A Delicate Balance

An effective government policy countering the COVID-19 pandemic relies on scientific advice. Still, there is a fine line to be tread to make the relationship between politics and science work well. Transparency is one key factor.

By Christian Schwägerl

In recent years, a phrase became popular among top American scientists: "When the going gets tough, go get Fauci." The 79-year-old immunologist was a kind of secret scientific weapon when it came to dealing with politicians, and indeed the public. Anthony Fauci is head of the NIAID, the National Institute of Allergy and Infectious Diseases. Famous for his research but with no star persona, he can clearly explain complex scientific subjects, sketch out their practical implications, and explain the consequences for politics and everyday life.

This is how, early in 2020, Dr. Fauci became the public face of American science. With the coronavirus spreading across the United States, President Donald Trump eventually recognized the illness as a huge and present danger, no mere Democratic hoax. Fauci stepped into the limelight, in person at the president's briefings, which were broadcast worldwide.

But cracks soon appeared in the relations between the president and his top scientist. Trump's pathological narcissism led him to envy Fauci's popularity among an anxious population, who admired their new "explainer-in-chief." Some people even took to wearing t-shirts with Fauci's face on them. It also became clear that Fauci wanted to prioritize public health over short-term economic considerations, a policy Trump regarded as very dangerous...to his re-election prospects.

Dr. Fauci began to publicly express frustration with a president who seemed quite unwilling to learn, and who paid no heed to scientific facts, publicly recommending the drinking of bleach and expressing faith in non-existent light therapies. "I can't jump in front of the microphone and push him down!" Fauci told *Science* magazine in March 2020.

By early summer, relations had badly broken down. Fauci appeared in public far less often, as the White House vetoed his media appearances. With the presidential election approaching, Trump disparaged his top scientist, calling him a "disaster," and dismissing his own advisors as "idiots." Fauci

was even assigned a team of bodyguards. By now, the rest is history.

Germany's experience in 2020 has been quite different, above all because Chancellor Angela Merkel is a trained scientist, with a PhD in physics. For Merkel, science is not meant to be a political performance. She declined to push Fauci's German counterpart—Christian Drosten, the head of the National Coronavirus Laboratory and Director of the Institute for Virology at Berlin's Charité hospital—into the spotlight to boost her political standing, although he would have been an appropriate figure to play the role.

Merkel has rarely appeared with scientists in public during the COVID-19 pandemic. Behind the scenes, however, the chancellor has regularly brought scientists into discussions, as at the key meeting in October 2020 between Merkel and the leaders of Germany's 16 federal states.

On the whole, the German chancellor prefers to present the science herself. In late September, she impressed the public with a live "back of the envelope" scientific calculation, used to show that, if nothing was done, a few hundred cases in August could mean 19,200 by Christmas. But outside the public eye, she has sought out contacts with scientists. From the Robert Koch Institute to the Leopoldina (German National Academy of Sciences) and the Helmholtz Association of German Research Centers, scientific institutions have contributed knowledge to the political understanding of Germany's public health situation.

A Split in the Western World

These contrasting attitudes to science could hardly be more striking. They represent a deep split in the Western world, one which goes back long before Trump's 2016 victory. In 2004, Karl Rove, a close advisor to then-President George W. Bush, reportedly dismissed those who believed politics was about the close study of reality. "We create our own reality," he said. Not so far from the "alternative facts" cited by Trump's advisor Kellyanne Conway when discussing inauguration crowd numbers in 2017.

This kind of thinking spread in Europe too, above all in the United Kingdom. Under Tony Blair's Labour government, "spin doctors" ruled the roost, not people with actual doctorates. In 2016, Conservative politician Michael Gove took a directly anti-science stance: during a debate on Brexit, he famously said, "People in this country have had enough of experts." Similar trends have occurred in Hungary, where the government has the scientific community on a tight leash, and in Brazil, where President Jair Bolsonaro has tried to stop the publication of data on coronavirus and on Amazon deforestation.

