



# ELEPHANT

IN THE LAB

## INTERVIEW

### What's the Value of Social Science?

<b>Short title</b>	What's the Value of Social Science?
<b>Long title</b>	The value of social science, moral and ethical responsibilities of scientists. An Interview by Svetluša Surova.
<b>Authors</b>	Arthur Lupia <sup>1</sup>
<b>Author affiliation</b>	<sup>1</sup> Hal R Varian Collegiate Professor of Political Science at the University of Michigan
<b>Author bios</b>	Arthur Lupia is the Hal R Varian Collegiate Professor of Political Science. He examines how people make decisions when they lack information and how they manage complex information flows. He has advised many science organisations on how to communicate science to broad audiences and how to convey complicated ideas in politicized contexts. He has received multiple honours for this work, including the Ithiel de Sola Pool Award from the American Political Science Association, and the (U.S.) National Academy of Sciences' Award for Initiatives in Research. He is an elected member of the American Academy of Arts and Sciences and a Fellow of the American Association for the Advancement of Science. He has been a Guggenheim Fellow and was one of the inaugural Andrew Carnegie Fellows. In his opinion, the public value of science and transparency in research is up to scientists.
<b>Author social links</b>	<a href="#">ORCID</a> – <a href="#">Twitter</a>
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**What is the value of social science today?**

For me, the value of social science is ultimately about the quality of life. What social science does is that it helps us to take observations of the world and put them into a form where we can understand more about how the world works. We can then use social science to anticipate likely consequences of our actions. We can understand a bit more of how other people see us, how other people see society. All those things affect the quality of life. Social science can help us make better decisions.

**How can a social scientist have an impact on society?**

Some people ask about the value of science and wonder why science should get more money. Sometimes, I try to explain science as a product of an important transaction. What do I mean by that? To be a scientist you need some materials, paper, a lab, an office and other things. Someone pays for that. In many cases, these materials are supplied by universities and colleges. But who pays for the colleges and universities? The people do — sometimes through governments and sometimes through tuition. Why do they pay? A common rationale is that paying for a service leads to a socially beneficial transaction. People pay for materials and scientists use them to create useful discoveries. Scientists in return, offer two things. One is information. We collect data, we categorize, and curate information — some of this information is quite valuable and only available through science. The second thing science supplies is explanation. We try to explain things, say what they mean, how they relate to life. Everything that scientists do falls into these two categories, a book, a video, a lecture, a poster. It has information and meaning in it. In sum the transaction is information and meaning in exchange for support.

**Why should people trust scientists rather than others who provide information?**

One answer is that if you follow scientific methods as a scientist, then what you find doesn't depend on who the scientist is, what they look like, what country they are from. It is a product of the method. If the method has been followed, the finding should be true for anyone who applies the method. Sometimes, people who offer information have good intentions, but are not skilled in the types of measurement and analytic skills that are core parts of the scientific method. In those cases, it is often harder to verify whether their claims would be true if subjected to the scientific method.

**How is it possible to communicate the value of science in countries and times when people don't have trust in scientists and scientific findings? What do you suggest?**

In today's society, there are so many people that try to sell you something. And if we as scientists just say "you have to listen to us and give us more money", we sound just like everyone else who is trying to sell a product that no one wants. Are we just like everybody else? We are not better. People in science have motivations, ambitions, and human failings just like everyone else. So, for me, the key to

communicating the value is to learn about the needs of the people we are speaking to and then identify true examples of where science has improved their lives in ways that are important to them.

For example, several years ago, there was an Ebola crisis. Some people in the United States contracted the disease. People were scared. Cities across the country were preparing for the outbreak. The preparation would cost tens, or possibly hundreds of millions of dollars. More concerning was the loss of life that some people projected. So, the question was, what will we do when the Ebola crisis breaks out? What many people don't know is that research in cultural anthropology helped to answer the question. Scientists of that discipline shared their findings on the spread of Ebola in Africa with government officials. They found that in countries where burial practices included contact with the dead, the disease spread quickly. Whereas in countries, where burial practices didn't involve contact with dead, disease didn't spread. So, right away, government agencies in the USA ordered first responders and medical personnel to wear full hazmat suits when in contact with the infected. This practice stopped the spread of Ebola in the United States and saved many lives. So, when people ask me, "Why do we need a field like cultural anthropology?" my answer often starts with this example.

### **Can science also decrease people's quality of life?**

There are some scientific findings that, applied in certain ways, can lead to people dying. So, it is very important for scientists to think about the implications of what they are doing. And if you find something that can cause harm, I believe, they shouldn't stop their study there. They should work to find real and effective ways to prevent this harm.

### **What kind of responsibility do scientists have towards other people, towards a broader public?**

When you are a scientist you have public responsibility to apply scientific methods, to be honest about what you are doing, about cases you are collecting and conclusions you are drawing. Moreover, when you go to the public, when you want to say things and publish your results, you also have a moral and ethical responsibility.

### **What are the greater moral and ethical obligations of scientists?**

I think that scientists in state funded universities have an obligation to give it back to society, to honor and respect people who have been giving things to them. For those reasons, you have to be open about what you have done and why you have done as you have done. People have the right to know, that's an obligation. Also, I think that scientists cross a line when they leave a lab and go to public.

