

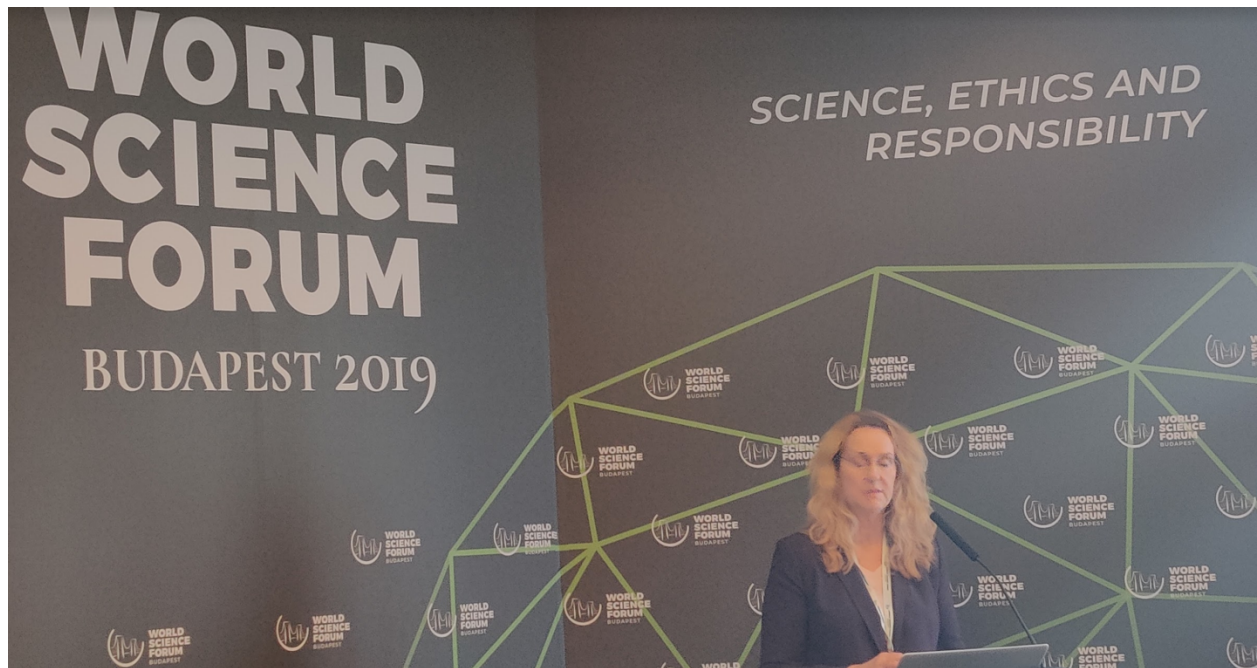
# Science Engagement: Redefining the Uneasy Relations with Politics and Policy. Some Transatlantic Dimensions



Moderator, Dr Teresa Stoepler (Executive Director, InterAcademy Partnership for Policy), started by letting the audience know that the panelists (Cary Funk, Alexander Gerber, Claudia Aradau, Jason Reifler, and Sierd Cloetingh) were asked to address the following questions:

