



## **After the Fact | Conversations on Science—In Depth With Dr. Anthony Fauci**

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### **TRANSCRIPT**

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**Dr. Anthony Fauci, director, National Institute of Allergy and Infectious Diseases:**

Everyone should get at least an exposure to science to see if you like it. When you like it, you really fall in love with it.

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**Dan LeDuc, host:** Dr. Anthony Fauci fell in love with science as a young man and went on to spend most of his career as head of the National Institute for Allergy and Infectious Diseases. His love of science has now put him front and center as one of the most trusted medical voices in the nation during the pandemic.

**Dr. Anthony Fauci:** It has really dramatically impacted our lives and caused a lot of pain and suffering of loss of jobs, of loss of income, of dramatic and profound inconveniences of what people need to do.

**Dan LeDuc:** For The Pew Charitable Trusts, I'm Dan LeDuc. Welcome to a new season of "After the Fact." One about the magic and promise of science. Science has always mattered, of course, and it matters more than ever today. And, as we're all vividly experiencing with the lessons of the coronavirus, science is constantly evolving, as we will hear from guests throughout this new season of "After the Fact," featuring conversations on science.

**Dr. Anthony Fauci:** If the data change a bit or they evolve, then your thinking needs to evolve with the evidence.

**Dan LeDuc:** As the data on coronavirus grows, most Americans—78%—say it actually makes sense that scientific studies may have conflicting advice. That 78% is our data point as we kick off this season, and it comes from the Pew Research Center's recent survey of Americans' perspectives on science and COVID-19. We'll hear more from the Center throughout this season, but we begin our conversations with Dr. Fauci about why science matters to him and why it should matter to all of us.



**Dan LeDuc:** Dr. Fauci, thank you so much for joining us. We know you're busy. And thank you for making the time for us.

**Dr. Anthony Fauci:** My pleasure. Good to be with you.

**Dan LeDuc:** I wanted to start our conversation about science with your own interest in science, and why it is that you first got into science and became a doctor.

**Dr. Anthony Fauci:** There are two aspects to that question. One is my calling as a physician, and then science. Because I have always been interested in people. I mean, I come from a background of a family that was very interested in public service. I went to schools in New York City—Jesuit high school—where the theme of the high school was, you know, service for others—you know, meant for others, not for yourself. And it was a classics background, so I got very keenly interested in humanitarian issues—civilizations, the interaction of various civilizations with each other, philosophy, and all the things that go along with a classics education—Greek, Latin, Romance language.

But then I realized that I also liked science in school—biology, particularly, and chemistry also. So I was trying to figure out what the best thing for me for a career to combine my real affinity for wanting to be with people and to interact with people together with fulfilling my like for, as well as my aptitude, which I found out it was a natural fit for me, was science. So I decided medicine. I really liked the science of human issues, human disease, human pathogenic mechanisms that really led me to where I am right now. So it was a combination of the attraction of science as it satisfies your curiosity to explore the unknown, which for those who haven't done that, that is really very fascinating.

**Dan LeDuc:** Doing the work you do now, it's not like as a physician treating individual patients, in some ways, your patient is the U.S. population right now, because of the advice that you can provide us. So take a step back and look at this body of potential patients. What do you wish people better understood about science and the practice of science?

**Dr. Anthony Fauci:** Yeah, I think what would be really helpful in getting the public, particularly when you're involved in the rather profound situation we're in now with COVID-19—historically, the most important pandemic in 102 years—is that people need to understand that science is something that is self-correcting and exploratory. And when you're dealing with a static situation, the scientific facts don't change, and your policy and your interpretation generally don't change. When you're dealing with an evolving situation, I wish the public could understand that science collects data and evidence at any given moment and makes decisions out of necessity that you have to make. But you



have to be humble enough, open-minded enough, and flexible enough to know that as things evolve and the data evolve and you get more evidence, that you are likely to change a recommendation or to change a policy. That's not a mistake. That's science helping you to evolve with the evolving situation. And that's what we mean when we say that science is self-correcting.

