March for Science Reloaded

Christian Kreiss, July 2018

Freedom of science is not only threatened by politicians but also by vested financial interests

On April 22nd 2017 a very amazing event happened: more than one million people, among them many scientists, in more than 450 cities worldwide took to the streets. They protested against distorted science being misused by politics, calling for evidence-based policy in the public's best interest. Protesters were carrying banners showing slogans like “Science serves the common good” or “Pursuing truth - saving the world”.

What had happened? How could so many scholars become so upset? As Robert Proctor, a professor of the history of science at Stanford University, put it there was a “broader perception of a massive attack on sacred notions of truth that are sacred to the scientific community” among scientists (Washington Post April 22, 2017).

The march for science focused on misuse of science by politicians. That is a good cause and highly justified. History shows how Nazi or communist regimes sacrificed the freedom of science to promote their detrimental aims. But also today these malpractices are widespread.

However, freedom of science can not only be attacked by Scylla but also by Charybdis, there are two menaces. It’s not only politicians who try to steer science away from serving the common good and from pursuing the truth, but also vested financial interests. While pointing out the dangers for science arising from politics is highly important and justified, the massive threat to the freedom of science brought about by big business remains unnoticed. The latter might even be greater today, at least in the industrialized world where politicians usually don’t interfere with academic affairs excessively.

But industry does. Corporations have a vital interest that university scientists argue their cause. If for example a big soda producer publishes an in-house study stating that sugar sweetened beverages do not increase the risk of weight gain or obesity, politicians, the media and the broad public won’t really belief that. But if a scholar at a prestigious university publishes the same results, it will seem far more credible. Or take diesel cars. Customer acceptance and government regulation are strongly based on research data showing how clean diesel exhaust emissions are. So the industry has a vital interest in proving that diesel engines are harmless. Ultimately it is scientific results that decide. Hence, the battle is about science and credibility.

The reason for this fight is a tremendous mental shift that took place in western societies during the last 100 years. A century ago the role of religion, ethics and tradition was by far greater than today for legislation, business and everyday life. To the extent that traditional values, ethics and the influence of churches diminished, the role of science increased.

Science is nearly the only fundament left which most groups of society can agree upon. Many laws, rules and regulations today need scientific legitimation, especially business laws. We can notice a secular shift from “In God we trust” to “In science we trust”. The authority of science has become immense. During the last century the importance of science increased to an extent not known before in western societies.

This secular trend in favor of science has consequently carried the fight for influence to the very heart of academia: to the universities. In my opinion, this battle has only just begun. It will intensify strongly during the coming decades and the struggle for influence will progressively extend to schools for example suppling teachers with industry-oriented school material. For profit-seeking companies this means: Funding scientists at reputable universities is the most promising way to transport their own views into the public and to politics.

Some big companies realized this quite early. Among the first to use this method on a large scale was the tobacco industry. In the 1950s the tobacco companies started to pursue the strategy of systematically influencing academic research to shape public opinion and influence politics. The case is well documented. The strategy paid off. The additional profits of the tobacco companies earned by this strategy were estimated at $742bn by the US Department of Justice in 2004.

The tobacco manufacturers developed the blueprint of how to proceed. Today this strategy is used meticulously by many branches. As Margaret Chan, the former Director-General of the World Health Organization put it: “It is not just Big Tobacco anymore. Public health must also contend with Big Food, Big Soda, and Big Alcohol. All of these industries fear regulation, and protect themselves by using the same tactics. Research has documented these tactics well.” (Chan 2013) I disagree with Ms. Chan in one point: I wouldn’t call it tactics. It’s not about short term maneuvers. It’s a sophisticated long-term strategy.

The six well documented steps that proved to be most efficient are:

1) Choose industry-oriented scientists who support the company’s views. 2) Maximize their impact by generously funding their university institutes, facilitate their visits of scientific congresses, support publications and their career. Try to make them opinion leaders in their field of research. 3) Don’t speak too much about the relationship of the chosen scholars with industry, keep it as secret as possible to enhance their credibility. 4) As a last resort falsify results. This might appear to be dangerous or costly if it comes out, but experience shows that both penalties and reputation losses are negligible. Memories of customers clearly are quite short. 5) Use confounders to distract attention from the crucial point, hint to side issues. 6) Produce contradicting studies, cause confusion and say science is still discussing the case. Play for time, claim that further research is needed before political action can be taken, especially before regulatory laws can be enacted. That’s called delaying tactics or paralysing by analyzing.