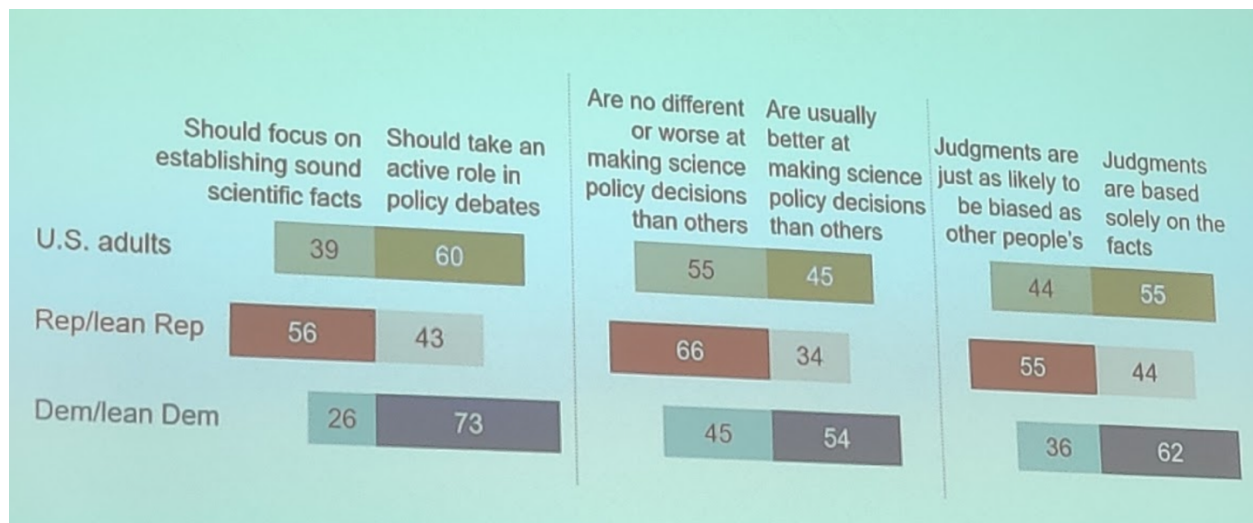
- Is trust in science declining? If so, by who?
- What is the role being played by the Internet and fake news?
- Is science self-correcting?
- Can open science save us?
- How should scientists engage the community?
- What is the responsibility of the scientific community?

Dr Stoepler then introduced the first speaker – Dr Cary Funk (Director, Science and Society Research, Pew Research Center) – who presented the results from a recent PEW study, which focused on Trust and Mistrust in American views of Scientific Experts.



The study highlighted the fact that public trust in scientists increased from 21% (in 2016) to 35% (in 2019), which stands in contrast to other professional groups. There are cross currents in public opinion and further segmentation of the scientific community leads to interesting insights. For example, trust in medical doctors and dietitians is higher than that for environmental health specialists and environmental researchers.

The study showed that the majority of Americans say they are more apt to trust research when the data is openly available. Also, there are divides on how Americans think about scientific experts. Six in ten people thought scientists should take an active role in public policy. Forty-five percent of respondents thought that scientific experts are usually better at making science policy decisions than others; while fifty-five percent believed that the judgements of scientific experts are based solely on the facts. Interestingly enough, the majority of Republican participants believed that scientific experts 1) should stay out of public debates, 2) are no different or worse at making science policy decisions than others, and 3) are just as likely to be biased as others.



Dr Funk concluded her talk by highlighting that most Americans see science as bringing benefits to society and expect more to come.

Dr Stoepler then introduced the next speaker, Jason Reifler (Professor of Political Science, University of Exeter), who presented highlights from his European Research Commission funded project, Debunker.



About two years after the start of the Iraq war, portions of the United States of America still believed that Iraq had Weapons of Mass Destruction (WMDs). In one study, Prof Reifler sought to understand what it would take to update peoples' belief. In 2015, he had study participants read the re-election campaign letter from George W Bush; with half of the study getting an extra paragraph that highlighted that no WMDs were found. The study found that liberals who got the extra paragraph were less likely to say Iraq had WMDs and that conservatives who got the extra paragraph were more likely to say that Iraq had WMDs. This is called the "backfire effect". Fortunately, this effect is not universal and was only found to occur in two of five studies.

While the backfire effect does occur, it is the exception rather than the rule. In several studies, Prof Reifler's team was able to show that misperceptions can be corrected. However, this does not necessarily result in changes in behavior.

In another study on fake news, Prof Reifler's team aimed to measure the actual level of fake news in the United States. They discovered that around 44% of the US population visited a fake news website and that consumption of fake news is about 6% of total news consumption. Interestingly enough, the vast majority of consumption is concentrated among the 15 - 20% of the population who have the most conservative online information diets. Prof Reifler highlighted that there is an important distinction between spread (supply) of misinformation

and how people respond to misinformation (demand). On average, supply is easier to address than demand.

The final two studies that Prof Reifler spoke about focused on the interplay between misinformation and conspiracy thinking.

In the first study, his team compared the effect of an explicit conspiracy message — the false claim that Zika was intentionally spread for pharmaceutical companies to sell a vaccine. They compared that to an implicit conspiracy message, where instead of the explicit claim, they simply communicated the message “who benefits?”. These two messages were roughly equivalent in how they increased conspiracy messages. The good news was that they were able to undo this conspiracy thinking with corrections. But this is a low salience issue where people are unlikely to have strong preexisting attitudes.

