

THE UNAVOIDABLE INTRUSION OF SOCIOPOLITICAL FORCES INTO SCIENCE

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I am not really worried about the bad things science might do to society. I'm happy to put aside fears about nuclear power, genetically modified foods, or even the publication of viral genetic sequences. Instead, I'm much more worried about the bad things society might do to science, and I think we should all be.

Lately, I've been seeing a lot of alarming and nonbeneficial interventions by government in science—laws prohibiting the Centers for Disease Control and Prevention from analyzing the epidemiology of gun violence; laws requiring the teaching of “intelligent design” to our children; laws governing stem-cell science; laws affecting climate science. Politicians and pundits take to the Internet and television, like priests of old, to denounce science in ways that sound almost medieval to my ears.

Of course, ever since the Inquisition summoned Galileo, social, political, and religious considerations have affected the conduct of science. Actually, ever since Archimedes was paid to design weapons of war, social considerations have had this effect. Indeed, we can trace such effects as far back as we have records. It has always been the case that social forces have shaped scientific inquiry—what we study, how we study, why we study, who gets to study.

Nevertheless, though science has always been “socially constructed,” this fact has been explicitly characterized only in the last few decades. We can now understand how scientists of centuries past could hold views (and even make “objective” observations) that were not only clearly wrong but also clearly driven by ideology or culture. Views ranging from the phrenological causes of crime to the medical diagnosis of escaped slaves as suffering from the disease of “drapetomania” have all been given a scientific gloss.

But we should be really worried about this age-old and unavoidable intrusion of sociopolitical forces at the present historical moment, because our health, security, and wealth depend so much on progress in science and in ways not appreciated widely enough. How we shape science affects our collective well-being. The key driver of economic growth may well be our cumulative growth in knowledge. Science and invention make us richer, and the pace of scientific discovery has been surging for the last 200 years, coincident with, or causally in advance of, economic growth.

Hence, we should pay attention when science (and science education) becomes a plaything of politicians, or when scientists come to be seen like any other interest group (the same as farmers or bankers) rather than as something altogether different. We should be worried that political interference in, and even antipathy to, science harms us all. I’m not suggesting that scientists should be cut off from society, free from moral scruples or collective oversight. But seeing science as arbitrary or threatening and scientists as (merely) self-interested—and using these excuses to restrict scientific inquiry or distort scientific findings—is dangerous.

A discomfiting irony here is that more government support and societal oversight are needed, given changes in how science is done in the 21st century. Long gone are the days when lone

scientists with modest resources (Newton, Darwin, Curie, Cavendish, Cox) could make major discoveries. Doing the best science increasingly requires large-scale resources and interdisciplinary teams. We have no choice but to rely on broad social support and the public purse if we are to do our work. So political considerations are unavoidable. We don't want—nor could we even have—unfettered, unexamined, unchecked, or insular scientific inquiry.

So there's no way out of the conundrum. To those who want it both ways—who want the public to support science but also to butt out—my answer is yes, I do, too, very much. We should all be worried if politicians and the public lose sight of the fact that scientific inquiry is a public good.