

Philosopher's Corner:

FEAR
Mongering
&
FACT
Mongering

In 1905, the scientist Henri Poincaré wrote that ethics and science “have their own domains” that should never intersect. Even as late as 1963, the scientist Richard Feynman argued that questions such as “should I do this?” and “what is the value of this?” have no place in the scientific life. Oh, how times have changed. Beginning in the 1970s, scientists developed ethics codes for research with human subjects and explicit norms for the responsible conduct of research (RCR). Since the 1990s, scientists have been asked to consider the broader impact of their work. Far from being able to ignore philosophy, scientists are now being asked to do more and more of it. As the domains of ethics and science seep further into one another, this raises a question: how much philosophy do scientists need to take into account? The answer appears to be: more than they have been.

Consider the standard definition of research misconduct. In 2001, the US government defined research misconduct as falsification, fabrication, and plagiarism (FFP). Yet simply avoiding such behavior is not enough to be a responsible researcher. Some research might be irresponsible even if it is done with all integrity; that is, without FFP. Scientists work far upstream from the transfer of technology into the marketplace, but as the creators of new possibilities they create new domains for both ethical and unethical behavior.

This expanded sense of ethics is reflected in the more recent coinage of RRI—responsible research and innovation. Researchers in the STEM fields—science, technology, engineering, and mathematics—are being asked not just to “do things right” (avoid FFP) but to “do the right things.” But how do we define the “right things” or good impact? How

far do scientists' responsibilities stretch when it comes to the social uses of knowledge? These are live debates. And although the fact that we are now asking them represents progress from Feynman's position, there is still a lot of hard thinking ahead.

One way forward would be through the development of what can be called RRR—the responsible rhetoric of research. To illustrate this idea, consider the case of Bjorn Lomborg's book *The Skeptical Environmentalist*, published in 2001. Lomborg, a Danish statistician and political scientist, argued that despite all the bad news bandied about, the environment was actually getting better. As people grow wealthier, they start caring more for the planet; eventually, statistics improve. Many environmental scientists hated the book and accused Lomborg of research misconduct. A Danish investigatory body found Lomborg guilty of dishonest research, but a higher ministry disagreed.

Defining responsible science in this case turned out to be difficult. That's because the "Lomborg affair" was about much more than falsification or plagiarism. It wasn't so much about telling the truth as it was deciding which truths to tell: how to interpret complex data, which findings to highlight, and how to handle uncertainty. Even if Lomborg avoided FFP and made solid arguments, a question still remained: were the sound arguments he made also the right ones?

This is a question of rhetoric. Aristotle first noted that the factual aspect of truth-telling forms only part of the picture. Rhetoric gets a bad name today as something either frivolous or conniving. And Aristotle certainly recognized the potential for words to be manipulative or dishonest. But there is another, richer sense of rhetoric that brings truth-telling to completion. Truth is not relative, but it *is* contextual: the same message means different things in different situations. And it's dangerous or counterproductive to ignore this fact.

This is why truth-telling can be so hard. And it's where Lomborg may have gone wrong. He wrote that we must base decisions "not on fear but on facts." But which facts? Motivated by his feeling that environmental concerns had become overwrought, Lomborg made the rhetorical decision to choose a set of facts that are not scary. But his critics had plenty of frightening facts to throw back at him. Yes, there are valid concerns about fear mongering, which can lead to cruel, unfair, and unwise results. But the Lomborg affair raises the question of whether there can be too little as well

as too much fear. It suggests that we should be concerned not only with fear mongering; there can also be something we can call fact mongering. Where fear mongering can stoke irrational panic, fact mongering can cause irrational calm and complacency.

Fact mongering has a couple of different dimensions. It means assuming that facts must be wholly divorced from fear (and all other emotions) in order to really count as facts. This is unwise, if not impossible. How else do we tell which facts we should care about? And it means taking one set of facts and passing them off as *the* facts. In a complex world filled with complex problems, there are often competing facts or ways to look at the world.

Consider a couple of examples, both from the realm of climate science politics where questions of rhetoric, fact, and fear are most crucial. In July 2017, David Wallace-Wells published in *New York Magazine* an article titled "The Uninhabitable Earth," arguing that we are not scared

enough about climate change. It prompted some denunciations, but also soul-searching among the climate science community about its rhetoric. Perhaps in their desire not to be discounted as fear-mongers, scientists had become fact-mongers. They may have assumed that they don't really have a "fact" until it is scrubbed clean of all emotion, especially fear.

This is certainly not misconduct in a narrow sense, but it may well count as a form of irresponsible research. Has the climate science community hid behind neutral facts and insufficiently scared the public? If so, theirs would be a rhetorical, not a logical, failure.