**Dan LeDuc:** Of course, that's true, and playing out in science labs and research forever. We're all living it right now, though. We're all seeing this unfold. And the back and forth that you describe normally happens on college campus laboratories and at your laboratory. And the public isn't watching it, and they're not home all day, stuck at home, because of necessary quarantines. So there's a level of, I guess, must be some level of frustration or something out there when they when they feel this a little bit. Do you sense that?

**Dr. Anthony Fauci:** Yeah, of course. I mean, there has to be a level of frustration. You're dealing with the unknown that keeps evolving before your eyes. And the unknown now has dramatically impacted the lives of virtually everybody on the planet. That is something that is truly very unique. We haven't seen anything like this in over 100 years, where everybody is part of this issue.

Because when you needed to shut down, do what we had to do, a lot of things suffered—immunization of children, schooling of children, getting people to go to routine doctor's visits or routine checkups. All those things were negatively impacted. So you're absolutely correct—it is a very frustrating situation.

**Dan LeDuc:** We're about data in this program as well, and we often rely on our colleagues at the Pew Research Center. They did a survey recently that showed that 78% of Americans sort of get what we're talking about. They realize that science evolves, and sometimes that will lead to conflicting information. But what they've also found in separate surveys is that when asked if scientists are people you can trust and work in the public interest, the number is like at 35%. It's kind of low. What do you think you and your colleagues can do to maybe boost those numbers a little bit? And is what we're living through now an opportunity for that?

**Dr. Anthony Fauci:** Well, certainly what we're living through now is an opportunity for that. I think there are so many complex reasons why people might have a lower level of esteem for science as you would like them to have, is that there are a lot of other confounding issues going on. First of all, we're in a, it's almost like an anti-authority mode in the country because of the divisiveness. Scientists are often, because we deal with facts and talk about facts and try to preach facts, are not infrequently looked upon as



authority figures. So any kind of a negative feedback on authority might tend to brush off on scientists.

The other thing is that sometimes scientists tell people things they don't want to hear. There you go. And also, scientists are human. And they have foibles and inadequacies and make mistakes. But in general, scientists, I think, if you take away the divisiveness that we're going through now, are generally well thought of as people of good faith who want to get the truth out.

**Dan LeDuc:** Is part of that just an ability to communicate? It's kind of a tough issue sometimes and difficult problems. You, of course, all the data and the polling shows you have established a high level of trust with the American people. Of course, you also have engaged in the sort of interviews like this, but sometimes with people a lot more attractive than me, like Julia Roberts or Matthew McConaughey, or you've been out on the mound for the Washington Nationals. I sense that there's a purpose to you doing things like that.

**Dr. Anthony Fauci:** Yeah. No, there is. The purpose is that you want to get information that's important for the health of the people to a variety of different segments of society. And not everybody looks at podcasts, not everybody looks at CNN, not everybody looks at the networks. That's the reason why I do Instagrams, I do podcasts, I do classical TV. I also do interviews with rap artists and entertainers, because you do an Instagram with one of those, and you get to a group of people that you never would get to. My formula is when you're trying to explain something, it is not important for you to appear smart. It is important for you to be understood. Because if you're not understood, it doesn't matter how smart you are. You have failed in your communication. You've got to be understood. So you've got to walk a delicate balance of saying things in a clear way and in a way that doesn't talk down to people.

And I use that motto that I learned through my eight years of Jesuit training is precision of thought and economy of expression—namely, know precisely the message that you want to get, and say it in absolutely as few words as possible.

**Dan LeDuc:** Your experience in trying to reach the public goes back decades. You were deeply involved early on in HIV and AIDS. And I'm just curious on how your career, both dealing with controversial things like AIDS was at the time when it was first being brought into the public sphere and discussed and policies were trying to be addressed—how your experience both as a scientist, but also as a public communicator, has prepared you for this.