The second study analyzed the impact of changing official guidelines for taking medicine. For the most part, people responded to the guidance. However, there was a subset of the population who are so confident in their own knowledge that the guidance made no difference at all. Turns out that there are individual level differences in how people respond to messages. In the end, Skepticism is a powerful tool both that aids critical thinking and in the acceptance of science. However, it can also be used to undermine scientific conclusions.



The third speaker, Claudia Aradau (Professor of International Politics, King's College London), advocated for using the concept of credibility to replace the notion of ‘post-truth’. She purported that post-truth was a pernicious trap that has been mobilized to attempt a reconfiguration of positions in different disciplines. The eventual outcome being a hierarchy between different disciplines and areas of science and that it marginalizes certain perspectives. Prof Aradau purported that credibility draws attention to the impossibility of a strict separation of internal conditions of sciences and external social and political factors. This means that one can analyze the practices of making, circulating and crediting knowledge, which are neither simply internal nor external to science. Prof Aradau raised the example of the credibility of big data; using a quote from a recent book by Helga Nowotny:

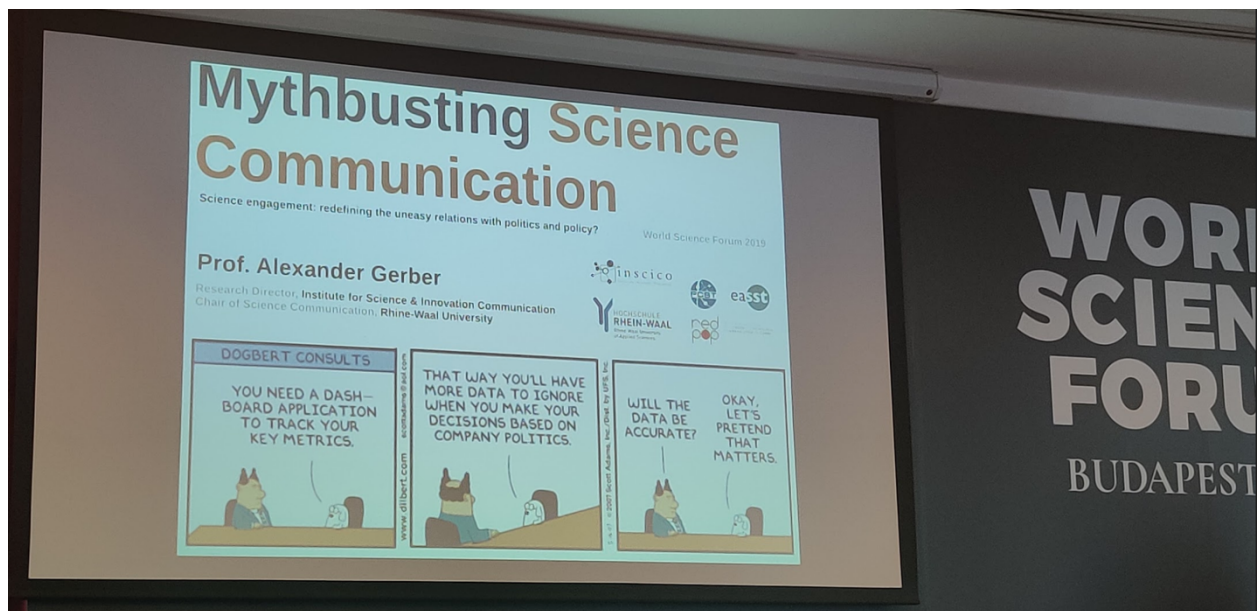
*“Statistics are collected on the basis of knowing which question to ask. The categories to be used are determined in advance, usually from governments and from above. The data on which predictive analytics are based have a different origin. They result from the sweeping collecting of all the traces we leave behind in a digital economy and society.*