The philosopher Hans Jonas thought through the implications of this kind of duty in his 1984 book, *The Imperative of Responsibility*. He first distinguishes two kinds of fear. Naked fear is the instinctive fear of violent death that is ever present and serves our self-preservation. It is the shot of adrenaline when you hear a strange noise in the dark. Then there is the kind of fear that we must learn to feel when imagining the fate of future generations and the planet imperiled by our technological powers. He argues that we have a duty not only to consider the thought of catastrophe but also to "lay ourselves open to the appropriate fear." For Jonas, far from downplaying emotional implications of their research, scientists have the responsibility to work with artists and humanists to cultivate this learned (rather than instinctive) fear.

Wallace-Wells's piece was about a moral failure of imagination. Certainly, scientists are far from the only

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party that might be guilty here. But their usual language of facts can be part of the problem. Facts imply simple chains of causality and readily observable realities. Neither is the case with climate. It is mistaken to talk about climate as “causing” severe weather events. But it is also a mistake to reject the connection. It will never be a fact that the climate has changed, for there is no unambiguous dividing line between climate and weather to begin with. The National Aeronautics and Space Administration (NASA) tells us that “The difference between weather and climate is a measure of time. Weather is what conditions of the atmosphere are over a short period of time, and climate is how the atmosphere ‘behaves’ over relatively long periods of time.” What NASA doesn’t point out is that there is no nonarbitrary basis for distinguishing between the two. Today’s climate is weather from the point of view of the Cretaceous.

An appropriate fear, then, won’t come just from the facts of science but from the rhetorical frames that scientists choose to highlight. Geological time (e.g., the view from the Cretaceous) is an important example. It helps us keep in mind the ephemeral nature of any climatic regime. Another example is the rhetoric of ecological instability where earth systems behave in nonlinear ways characterized by feedback loops and thresholds. Scientists often talk about 30-year averages in their search for climate signals in the weather. They want to be sure to have sufficient factual evidence to infer a conclusion about climate. But waiting for assurance to pile up in a chain of facts can mean waiting too long if we cross a threshold where earth systems tip into less hospitable behaviors. In short, fact mongering can stunt our thinking in dangerous ways.

A second example comes from an op-ed in the *Wall Street Journal* by the science policy analyst Roger Pielke Jr., published in August 2018, that proclaimed “good news” about climate and natural disasters. Some 15 years ago, I was a graduate student in his class at the University of Colorado when he assigned Lomborg’s book as our first reading. The lesson I took from Pielke back then was that the facts are not enough. In the Lomborg affair, everyone had their own facts assembled to suit their assumptions, priorities, risk tolerances, and so on.

Thus, I was surprised to see his op-ed counseling us to be “factful” when it comes to climate change. He has, it seems, adopted Lomborg’s view that there are facts on one hand and irrational fears on the other. And the fact is that despite all the bad news, times have never been better. He argues that there is little evidence that climate change has made weather more extreme. Indeed, natural disasters are claiming fewer lives than 50 years ago, and as a proportion of global gross domestic product the costs of natural disasters have actually gone down.

Pielke has been delivering this message for years, and as with Lomborg it has earned him the ire of many

environmental scientists. As far as I can tell, his thesis is logically, or empirically, flawless. It is the rhetoric of it that has me wondering. He highlights a set of facts from the Intergovernmental Panel on Climate Change (IPCC) about specific weather phenomena. What he doesn’t mention are the words in bold at the top of the same report stating that “warming of the climate system is unequivocal” and changes are “unprecedented.” When Pielke says the IPCC substantiates his claims, that may be literally true, but also rhetorically questionable. When does a reasonable argument slip into cherry-picking, or cherry-picking slide into misrepresentation?

Pielke is not a climate denier. In fact, he advocates for a tax on carbon released into the atmosphere by industry, power plants, and various other emitters. And in his op-ed he acknowledges that carbon dioxide has contributed to global temperature increases and “may yet influence extreme weather.” But this comes off as a side-note tacked onto a piece that shouts one clear message: Good news! Note that this is a rhetorical choice. And maybe it is the right one. After all, the business and policy elite who read the *Wall Street Journal* might be more likely to take a carbon tax proposal seriously if it comes from someone who appears to be level-headed rather than another one of those fear-mongers. The recent proposal for a carbon tax by US Representative Carlos Curbelo (R-FL) demonstrates the potential of this strategy. Call this the spoonful of honey approach to climate rhetoric: deliver the medicine to the recalcitrant political actors packaged in soothing words about the good news.

The danger is that they might take the honey but not the medicine. If being “factful” turns up all good news, then why change the status quo, especially when it is so profitable? Further, political and business actors interested in denying climate change and delaying action can make hay with a policy scientist who chooses to emphasize the good news facts. In 2017, Pielke testified before the US House Committee on Science, Space, and Technology. At the end of his testimony where he repeated his points about no increased extreme weather, Pielke mentioned a modest carbon tax. The response from the committee is worth noting: they laughed and shrugged off what one member called “blasphemy.” They had heard the good news and that was good enough for them.

These are vexed matters, and not amenable to easy answers. But such matters are the next frontier in our continued adjudication of science and philosophy. In choosing their truths, scientists shouldn’t assume that fear and facts are necessarily distinct or that the former is irrational and the latter is not. In some cases it can be the other way around.

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