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The governments of New Zealand, Canada, and Germany stand as counter-

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examples, having at least tried to orient policy—on climate change, the pandemic, and other issues, including dangerous declines in biodiversity—according to scientific research.

To understand these conflicts around science and politics, we need to look back at the history of science. This does not make for comfortable reading on any side of the debate. The historical record disproves simplistic models in which "good politics" always listens to "good science," while bad politics does not.

Complicated Relations

Science has profoundly enriched the relationship between politics and society. Deploying evidence, arguing for proof, and refuting error, science has contributed to a massive growth in material and physical wellbeing, not least with breakthroughs in medicine, agriculture, and communications. Beyond even that, science has also been central to the emergence of open, democratic societies.

The early Enlightenment held to the utopian idea of a Republic of Scholars, in which rationality would be the only principle and guide. As science flourished, it developed methods against superstition, but these also worked against aristocratic desires for total power. The scientific method generated a growing body of knowledge. More importantly, however, it encouraged a subversive process of evidence gathering, which could render powerless even a supposedly omnipotent pope or king.

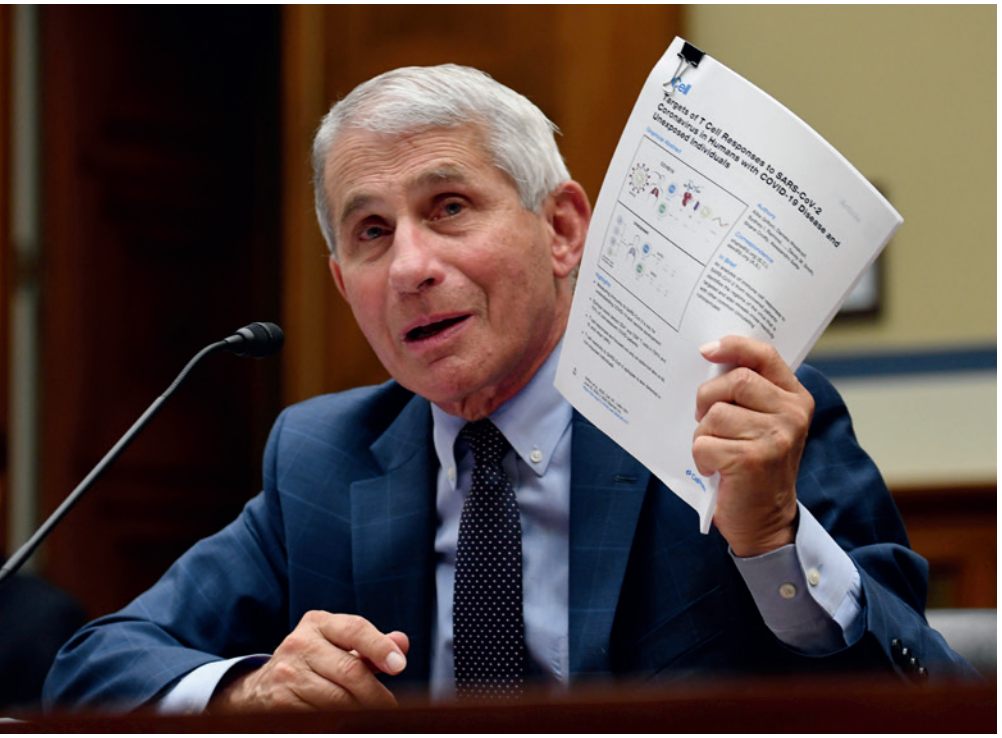
But an idyllic or idealistic story of science's influence on politics would not tell the whole truth. Over the last century, politics and science have often made highly problematic alliances.

Scientists were enablers and accomplices in colonialism and played a key role in the horrific escalation of war in the first half of the 20th century. Scientists have all too willingly supported political ideologies, like the Social Darwinism preached by Herbert Spencer. Nazi Germany's genocidal plans and human experiments were crimes substantially driven by scientists. The scientific community has subjected its role in Nazi crimes to serious critical scrutiny—although the process is hardly complete—and drawn broad conclusions. But there has not yet been intense debate around science's role in the imperialist and colonial genocides of the West.

