the result of a lab leak.

Fauci: Well, I sleep fine. I sleep fine. And remember, this work was done in order to be able to help prepare us for the next outbreak. This work was not conceived by me as I was having my omelet in the morning. It is a grant that was put before peer review of independent scientists whose main role is to try to get data to protect the health and safety of the American public and the world. And it was judged that this type of research was important.

Wallace-Wells: Do you think the experience of the pandemic — and the possibility of a lab origin, however remote — should change how we think about the risks and benefits of this entire field of research?

Fauci: You have to have a totally transparent process that involves scientific input and community input — informed community input. Because if you do

what some people are saying we should do and shut down all gain-of-function research, you've got to make clear what you're talking about. What do you mean by "gain of function"? Some want to pass a law: All gain-of-function should be stopped. But if all gain-of-function stops, you will have no vaccines for flu. You will have no vaccines for any of the other diseases, because all of that manipulates a virus or a pathogen to gain a certain function to be able to make a vaccine.

So first of all, we've got to do a better job of getting people to understand what gain-of-function is. So when Rand Paul asked me, did you fund gain-of-function research in Wuhan? I said, absolutely not. So if you and I talk about gain-of-function, David, we better define what we're talking about, because we're going to confuse the crap out of everybody.



Protesters outside the Massachusetts Statehouse on Jan. 5, 2022, demanding an end to vaccine mandates. CJ Gunther/EPA, via Shutterstock

Wallace-Wells: Well, maybe it's a small point, but when I think about that exchange, what I think is that you could have said: "First, there are a lot of things that people may think of as gain-of-function. They involve any manipulation of viruses, including things that we all know are beneficial, like producing annual flu vaccines, and including some things that I feel very strongly are beneficial, even if there are some who feel otherwise. The definition we use at the N.I.H. is much narrower, and the work described by the grant you are referring to does not meet that definition. But I understand the broader question you are raising, and I feel strongly that this kind of work is worthwhile, and if you'll allow me, I'll explain why."

Fauci: David, have you ever testified before a congressional committee?

Wallace-Wells: I have, actually.

Fauci: How difficult is it to get a sentence like that out? Look at an interview between me and Jim Jordan. How many words did I get in there?

Wallace-Wells: Well, then, let's have that conversation right now. The floor is yours. What would you say?

Fauci: What you said is what I agree with. You are asking me, why didn't you say that, if you agree? If I had the opportunity to say it, I would say the same thing. It's a broad category. You've got to have the right balance of oversight. But there are clear, absolute benefits that you need for society.

Wallace-Wells: And what about pandemic preparedness more generally? Let's say we're working from scratch and designing the system at a white board. What reforms are needed?

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Fauci: Do you have two weeks to talk?

If you look at what worked for us, it was on the science side: the extraordinary investments that were made for decades before the emergence of SARS-CoV-2. First, the work in platform technology that led to essentially a revolution in how we make vaccines. No.2 is structure-based immunogen design. That helped with antiviral design, too – that has been the most underrated part of our response. I mean, show me a person who's vaccinated, got infected, took Paxlovid and died. I can't find anybody.

Then you look at what we didn't do so well. What we didn't do so well was in the infrastructure and communication and transparency – all the things that go on with public health. We also had a public-health system that we thought was really, really good. But it was really, really antiquated. We didn't even know what was going on at a given time. Now, I don't want to be criticizing the C.D.C. In fairness to them, they recognize themselves that they need to bring their public-health data collection into the 21st century. And they had a culture that was an academic culture, in which we don't say anything until we've essentially written the manuscript and it goes out and it's being published – as opposed to, we need to know today what's going on. As a result, in trying to gather information during the pandemic, we had to rely on conference calls in the middle of the night or early in the morning with Israel, with South Africa, with the European Union, with our colleagues in the U.K. We have to change that.

We've got to know day by day: What are the variants? What are their mutations? How many people are getting infected? Instead, we were blind. We were swimming in the dark.

Wallace-Wells: So if you had an infinite budget and were designing our systems from scratch, that would be your top priority?

Fauci: We don't need an infinite budget. We just need a sustained commitment to science and public health. Spending \$5 billion for an Operation Warp Speed for next-generation coronavirus vaccines is great. But after that. ...

The next pandemic may be 25 years from now. It could be 50 years from now. Remember, the last transforming pandemic was 1918. We had pandemics in 1957, 1968 and 2009, but nobody hardly even noticed them, to be quite honest with you.

Wallace-Wells: You see an awful lot of normalization in this pandemic, as well. Is it possible, given that, to cultivate that more sustained commitment?

Fauci: One of the things I did in my life that I'm most proud of that isn't purely science was my outreach in the gay community during the early years of H.I.V. Now, the gay community with H.I.V. is very, very different from the ultraright MAGA community with Covid. However, there is a bit of connection there – a segment of society that was bucking against what the government was trying to do.

What the gay population was saying is that you've got to take our thoughts into consideration, and that you have a too-rigid clinical-trial apparatus. One of the best things I did in my life was put aside their theatrics and their attacks on me and started listening to what they had to say. And what they had to say was not just a kernel of truth; it was profound truth. It was mostly all true.

So I have always felt when there are people pushing back at you, even though they in many respects are off in left field somewhere, there always appears to be a kernel of truth — maybe a small kernel or a big segment of truth — in what they say. One of the things that we really need to do is we need to reach out now and find out what exactly was it that made them push back. Because so many people cannot be completely wrong.

Wallace-Wells: Can that resistance we saw in this pandemic be overcome? Or do the struggles we see all around the world with this virus a sign that those obstacles are somewhat ineradicable features of human life?

Fauci: I don't know if they're ineradicable. But they're very difficult.

This interview has been edited and condensed for clarity from three conversations.

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