This six-step-model works pretty well in most branches. It helps a lot to understand business lobbying in the field of science. Take the diesel-scandal. If you look at German universities you will find hosts of industry-friendly professors with well-equipped institutes funded generously by the car industry, publishing lots of papers (step 1 and 2). In February 2018 an important, very industry-friendly study was disclosed by five professors with strong industry ties stating that the installation of catalysts in older diesel cars would cause prohibitive costs. Government should not enforce catalyst installation by law, the study said, but wait for the next, cleaner generation of diesel engines. (Comment: If no compulsory installation were enacted, billions of company profits would be saved at the cost of city residents inhaling less filtered diesel exhaust). In the study no conflicts of interest were mentioned (step 3). Step 4 – falsifying results - was broadly used by many diesel car manufacturers. Step 5, introducing confounders, hinting to other sources of air pollution was widely applied, too. Step 6, playing for time, is very successfully used since the diesel scandal was revealed in 2015. In short: the diesel example shows impressively how science can be abused by special interest groups.

The misuse of science in the pharmaceutical industry is probably even worse. About 90% of all pharmaceutical research is industry-financed. Derek Bok, former president of Harvard, mentions a study according to which 11 per cent of all pharma research studies are ghostwritten (Bok 2013 p355-356). Peter Gotzsche describes the situation as follows: “The research literature on drugs is systematically distorted through trials with flawed designs and analyses, selective publication of trials and data, suppression of unwelcome results and ghostwritten papers.” (Gotzsche 2013 p3). This is what Ben Goldacre calls “the 536,731 ways that evidence can be distorted.” (Goldacre 2011). These methods are not only applied in the pharmaceutical industry but also by many other industries.

The more these malpractices are transferred to universities, the more the reputation and reliability of scientific research itself is questioned. There is much at stake. The last pillar of legitimation in modern societies is about to be knocked over. There is indeed reason for a “broader perception of a massive attack on sacred notions of truth that are sacred to the scientific community.” But the attack comes from two sides, not only from politics.

Critics may ask: What’s wrong with normal collaboration of industry and universities? Should university scholars remain in their ivory tower? What’s wrong with generosity, when money from industry is given to universities? It enables universities to pursue additional fields of activity which they otherwise couldn’t pursue. Doesn’t this serve the common good? And what’s wrong with endowed chairs?

You shouldn’t look a gift-horse into the mouth as the saying goes. Alas, that was a very bad advice for the Trojans. Had they cast one glance in the gift horse’s mouth (to be correct: in its belly) they would have avoided their destruction. Timeo danaos et dona ferentes (beware of the Greek bearing gifts) seems a much more fitting saying for our case.

Perhaps I may insert a personal experience here. Before becoming a university teacher I was an investment banker for seven years. After a buy-out or a stock listing the companies

involved had to maximize profit and cash flow. It was simply unthinkable that they just gave money away for nothing in return. To me it seems pretty naïve to believe that companies are giving money away to universities for nothing in return. Not all third party funds flowing to universities are philanthropically motivated.

Critics may ask: what's wrong with industry influencing laws and shaping public opinion through commissioned studies? Isn't this serving the common good? In my opinion no, mostly it isn't. It often serves company profits, not the common good. Take the General Motors streetcar conspiracy from the 1920s to the 1950s. It shows impressively what happens if you let industry decide about public affairs. Most public transport systems were forced to close by General Motors and its companions – to the benefit of the car industry's profits and at the expense of the common good, especially at the expense of the environment. If we let legislation increasingly be influenced by biased studies representing vested financial interests we might end up with a government of the corporations, for the corporations, by the corporations. But shouldn't it be us the people to decide on politics and business to provide us with goods and services?

Reputation, credibility and reliability of science are at risk to be corrupted by flawed studies undermining evidence-based research by trying to maximize company profits.

What can be done? Firstly, more transparency would be helpful: Universities should disclose which professor receives how much money per year from industry. Secondly, we could strengthen the independence of universities by increasing public funding. Thirdly, business money flowing to universities could be collected by independent funds with independent fund managers deciding independently where the money should flow to. The decisions should be made exclusively by taking into account the common good, not company profits, and "pursuing truth - saving the world".

And maybe we should organize a march for science reloaded.

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