



ELEPHANT

IN THE LAB

INTERVIEW

Active but not Activists: Research communication by Scientists for Future

Short title	Active but not Activists: Research communication by Scientists for Future
Long title	Active but not Activists: New forms of research communication by Scientists for Future
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Date published	24 June, 2019
DOI	10.5281/zenodo.3268593
Cite as (APA)	Hagedorn, G. (2019). Active but not Activists: New forms of research communication by Scientists for Future. <i>Elephant in the Lab</i> . DOI: https://doi.org/10.5281/zenodo.3268593

As the initiator of the movement “Scientists for future,” could you give us a “peek behind the scenes”: How did you come up with the idea and how did the concept evolve?

Like many others, I was concerned by the slow progress of the sustainability agenda. That is, not just climate change, but also, for example, biodiversity loss, loss of soils, food security, and questions of human rights and justice. The 2030 SDG agenda of the United Nations provides a reasonable overview of the spectrum of challenges that humanity is facing. But even though the problems are – somewhat vaguely – known and many people despair about it, it seems that our

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industrialized societies are reluctant or even unwilling to address the challenges through effective action.

Because scientific or scholarly results do not reach the majority of citizens, we continue to live – to a certain sense – in the past. For example, many people in Germany, associate “sustainable development” with a traditional framing of “we need to show the poor countries how to create a modern industrialized state”. They don’t realize that our own country has to deal with far bigger challenges in becoming sustainable than, for example, most countries of the African continent. If everyone would be living like we in Germany, if everyone would use as many resources, we would need three planets. Our lifestyle is causing social and environmental injustice and deterioration at a planetary scale. We very quickly need to change and transform our society so that we can live within the planetary boundaries of a single planet. We have a good life, indeed, but it comes with a price that our children will have to pay.

So, as scientists, we are struggling to communicate our situational awareness, for example, for the biodiversity sector, the climate change sector and the agricultural sector. I have been trying this for years and have largely failed, even among many of my colleagues. And for decades many people in many countries, old and young people, have worked much harder than I. When Greta Thunberg started to receive media attention, I was starting to become hopeful. She got a message through and received extensive media attention where scientists had failed. Then, amazingly, many young German students followed her example and started to strike on Fridays, demanding a change in our societal attitudes and politics. However, many politicians and media outlets avoided the factual questions raised by the students, preferring to discuss truancy and the form of the protest. Some even started personal attacks – the old *ad hominem* fallacy. My feeling was that scientists should do something. By basing their demands and assumptions on science, these young people had allied themselves with science, saying: help us to convince our societies to secure a good future. Science, or rather scientists, needed to act.

Inspired by a Belgian initiative at the end of January, I started to reach out to about thirty friends from various institutions all over Germany, asking whether they knew how they felt about it and whether they knew about others who had already begun to work on this. The result was that many agreed with this being a good idea, very few felt they could justify investing time. Also, because they thought it being too political, no institution or science association wanted to have anything to do with it. Ultimately, we started a grassroots movement our free time: “Scientists for future” (the idea for the name came from Volker Quaschnig). It began with a handful of people, but once we overcame the initial reservation, it became an amazing enterprise. The core team quickly grew to about 40 people, and many more people supported the initiative. It started rolling almost faster than we could handle it. People suddenly dropped other things they had been doing and supported the initiative with an incredible amount of time. And we quickly realized that this

was strong enough to reach out to our Austrian and Swiss colleagues to make it joint German-Austrian-Swiss initiative – a move that greatly contributed to the overall success.

Over 26 000 researchers signed the statement, which is an impressive number, but there are still more researchers dealing with the topic of climate change. What held them from signing?

The number of signatories is not a good estimate of the total engagement. Not everyone who wanted to was able to sign the statement. One reason were technical problems (e.g., some confirmation emails were misclassified as spam), another reason our limited resources. After all, this was an unfunded initiative run in the spare time of a few dozen people. We had an intense period of about six weeks working very hard executing our communication plan. But after the press conference and the large Fridays for Future demonstration on the 15th of May, we stopped all active communication efforts and just kept the signature open for another seven days. We, the core team behind the initiative, were totally exhausted.

Many people later said that they would have signed if they had known. But on the other side, a proper outreach needs much effort. For example, there is no mailing list in Germany where you can find all scientists and scholars who work on the various sustainability topics and only very few research institutions sent our statement via their university-distribution-channels. I am actually quite impressed that some heads of universities took that action and informed all their staff; but this was a very small fraction of universities in Germany, Austria and Switzerland.

Researchers do have different opinions as to whether an initiative like Scientists for Future is an appropriate action for scientists and scholars or not. Some researchers, whom we asked personally, did not sign because of political reservations. They believe that it is not appropriate for researchers to speak up in the political arena and that they should limit their action to scientific publications. But I am also very happy to have later spoken with a number of researchers who had changed their minds during the course of the initiative.

Where is the border between being an impartial researcher and an activist?

In my opinion, there are no impartial researchers – research is always done by people. That is why our initiative is called “Scientists for future”, not “Science for future”. We are people and have contacts with society, which vary depending on our employment situation. Some are working in academic institutions where mostly the number and impact factor of peer-reviewed publications counts and the concept of responsible research is often frowned upon. Some researchers are working for big corporations. Some are working for governments or political parties, others for NGOs. Most of these remain true scientists and scholars, but they all need to balance their scientific ethics with their societal ethics. There are, of course, scientists who refrain from asking questions that they know would endanger their employment situation or career. But by and large, they still do good science. And, of course, people exist who are willing to say anything as long as they are paid for it (for example, denying the well-established foundations

of climate science), but personally, I have only very rarely encountered such stereotypically corrupt scientists.

