Scientific Citizenship Needs Debate

Genesis and Consequences

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Abstract:

From antiquity on to the 21st century: In historical terms, debates have turned out a highly important social tool. They provide the checks and balances in democratic systems. Scientific research, however, follows very traditional paternalistic patterns. Communication remains in the ivory tower, far away from the public market place. High ranking UK scientists plead for a two-way flow of information. Inclusion of the citizens would make research results socially robust. A new partnership is arising, lay experts and scientific experts. The bridge between them is the debate.

Statement:

"I know that I don‘t know". I could give you plenty of other examples to confirm Socrates‘ humble observation: Scientific truth has always been wafer thin. And let‘s not forget: knowledge, especially scientific knowledge, is always based on hypotheses that can easily be toppled tomorrow by new ones based on more convincing data. The only truthful principle we should be living up to is this:

For the modest knowledge we do possess we need much more communication, not only among scientists, politicians and economic leaders but on all levels of society and most essentially it has to include all those people who finance research with their tax money. It is the citizens who largely foot the bill for the scientific community. Furthermore, they are also clients, consumers, users and stockholders. They buy the products which scientists have researched with tax money and which are put on the market by companies which citizens partially own. And they, the people themselves, are likely to become the beneficiaries or victims of scientific progress.

Therefore we need much more debate, essential for the public engagement in science within the framework of the civil society.

The ordinary people in any civil society constitute the third major pillar of national interest – next to its political and economic systems. Recent social research has shown that lay people are unique experts who can contribute valuable facts and know-how to the scientific process. Medical doctors who let their patients participate in the selection of an appropriate therapy for high blood pressure or even mental disorders have commented on excellent results from this cooperation. We must recognize professionals and informed lay people as supplemental partners and integrate both into scientific communication.

This is the basis for "scientific citizenship" which is to say, the obligation to accept the public as a major stakeholder in the scientific process: common people receiving a voice and being granted power. It's an absolute novelty! For many centuries it was the Catholic Church which – at least in Europe – dominated science and forced researchers like Galileo to abjure the knowledge that the earth revolves around the sun. During the last century science fell prey to political ideologies and dictators.

In Nazi Germany leading scientists and renowned institutions were misused to promote racism and euthanasia. Because Mendelian genetics stood in contradiction to fundamentalistic Marxism, it was prohibited by Stalin – the result being a major catastrophe for Russian agriculture. After World War II the military complex became the chief motor for science and technology, and since the end of the Cold War scientific research is increasingly dominated by industry. "Money has replaced curiosity as the driving force of science," Nobel prize winner Kary Mullis has said with regret.

The consequences of this domination have been described by Sheldon Rampton and John Stauber in their book: "Trust us, We're Experts! How Industry Manipulates Science and Gambles with Your Future". In the early 1990s US tobacco companies secretly paid 13 scientists a total of 156 000 dollars to send favorable letters drafted by industry law firms to influential medical journals. Today, cancer patients are fighting back and suing the industry for billions of dollars.

These examples show that research has always been embedded in power systems and that these have always attempted to exercise their influence. How to stop this? By implanting more checks and balances and democratizing the knowledge production system. For centuries it has been working as a monopoly filtering information from top to bottom, a practice dubbed by the British social scientist Brian Wynne as the "Deficit Model" because it assumes that ordinary people can't comprehend complex information.

However, this one-way process is in the long term self-defeating because it erodes public confidence. 63 percent of Europeans believe that scientists have too much power, a fact that is considered dangerous. The solution to the problem is to impose a two-way democratic or multipolar system in which information and communication circulate freely from the top down and from the bottom up. This free flow allows knowledge to reach all niches of society and provide everyone with useful feedback channels. I call this the Galileo Model because it places average people at the center like the sun in our planetary system and sets institutions in orbit around them.

Whereas in the 17th century king Louis 14th proclaimed, "I am the state," citizens in the 21st century legitimately and rightfully insist: "We are the state."

In other words, throughout history societies were constructed like Egyptian pyramids, steep and with a few leaders on top who made decisions for the people below. The advent of democratic constitutions has leveled the pyramids and hierarchies and has introduced participation by the lay people.

Of course, this creates much more conflict - but isn't this what democracy is all about and isn't that its strength? "You have to allow controversy before confidence can develop", says Sir Robert May, former scientific advisor of the British Prime Minister. Struggles over contrary positions integrate society, pull in the dissidents as well as the indifferent people, break their isolation, give them a voice and build consensus among conflicting groups.

Debates are the foundation of democracies and that's the reason why we need more of them, not only about highlights on the political agenda, but above all about science. We will have reached a state of scientific literacy when "access to science is as natural as

access to art, literature, music", foresees John Durant. He was in the 1990s the inventor and promoter of Public Understanding of Science and Humanities PUSH, which the European Commission has changed into „Science and Society“. Edelgard Bulmahn, Germany's former Federal Minister of Science and Technology, found another example which especially now during the world championship of soccer in South Africa strikes us: Science has become main stream, she said, when "science news is as feverishly discussed as the latest soccer and football scores".

This might be a very popular view of a politician to grab media attention, some might object. Michael Gibbons, Secretary General of the Association of Commonwealth Universities, adds some more academic ingredients. He is proposing a new social contract which ensures that scientific knowledge be "socially robust", and that its production be seen by society to be both transparent and participative.

The traditional autocratic science in which problems are set and solved in ivory towers by the academic community he calls "mode 1". "Mode 2" works by contrast transdisciplinarily with a wide set of practitioners on problems defined in localized contexts. Mode 2 addresses the needs of society more thoroughly. It is more democratic, permeable. It provides lifelong learning, breaks down hierarchies, shares resources and reinforces common sense.

Let me come to the end. In order to compensate the Deficit Model the afore mentioned Brian Wynne stresses the importance of what he calls non-expert knowledge or "lay knowledgeability" which does not correspond to official research. He quotes people saying to scientists: "It's not that I don't believe you, but what you say isn't true in my particular circumstance. Wynne: "People are not anti-science, they are pro-better science!"

His colleague, Ulrike Felt from Vienna University, supports Wynne's view and his open call for "lay experts". Bruno Latour from the Paris Ecole des Mines, one of the leading sociologists and philosophers of our time, is a step ahead. He raises the question whether the representative democracy needs to be supplemented by a technical democracy and he proposes to call lay experts "co-researchers". The battle cry of the Boston Tea Party "No Taxation without Representation" led the American colonists to seek freedom and independence from the British crown.

Bruno Latour has picked up this famous sentence, adapted it to technology-based modern societies and formulated an intriguing question which some might find heretical: "No innovation without representation?"

With this session we shall like to kick off the Europe-wide debate on this question and how science, politics, citizens and media connect!

Source:

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