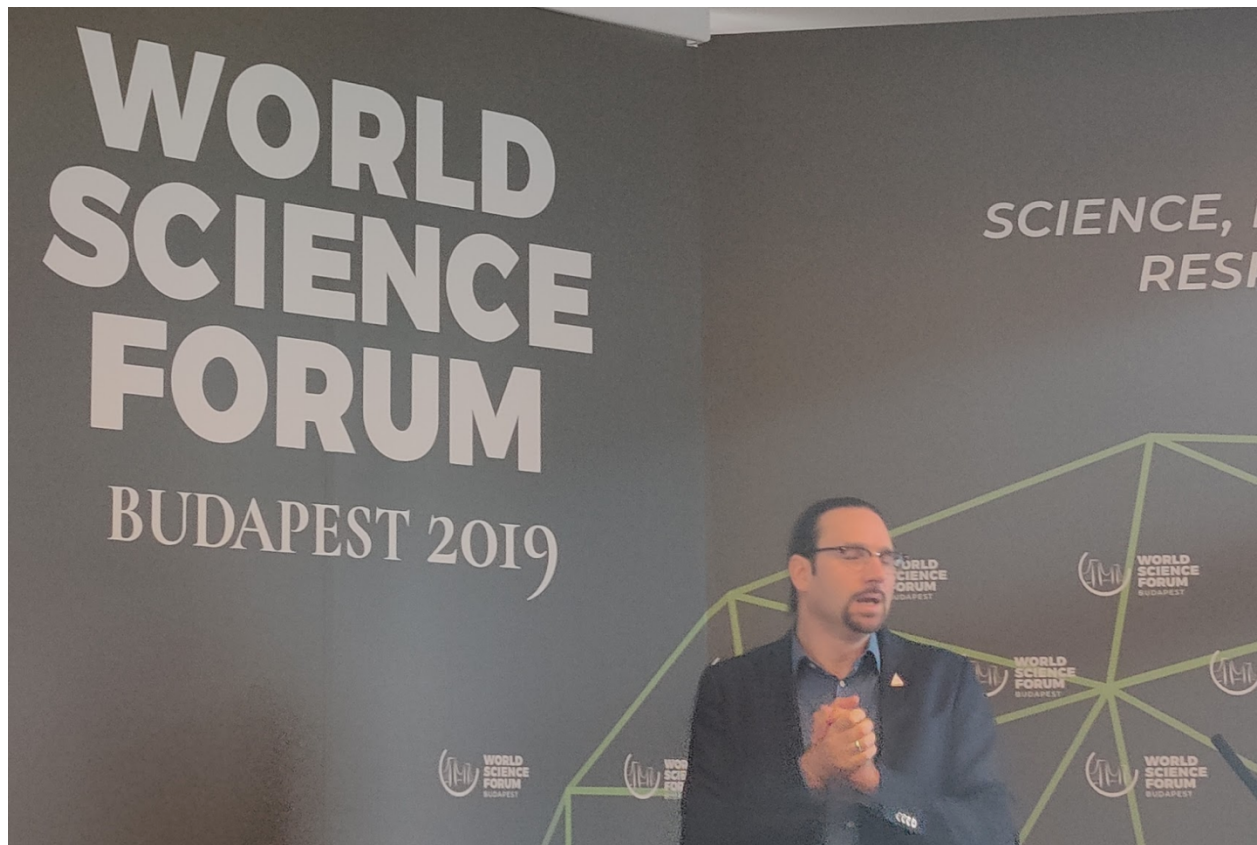
*Big data have a built-in flexibility that allows them to be used to answer questions that they were not collected for. They can be repurposed”*

Prof Aradau noted that Nowotny's conclusion that quantitative evidence has lost much of its clout is way too pessimistic for her own perspective. Prof Aradau highlighted that the march towards the extensive use of Big Data and Artificial Intelligence cannot be explained without understanding surveillance capitalism. Using credibility as a base enables us to understand the need for such a discussion.