Since World War II, science has been more obliged than ever to uphold its own basic values. It has not shied away from presenting politicians with uncomfortable truths. In free Western countries, impressive networks of scientific advisors on political issues have been created.

In Germany, this network has several layers. In terms of government, the most closely-integrated science is the "departmental research" carried out within federal and state governments. These days, the most prominent of these institutions is the Robert Koch Institute, headquartered in Berlin. Coronavirus research has thrust this institution into the spotlight, and it continues to provide the government with daily information and advice. The large research institutions of the Helmholtz Association are also working closely with the Federal Ministry of Research, although they remain organizationally separate from government. The Helmholtz Association's research aims are adjusted regularly, but the basic idea remains that of free scientific inquiry. Since the outbreak of the COVID-19 pandemic, the Helmholtz Center for Infection Research in Braunschweig has played a key role in creating models of the pandemic's spread.

The Leopoldina is the third type of institution offering public policy advice.



The "public face of American science" began to express frustration with a president who paid no heed to facts: Dr. Anthony Fauci testifies during a hearing on the coronavirus crisis at the US Congress, July 2020

The head virologist at the Charité hospital has emphatically denied he was a sort of "replacement chancellor" for the time of the pandemic: Christian Drosten at his laboratory in Berlin

US President Donald Trump came to denigrate his own experts

Founded in 1652, it is Germany's oldest scientific organization, and strongly emphasizes its autonomy and independence. In 2008, it relaunched as the "National Academy of Sciences," a role in which the Leopoldina regularly publishes recommendations on issues from COVID-19 to biodiversity. For its part, the German parliament (the Bundestag) has its own institutions for research and consultation, including its Research Services and the Office for Technology Impact Assessment. Additionally, parliamentary "Enquête Commissions" offer a unique format for producing science-based advice.

Across federal and state levels, there are numerous scientific advice committees in all areas of politics, employing university academics and expert from other institutes. Most Western countries have similarly broad networks. However, in the United States the leadership of the White House Office of Science and Technology Policy (OSTP) remained vacant for 18 months after Trump's 2016 victory.

Getting It Wrong, Sometimes

In general, scientific advice is not lacking, and has very often formed the basis for good and feasible political decisions. But not everything runs perfectly: disciplinary closed-mindedness is one key problem, as is the very narrow thematic composition of committees. For example, most academic economists offering policy advice still wrongly regard environmental and climate protection as "externalities," as if life's natural basis could be something merely extra, an add-on to what is supposed to be reality.

Major errors have also occurred: in Germany, demographers long predicted rapid and unavoidable population decline, and were widely listened to in the political world. However, population decline will probably not now occur until at least 2030. This means all planning—whether urban development, energy reform, or public debt policy—has been based on false premises. Fortunately, there are many examples of scientists supplying timely, well-founded, thorough advice on problems going beyond the usual political time horizon (i.e. the next election). Above all, this has been true for climate change. Between 1987 and 1990 (!), the parliamentary Enquête Commission on "Provisions to Protect the Earth's Atmosphere" was already offering decisive warnings for humanity, helping climate politics to emerge as a field in its own right.

Thus, when the coronavirus first began to circulate early in 2020, both Germany and the United States were well prepared for scientists to advise political leadership. What happened next will probably dominate debate on science-politics relations for many years to come. An entire generation of historians of science will study how President Trump denigrated his own experts, including Fauci and the entire Centers for Disease Control, both in media comments and in practical contexts.

But even Germany has seen differences in opinion on how politicians should best respond to advice. Good scientific advice

should always rely on the most up-to-date research, and should be open about any gaps in its knowledge. It needs to acknowledge errors, and respect the time pressure that politicians are under. Ideally, advice should offer several possible actions, not just one. Above all, scientists should be clear on their own role, and refrain from playing politics.

Behind the Scenes

During the pandemic, scientific advice in Germany has largely taken place behind the scenes. There is no central national scientific committee, and Merkel has decided not to have scientists stand at her side. Even so, several individuals have come to dominant media coverage.