The idea of a genuinely neutral science in a genuinely political society is just nonsense. But I do not believe we are “activists.” The critical question is: To which standards should scientists hold themselves responsible? How do we succeed in complying responsively with scientific standards of transparency and honesty of peer review?

For example: The statement of Scientists for Future was not written by an “activist group” that had a particular interest and tried to find arguments to support this. Even though we were pro-active, we put much effort into validating our arguments. Many scientists and scholars scrutinized and criticized the statement, others responded, checked, and resolved criticism. This does not mean that the statement is perfect, but it is the work of a scientific community, elaborated under scientific standards.

No-one in our group had the full spectrum of expertise that was required. We had to figure out how to understand contradictions between different facts and statements and how to communicate that in a very understandable, short way. If you write a 1600 page IPCC or IPBES-Report you have space to explain why results may be viewed differently. If you want to keep it short and communicable and understandable by young pupils or students, you have to discuss what can be said and at some points drop certain statements, because they are too difficult to communicate and in the end not a priority. I think that is perfectly valid. We did not drop any contradictory evidence, and we would like to challenge everyone to bring up such issues where our effort might have fallen short.

Initiatives like yours are about increasing the societal impact of science. Should there, in your opinion, be happening more to strengthen the ties between research and society? And, if yes, how should that happen?

Yes, we need much more science communication!

Now, science communication is traditionally thought of as a one-way street: From the sacred halls of science down to the ignorant general public. And despite the sarcasm: this is a relevant issue.

However, I am not sure that science communication currently addresses the right priorities. The majority of activities seems to be geared to communicate the most recent advances in science. Anything older is not “news” and thus not noteworthy. Of course, older discoveries are taught at school, college, and university. But this leaves the vast majority of our society with a vast knowledge gap in between. And, in my opinion, this gap of perhaps 30 to 50 years is causing real problems concerning the ability of our society to address global sustainability challenges.

To give you an example: I anecdotally observe that many politicians are stuck in the '70s or '80s when it comes to framing the challenges of the energy transition. In the 1970s, the dominant

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question was: When are we running out of fossil fuels? People quickly discovered that any calculation based on known reserves, exploitable under current prices results in a severe underestimation. We probably still have around 70 to over 100 years until humanity runs out of fossil fuels.

However, since the beginning of the '80s, scientists started to understand that the question of fossil fuels exhaustion is entirely irrelevant. The relevant question is how to deal with the space limitations of the garbage dump used for the CO₂ produced when we burn fossil fuels. This garbage dump is our atmosphere. While CO₂ is not poisonous, it causes global warming. And, unlike some other greenhouse gases, it does not go away (that is, it does not decompose). Any CO₂ we put in our garbage dump is there to stay until clean up the mess we have produced. When we consider acceptable levels of global warming, scientists conclude that we can burn at most 20 % of the remaining fossil fuel reserves. The campaign “keep it in the ground” is based on scientific facts. And we have like zero years, to start with drastical measures to stay within our planetary boundaries with the atmosphere and climate.

To come back to science communication: So, we have information well known to experts for a long time but unknown to many citizens and politicians. And this information is highly relevant to critical political decisions. (I do not mean to imply that politics is simply a question of having the right information. But information does play an important role in the decision making of our democracy.) And the decisions are urgent, that is we cannot wait for the people educated in the 1970s to 1990s to retire before a rational decision can be taken.

So, how does science communication deal with this? How do we find a new mode of learning for citizens, politicians, economists in a world where everything is happening faster and faster, where resource-use, overfishing, deforestation, soil loss, CO₂-emission are accelerating? How do we make sure that citizens, politicians, and experts continue learning and don't stay at the level of knowledge they gained in their 20s? How do we, as scientists, serve our society in highlighting important information known already for many years, sometimes decades?

Some excellent formats exist on TV, on youtube, etc. But, usually, these do not reach many people outside the bubble of those interested in science and technology. One excellent contribution can come from institutions like museums – which is why I went there. But overall, the science communication activities in this field are, in my opinion, yet insufficient.

Now, this was a long discussion on top-down science communication. But let me briefly finish with the other direction. I believe a major challenge in science communication is the need for bi-directional communication.

As scientists, we are in an incredibly privileged and powerful position. But many of us are so wrapped up in their daily routine and artificial goals of succeeding with the next grant and

getting the next paper published in a prestigious journal that they are unaware of the societal challenges their peers have identified. We have a scientific system which often doesn't support scholars who are willing to address societal challenges. You can build yourself a good career by studying small questions in well known, conventional "publishable" fields – regardless of the importance of this research to society. Building your career by tackling tough questions is much more difficult.

I do not think that it is a good idea to force scientists or scholars to work on problems they find uninteresting or believe they are unable to contribute to. We need to preserve the freedom of science. But to do that, we, as scientists and scholars, need to hold ourselves more accountable to the societal challenges. We need to get genuinely interested in societal problems. Communicating with people whose life is in danger or who fear for their future or the future of their children is one way to motivate researchers to – perhaps partially – shift their focus and priorities.

Related publications:

Hagedorn G., et al. (2019). Concerns of young protesters are justified. *Science*, 364, 139–40. [LINK](#)

Hagedorn, G., Loew, T., Seneviratne, S. I., Lucht, W., Beck, M. L., Hesse, J., ... & Zens, J. (2019). The concerns of the young protesters are justified: A statement by Scientists for Future concerning the protests for more climate protection. *GAIA-Ecological Perspectives for Science and Society*, 28(2), 79-87. [LINK](#)