### **How and why should social science be funded?**

Who should fund science is not a question that science can answer. It's a moral and ethical question about how we use our resources. One of the things I can say about science funding is that science funding can be what we call a "public good." A public good is one whose benefit is non-exclusive. That it can help lots of people at the

same time. Take an example of street lights. Street lights are public goods. They can light a way for you, but they can also light a way for me.

It is not like if you go to a restaurant and have dinner, if one person eats a dinner no one else can have it. Whereas a street light is a public good, science can be public good. We can discover things in one lab that are true for the whole world.

A concern for public goods is who pays for them. Everyone prefers that someone else pays for street lights. It is similar for science. In economics, the prediction is that the private sector will not supply the right amount of public goods. The reason is that companies, when left to their own devices, make decisions that make money for them. If they discover something that will help all their competitors, they won't want to pay for it. So, someone else, like government, is often the one that pays for street lights and for scientific research.

One of the arguments for the public funding of the science is that if there is a scientific finding that can help a country, governments have an incentive to fund it and everybody can benefit from it. That is one argument why governments should fund science. But ultimately, this question has a big moral and ethical part – and it can be different for different countries. There are some countries where societies who have such desperate conditions, either security issues, poverty, or illness, that they decide to take care of urgent needs they have. The other countries have ability to put more money into science. It's great if they can do that. But there is no universally correct answer to the question.

**From the moral and ethical point of view, who should benefit from scientific findings?**

I'd like scientific findings to be shared. During this interview, we are sitting next to computer, voice recorder and smartphones. Scientific findings were involved in all of those things. All these devices exist because companies employed scientists. Even if my first preference was for all science to be shared, I recognize that these devices around us wouldn't exist if the companies would not think about making profit from technologies. We could argue that medical devices that save people, that help children learn, help cure diseases, would they exist if we would not allow companies to do private science? So, my preference is for sharing when the benefits are great, but I recognize that benefits can also occur from "private" science.

If the government pays for science, and tax-payers or citizens pay for government, then I think it would be the default expectation that the science should be available to everyone, or at least should be done in the most distributive way to help everyone. Most people in their lives don't have time to read science. So, if we say let's make research more available and that's it, it's not the best way. Because if we do science and no one reads it, is it useful? Whenever possible, scientific findings should be available and presented in ways that people can use it.

**What is the other meaning of open science and what is the value of that?**

When people use the term open science, they mean different things. They are two

main meanings now. First meaning of open science is in terms of data and materials. Scientists make claims based on standard procedures, they make observations, and analyze, report, and interpret them in a certain way. And being a scientist, you have to make all these procedures clear, so people can understand what you said. Because if I say eating strawberries is causing zebras to speak French, there might be one zebra for whom this might be true, and if you know my method, you can say “yes, your finding is true about one but not all zebras.” If I am not open, people may draw false conclusions about my work. So, scientists have to make sure that their claims are understandable.

The second meaning of open science is about making products of science publicly available. Today, many scientists publish in the journals that you have to pay to see them. So, this actually prevents people to see science. The main idea of open science is if the people have done the work, it should be available for everyone to see it.

### **How to measure impact of the science, especially when funded from public money?**

First of all, it is important to have accountability. If you have government money, you have to be accountable for what you are doing. At minimum, you have to be able to say that you are doing research that tries to solve important problems of our society. Measurement is hard. There is a difference if you do basic or applied research. In applied research you should be able to show results pretty quickly. With basic research, we really don't know something. We try to do research to understand. Since we don't know something, we also don't know how long it will take to come with something useful and maybe it won't. Justification for basic research is that I do something because if this works, results can be transformative. Even if impact is difficult to measure in the short-term, it is important to articulate ways that it should be measured over longer periods of time.

For example, Nobel Prize laureate for the economy Alvin E. Roth did research on matching algorithms. Later, he developed systems for matching organ donors with patients. This matching system has saved thousands of lives. But no one could see that coming when he wrote his paper on matching algorithms. People who insisted on instant results from that research would have been disappointed, but now society is much better off.

### **Should scientists be more critical internally, towards their own scientific community?**

We have to be. In particular in the political science, scholars should explain political processes, make them clear. At the same time, political science is not a license to be a circus clown or license to throw stones on politicians just because you don't like them. There is nothing in science that gives you that right. Sometimes people get a science degree, and then they decide to be twitter entertainers and to throw stones on politicians even when the tweets have nothing to do with their scientific work. When people do that, it ruins the reputation of the sciences and makes it hard for scientists who actually try to be helpful. Scientists

have very important moral and ethical responsibilities when they enter the public sphere. When you go public as a scientist, you have to behave very morally and ethically.

**In Slovakia, two years ago we had a scandal regarding the Euro-funding of science and research, even the minister of education had to step down. Again, this year there is a suspicion that the government donation scheme was misused for granting money to some companies in a very dodgy way. What can be done in such situations?**

Do we link the person to science, or do we separate it? If the scientist finds a cure for a cancer that can save lives, I think we should keep findings in the public sphere and make sure that scientist who did the crime is accountable, that he is not allowed to benefit from the crimes he committed and not even from the science that he did professionally. If the knowledge can help people, I feel morally that I wouldn't want to withhold it from them.

Thank you for asking these questions. They are the right questions to ask. In science, we have opportunities to serve others. I hope that more scientists will realize the great good that they can do for others.

**By Svetlusa Surova**