Scientific figures who seem to embody scientific ideals include Christian Drosten, head virologist at Berlin's Charité hospital, and Sandra Ciesek, head of Frankfurt University's Institute for Virology. Early in the debate, Drosten emphatically denied he was a sort of "replacement chancellor" for the pandemic. In many interviews, he has openly acknowledged his own errors, for example his misunderstanding of the effectiveness of masks. He has helped a wide audience understand that research on COVID-19 in children and the young is unsettled and incomplete. Drosten's "one man show" has presented politicians with options, while his ongoing dialogue with the general public has emphasized collective learning processes in the pandemic.

Good scientific advice needs to be open about gaps in its present knowledge

As a public figure, Hendrik Streeck, head of virology at Bonn University, presents a stark contrast with Drosten. Ever since the earliest reports on the new virus, Streeck has continually minimized its dangers. In April, he inflated his own fieldwork, making claims for national transmission based on his narrow study of contagion in Gangelt, a village in the federal state of North Rhine-Westphalia. His claims were presented at a joint press conference with Armin Laschet, prime minister of North Rhine-Westphalia. Streeck's intervention helped bolster Laschet's demands for a rapid end to the first lockdown, proposals which succeeded some days later. The Bonn virologist has used his position to popularize ideas discredited in scientific literature, in particular "herd immunity" theories. These claim that widespread infection among the young, even in the absence of a vaccine, could offer collective defense to society.

As the year has gone on, Streeck's messaging has come disquietingly close to that emerging from Trump's White House. At times, his ideas have been based on false assumptions, for example about how long and how well antibodies can protect those recovering from COVID-19, and about dangers to young people, even outside supposed high-risk groups. There has been much speculation about possible motivations for Streeck's interventions. What is clear is that his pronouncements have brought him substantial media attention, and won him the support of the powerful

media group Axel Springer and its owner, the US investment company KKR. One KKR subsidiary, Deutsche Glasfaser, has helped to co-finance Streeck's "Heinsburg" study in North Rhine-Westphalia.

A Communication Gap

In one way, the contrast between Drosten and Ciesek and scientists like Streeck revealed a healthy pluralism of opinion in Germany, although for politicians it presents a problem of whom to trust. But what became clear, above all, was that the German science establishment as a whole was unprepared to communicate with the public in an emergency. In particular, it did not know how to deal with problematic figures. In February 2020 a huge communication gap opened up, into which poured conspiracy theorists, ideologists, and quack doctors.

Accustomed to announcing breakthroughs, science communication professionals in Europe and the US have struggled to counteract conspiracy theorists on social media. Effective political advice has been hampered by a failure to weigh statements of different value, and to act against problematic assertions by some researchers. This has prompted a wave of critical interventions, like that of the "Siggen Circle," an important forum for science communication professionals. A statement from October 2020 contained down-to-earth advice: "If in doubt, keep your mouth shut!"

In a pandemic, people want rapid certainties and guarantees, for example on the availability of a vaccine. During the coronavirus outbreak, science has successfully delivered gains in record time: for example, establishing the molecular structure of SARS-CoV-2, and identifying its differences from other pathogens. Other issues, like COVID-19's long-term consequences, have seen slower resolution. Some questions—where the virus originated, for example—could take years to answer. Many much-heralded announcements, for example on the effectiveness of medicines like Remdesivir, have ultimately turned out to be false. Both politicians and the population at large are now seeing "science in the making," as the whole world has turned into a real-life laboratory, where the health and survival of millions depend on the smooth functioning of science and its processes of knowledge production.

In a pandemic, people want rapid certainties and guarantees, also on a vaccine

Every day we are reminded of Karl Popper, the philosopher who described science as the "present state of error." Today, both politicians and the general public have a unique opportunity to understand the great strength of the scientific method—to provide knowledge to act on, as is the case in both the climate and the COVID-19 crises—and precisely its extraordinary openness and capacity for learning, which helps politicians to keep an open mind. IP