**Dr. Anthony Fauci:** Well, yeah, I mean, first of all, I think the important thing is when you are involved in something that's evolving and really serious, the way HIV was and is right now, but was certainly a lot more back in the early '80s, and the kind of thing we're going through now with COVID, is that you have got to keep an open mind and be quite flexible as things evolve, number one. Number two, you've got to admit when you don't know something. When you are in the beginning of an outbreak, there are many, many things that you just don't know. So when you're involved in communicating or dealing with people, there's nothing wrong with saying, I don't know. The thing that bothers me a lot, and I try to teach my fellows and my students when I ask them a question, if they don't know the answer, say, I don't know the answer. Don't guess, because I can guess just as easily as you can guess. I want to know if you know the answer.

And if you don't, there's nothing wrong with saying you don't know the answer. And I think that the people you deal with and the general public would respect that—that when you speak, you speak based on the evidence you have. And if you don't know, you say, I'm giving you a projection, but I'm not 100% certain that this is the case, as opposed to acting authoritative all the time.

**Dan LeDuc:** Could we talk specifically about the science of this virus for a moment, and what we've been learning—how it compares to other viruses, and what we have learned about it that points toward what makes for an effective vaccine and what makes for how we can ever address what we're dealing with now?

**Dr. Anthony Fauci:** Well, it's a coronavirus. We have decades of experience with coronaviruses, four of which are the cause of about 15% to 30% of the common colds that each of us get multiple times a year. In 2002, things changed. We had our first experience with a pandemic coronavirus in SARS that, again, jumped species from a bat to a civet cat to a human, and caused a pandemic that was controlled by public health measures. Why? Because it wasn't particularly efficient in going from human to human. We got lucky. Then, 10 years later in 2012, came the second pandemic coronavirus, MERS, Middle East Respiratory Syndrome—again, jumped from a bat to a camel to a human in Saudi Arabia, hence, Middle East Respiratory Syndrome—a pandemic that actually smoldered and still has some cases today, but not a global threat by any means.

Then you have today COVID-19, the third pandemic of a coronavirus. So what we're learning about is that this is a virus that infects humans. This one here, unfortunately, happens to have two characteristics that make it particularly formidable. One, it is spectacularly efficient in spreading from human to human—very efficient. Number two, it has a high degree of morbidity and mortality in certain subsets of people—the elderly and those with underlying conditions.



The other thing about it, it's a darn confusing virus. And it's confusing, because of all of the outbreaks that I've been involved with over the last 40 years, I've never really seen a virus that has such a wide breadth of manifestations, from 40% of people who get no symptoms at all, to some will get mild symptoms, to some will get symptoms that put you in bed for a few weeks and get residual after you get better, some requiring hospitalization, some intensive care, some ventilation, and some dead.

So you have some people who it affects, and it doesn't bother them at all. And others, it kills. That makes messaging really difficult when you're trying to say, you've got to really take this seriously, when many of the young people say, why do I need to take it seriously? The chances are, if I get infected, I won't have any symptoms. Or if I do have symptoms, they'll be relatively mild.

You've got to convince those people that by getting infected, even though they get no symptoms, it's likely that they will infect someone else, who then may infect someone who really gets into trouble. So you have to have both the individual responsibility of not getting infected and the societal responsibility of not propagating an outbreak. That really gets confusing when you're trying to message it. So it's really put a very, very big challenge that we're facing with this virus.

**Dan LeDuc:** We talk about data-based and evidence-based policymaking. It's always a goal, no matter if it's epidemiology or economics or any range of public policy. But how would you like to see science inform policymaking? And that's a very general statement, and you can sort of go in any direction you want with it. But what's your ideal for science to inform our public policy?

**Dr. Anthony Fauci:** Well, I think science is totally essential to public policy. Policy should not be made in a data-free zone, as we say. Policy needs to be made based on the best possible information. The scientific process provides policymakers with that. That's the situation I'm in right now, which is not that easy, as you might imagine. Look at what's been going on where you can actually get attacked for giving scientific information. That's kind of strange—really strange, maybe a little surreal that that's the case. But when you're talking about policy around such sensitive issues that involve the economy, schools, employment, all kinds of things—policy in the best possible world would be to use the information that the scientists give you to inform the policy.