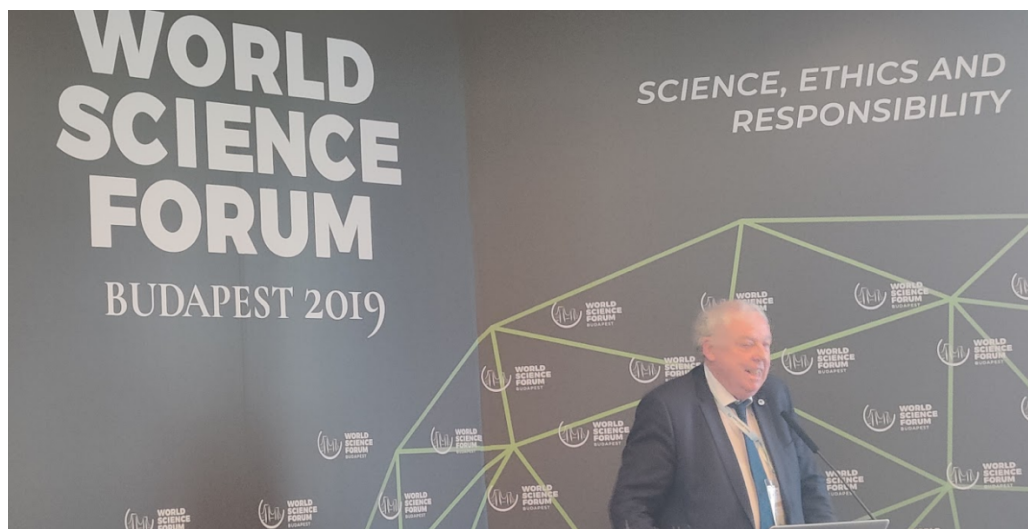
Prof Aradau's final message was that credibility can be acquired; it can be challenged and even lost. At the core of how credibility is acquired and lost is critique. She emphasized that she thought that scientists need to be more open about the controversies in their disciplines, the critiques of methods, of various perspectives and responses to problems. She encouraged the integration of not just successes but also failures, not just closed controversies but also ongoing ones.



After Dr Aradau, Dr Stoepler introduced Alexander Gerber (Programme Chair / Research Director, Rhine-Waal University / INSCICO), whose talk was focused on Mythbusting Science Communication. At the start of his talk, Prof Gerber asked the audience to rate their level of agreement with two statements. At the end of the exercise, Dr Gerber used the results to highlight the fact that the general perception is that both a knowledge deficit and a trust deficit exist between scientific experts and others.



Prof Gerber identified the two major problems as Attitude and Effect. He then posited that attitude was “branding unreasonable decisions as irrational” or “promoting or demanding reason and accusing people of being irrational”. He referred to Daniel Kahneman’s description of attitude as a “stubborn resistance to reasonable arguments” and he suggested that we need to find means of improving the process of reasoning itself. In terms of Effect, reference points matter and employing a strategy of prebunking instead of debunking for fake news is encouraged.



The final speaker was Sierd Cloetingh (President, Academia Europaea), who spoke about the work of his organization – the Science Advice for Policy by European Academies (SAPEA). SAPEA is part of the European Commission’s Scientific Advice Mechanism. Together with the Group of Chief Scientific Advisors, they provide independent scientific advice to European Commissioners to support their decision-making. SAPEA brings together expertise in engineering, humanities, medicine, natural and social sciences from across Europe. They also work to raise awareness of scientific advice and evidence in policymaking and to stimulate debate in Europe.

Dr Stoepler opened the floor for questions after Prof Cloetingh’s talk. The first question from the audience was about balancing the need for transparency and the need for discussing scientific controversies publicly while minimizing the risk of diminishing faith in science. Several panelists responded that there was a need to get more people involved and enable citizens to be objects, as well as subjects, of the scientific process.

Someone asked Dr Funk if Pew’s study had correlated trust in science with general trust. Her response was that they have the data, but have not performed that analysis.

Another attendee asked “How do you tackle the easiness or uneasiness of the notion of the independence of science? And also ensure relevance?” Prof Cloetingh responded that SAPEA does science for policy, not policy for science. He stated that evidence dominates, that sometimes there is a lot and that sometimes there is scarcity.

The final question that there was time to answer was “What if there is no visible impact of scientific knowledge on policymakers?” Panelists mentioned that there is a parallel role that scientific experts can perform with the public similar to the role of scientific evidence in policymaking. It was also mentioned that there is a need to diversify perspectives, engage stakeholders, and that governance needs to be more upstream and more anticipatory. It was emphasized that inherent in good science is good faith skepticism and that it is one of the things that undermines science communication. Good faith skepticism can be co-opted into bad faith skepticism.