

Prominent Scientist: “Public Science is Broken”

In the wake of the well-publicized [Flint, MI, water crisis](#), a prominent scientist who had worked on such matters before has gone so far as to claim that “[public science is broken](#).”

In painful detail, Prof. Marc Edwards of Virginia Tech describes the unconscionable oversights that led to the crisis—namely, state scientists ignoring the warning signs—and draws this lesson:

“I am very concerned about the culture of academia in this country and the perverse incentives that are given to young faculty. The pressures to get funding are just extraordinary. We’re all on this hedonistic treadmill – pursuing funding, pursuing fame, pursuing [h-index](#) – and the idea of science as a public good is being lost.”

Now one might say that this is just one scandal, and just one scientist myopically treating isolated problems as systemic. Edwards does seem to have a heightened moral sensibility, even teaching a course outside his field on “ethics and heroism.” But it isn’t just one scandal and one crusader.

For one thing, there’s [the rather disquieting](#) fact that the majority of studies published in peer-review social-science journals do not produce “statistically significant results,” and even many that do are not “replicable.”

Yet even the physical sciences are seeing serious problems. In the Flint case, ignoring inconvenient data was in the career self-interest of those who should have been on top of the situation. But that was just negligence. Similar bias fueled by self-interest also causes some scientists—for obvious reasons, we don’t know exactly how many—to fudge or even

fabricate data outright. Most of us know of at least one such case.

The current issue of *The New Yorker* offers [a shocking story](#) about one of the latest cases. The story is rich with human drama as well as science. The exposure and collapse of a now-discredited stem-cell research program that had won the backing of several prominent Japanese and American scientists, had been conducted under the auspices of two universities, and had been published in 2013 by *Nature*, the world's most prestigious science journal, resulted in the suicide of one of Japan's most respected researchers. *Nature* retracted the paper less than a year after its publication, and the scandal hasn't entirely killed efforts to make adult stem cells "pluripotent" (i.e., able to produce any type of cell) like embryonic stem cells. But it has made the whole topic, at least temporarily, radioactive for scientists. That retards research. It's self-destructive.

One might say, of course, that the system actually worked in this case. Yes, people fudged and lied, but failure to replicate their results led to their research being discredited. That's what the scientific method is supposed to do, isn't it?

Well yes. But things don't always work that way.

The biggest example of where it doesn't seem to be working very well is climate science. Huge political and economic decisions hinge on the currently orthodox view that human burning of fossil fuels has been the *primary* driver of the seemingly modest increase in average global air temperature measured since 1850. That rise does account for such phenomena as melting polar ice, which leads to a rise in ocean levels, which leads to eroding coastlines. And we've all heard about other potentially calamitous effects of "global warming." Indeed, sometimes it seems that everything we dislike about the weather and the beach is attributed to global warming—even

cold snaps, like Western New York's record cold February 2014. That's why it's now called "climate change"—as if the climate weren't always changing to some extent. The current orthodoxy presents itself as all-explanatory and immune to evidence of non-human causes. Given the ridicule with which even mild climate skeptics are dismissed as "deniers," the orthodox view seem to have acquired the air of a theology.

That very fact should strengthen the grounds for caution. What have those grounds been?

First there was the data-fudging scandal called [Climategate](#), which defenders of current orthodoxy would prefer we forget. There's the recent [discovery](#) that the rise in sea levels are self-limiting to a certain extent. Then there's [a recent peer-reviewed study](#) indicating that the majority of surveyed academics trained in the scientific method are skeptical of the current orthodoxy—on which, lest we forget, many scientific and political careers have been staked.

This is not to say that said orthodoxy is wrong. It could be right. It is to say that, given how much fallibility and self-interest we find even among scientists, it's best to be cautious about it, ever ready to revise our views in light of new evidence that should at least be allowed a hearing.

Science only works if most scientists are honest and objective enough to subject their results to ruthless re-examination. Lately we're seeing too many examples of that not happening, and we don't have to look far to learn why.

Image: Science Comedy University