**Dan LeDuc:** Taking into account what you know about the current state of vaccine research and the current epidemiology of where the numbers are, what is your optimism level for us in public health over the next six months to a year?



**Dr. Anthony Fauci:** I'm cautiously optimistic, as I've mentioned many times, given the number of candidate vaccines that are already—two or three of them at least—in advanced clinical trials. And the early data from phase one trials show really grounds for cautious optimism that vaccines can induce the kind of response that we would predict would be protective. So all of that together tells me that I feel reasonably confident, though there's never any guarantees—you gotta always underline that, there's never a guarantee—I feel reasonably confident that we'll have a vaccine that will be available to begin to be distributed by the end of this calendar year, the beginning of 2021. And as we get well into the first half and the second half of 2021, that there'll be enough vaccine to distribute to people for their use.

That, together with the continuation of public health measures—you don't ever want to abandon public health measures, because you're not going to get 100% vaccine efficacy. It's never that way. The best we've ever done is measles with 97%, 98%. And we're not so sure that's going to happen. In fact, it likely would be considerably less than that, but that's good enough. I'll take a vaccine that's 50%, 60%, hopefully 70% effective, together with public health measures. I think by this time next year, we're going to be in a good place.

**Dan LeDuc:** Well, let me ask the question also slightly differently with the calendar in mind, which is, say, next year, or, let's say, two years out. What will normal be? Will normal be what we used to have? Or will there be a new normal in how we live?

**Dr. Anthony Fauci:** I think there'll be a new normal that will not be even close to being as disruptive as it is now. I think people will pay much more attention to the ability of respiratory infections to spread. I think people will do less of the handshaking and more of the avoiding crowds and things like that, while there's still—particularly during the flu season. One of the good things that might happen as we enter into the fall and the winter with the inevitable, predictable flu season is that our change of behavior in the context of COVID-19 might actually make the flu season much less severe. If people, which I hope they do, wear masks, have physical distancing, avoid crowds, do things outdoors as much as you possibly can, wash your hands—I think we can not only control COVID, we could probably much more adequately control influenza.

**Dan LeDuc:** One last question before I let you go, and I do appreciate your time today: How is—not just the pandemic, but in our current era of what we know about technology and what we know about discovery and how people are learning—how is this modern time affecting and shaping the evolution of science?



**Dr. Anthony Fauci:** Oh, I mean, I think science is such an important part of what the entire world has gone through. I think this is going to, in many respects, get people to have a really much better appreciation of what science is, both biomedical science and, in many respects, other aspects of science, which is multifaceted.

And I think what they'll see is how science works. And I think, I hope, it will encourage more young people to make science a career, to see how important science is and what a potential and real positive impact science can have on the world. Because we're not going to completely get out of this gripping pandemic without the fruits of science in the form of therapies and vaccines. It's not going to happen spontaneously. We're going to have to go out and get it. And that's what science does.

**Dan LeDuc:** Well, Dr. Fauci, thank you for your time not just today and since March, but for your very distinguished career and everything you've done for our nation.

**Dr. Anthony Fauci:** Thank you. I appreciate you having me on your show. Thanks an awful lot.

**Dan LeDuc:** Thank you very much, sir.

Our conversations on science continues next week with Science Friday host Ira Flatow and bestselling author and theoretical physicist Carlo Rovelli.

**Ira Flatow, host of "Science Friday":** I really wanted to know how the world worked, I was lucky also to have a teacher—Mrs. Pfeffer, my eighth grade teacher—who had a science club.

**Carlo Rovelli, theoretical physicist and bestselling writer:** There is enormous beauty in science. And we see that beyond the appearances, there are more to be learned.

*[Music transition]*

**Dan LeDuc:** For The Pew Charitable Trusts, I'm Dan LeDuc, and this is "After the Fact."