

Pluto's Republic

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The late Nobel Prize-winning immunologist Sir Peter Medawar was once asked by someone, who was trying to impress him, “Don’t you just love Pluto’s *Republic*?” The questioner, sadly, was confusing Pluto and Plato, and the question itself became unshakably associated in Sir Peter’s mind with a growing trend he noted, of people assuming rather greater competence than they actually possessed in specific areas of knowledge. Others have since commented on the same phenomenon, now associated with a 1999 study by Dunning and Kruger. (Sir Peter’s highly original essay on the topic lent its name to a collection of his writings in a single volume published in the early 1980s under the title, of course, *Pluto’s Republic*.) A related phenomenon is that of credentials giving a person’s opinion more weight in the public mind, whether or not those credentials are relevant. And, of course, many credentials are claimed that are never even earned. There are many examples throughout history, but perhaps one of the most successful is Colonel Drake, who made a fortune for his employers as an oil prospector in Pennsylvania in the earliest days of the American petrochemical industry. Throughout the first half of the 19th century, Americans and Europeans relied on candles of some form for lighting after sunset. The best candles were made of whale oil, and by the 1850s the American whaling industry had reduced whale populations in the Pacific so much that it was chasing animals as far away as Japan. Prescient investors saw that the hydrocarbons bubbling up through the soil in some places might make a useful substitute, and the key was to locate sites with the best commercial potential. Into this enterprise stepped Edwin Drake, a former railroad ticket inspector of no military experience whatsoever, who decided that he might impress the locals in the countryside rather more if he had a fine title. As ‘Colonel’ Drake, he did indeed secure fine property for his employers, and in 1859 he struck oil with an innovative pipe drill. Politics offers far too many examples of fanciful and creative descriptions of past work experience to delve deeply into them here, but in the UK both Rachel Reeves and Jeffrey Archer are instructive cases. Archer was particularly imaginative in inventing his résumé, a skill that helped him write some extremely successful novels (and reach the highest levels in the corridors of power), although his world of deception eventually landed him a four-year jail sentence.

Given the success of this strategy, to assume an unearned qualification, we should not be surprised that many people use it, especially to claim expertise and authority when no demonstration of such expertise is required. In the case of political campaigns, it is in fact quite a common group practice, repeatedly used. In June 2024, for example, as the UK was facing a general election, a letter to party leaders was published demanding “more ambitious” climate policies from the next UK government.¹ The signatories were described by the BBC as being leading members of Britain’s climate science community,² when clearly some were not. The very first person listed was in fact an associate professor of accounting, and many others could hardly be described as qualified scientists. A similar letter appeared in the *Financial Times* on April 3rd 2026, demanding that the UK abandon new drilling for oil and gas in the North Sea, signed by “65 leading climate scientists” according to its supporters.³ The letter itself began with the words “As climate scientists...”, but others were quick to point out that the list of signatories included psychologists and lawyers, and apparently at least one landscape gardener. While the *Financial Times* declared that “Here is the scientific establishment speaking with one voice”, it was very clear that the writers of the letter had accepted many signatures from people with no discernible connection to climate science at all.⁴ The important point was the numbers and the appeal to consensus and credentials, regardless of whether the data were sound or the arguments valid.

No-one has explained the role of consensus in science more forcefully than the late Michael Crichton. A much-quoted statement of his on the matter runs as follows:

Let’s be clear. The work of science has nothing whatever to do with consensus. Consensus is the business of politics. ... There is no such thing as consensus science. If it’s consensus, it isn’t science. If it’s science, it isn’t consensus. Period.

Now, in an ideal world, this would all be true. Scientists (good ones) believe in a fundamental objective truth. The aim of good science is to reveal it. There is no place in science for mis-stating anything for convenience or “the greater good”. There should be no place in science for group-think, censorship, political influence, corruption or the weighing of opinion by reputation, but since science is a human activity it will be heavily influenced by human nature. Science is not generally, in practice, a selfless hunt for truth. Scientists these days are not the gentlemen amateurs of centuries ago – they have mortgages to pay and are fighting for tenure or other emoluments. And while many scientists urging drastic action to curb climate change are quick to accuse their opponents of taking money from oil interests, it is clearly the case that many jobs held by the green lobbyists would be lost if public and political sentiment became completely ambivalent towards the emission of carbon dioxide on a very large scale.

The fact remains that consensus most definitely does play a very powerful role in science, as a constraint on new ideas. It is very hard for scientists to make a name for themselves by demonstrating that a long-held consensus opinion is wrong, and to do so is a great breakthrough. The Japanese cell biologist Shinya Yamanaka won the Nobel Prize in 2012 for showing that differentiated cells can be induced to revert to an undifferentiated pluripotent state, breaking the view (established by the British biologist C. Waddington) that had held sway for decades. Personally I am more impressed by discoveries of new things, such as the PD-1 protein which regulates immune responses to cancerous cells. This protein was identified by Tasuku Honjo, who won the Nobel Prize for Medicine in 2018, and I believe his work is more valuable, both in terms of basic science and clinical practice, than that of Yamanaka. The consensus view of those cell biologists I have questioned on this is definitely on the side of Yamanaka; his work is seen as more surprising and fundamental. To me, he simply disproved an idea that was based on a negative; it simply extrapolated from the lack of observation of cellular reversion after differentiation to the hypothesis that such a thing cannot happen, without any particular mechanism or compelling reason. People are however mightily impressed to discover that something they were taught at school has been overthrown.

Many currently widely accepted theories have had a difficult birth. As a young geologist I remember being hugely entertained by the stories about plate tectonic theory, now prominently presented in textbooks given to the young. In the late 1960s the idea of plates was *anathema* to most senior geologists. The idea of continental drift was first proposed in a simple form by the German explorer Alfred Wegener in 1912. The concept of continents moving around the surface of the planet was so implausible at the time that the American Geological Society held a convention in the 1920s for the express purpose of ridiculing it. Wegener himself died in 1930 at the age of 50, trying to rescue fellow explorers trapped in Greenland, and support for his ideas remained a minority view. One of the few professional geologists who publicly supported continental drift was Arthur Holmes, professor of geology at Durham University from 1943. Holmes’s textbook on the subject was a staple of British university geology courses, and the chapter on continental drift did his career no harm. A younger, less established figure could not perhaps afford such public affirmation of an unpopular belief. Physical geologists argued that the crust of the Earth is simply too strong to allow any movement of continents, and they could demonstrate their ideas on the basis of energy transfer within the crust following earthquakes. What they did not allow for was the concept of *creep*, the idea that a strong material under pressure may behave as a viscous liquid over long time-scales. This duality explains the energy of earthquakes travelling quickly around the planet in minutes or hours, while over millions of years the continents may slide towards or away from each other.

Looking over a wide range of almost universally held opinions today, we can find many of them that were once (like plate tectonics) believed by almost nobody. A consensus of experts then is not necessarily strong evidence that these esteemed gurus are in fact right. Up until the 1950s, for example, it was generally believed that craters on the moon were the result of volcanic activity. It seemed impossible that meteorites striking the moon’s surface at random angles could have caused such nearly round geological features, even though the idea was put forward a number of times over hundreds of years. (Hooke suggested it in the 1660s). Eventually it was realised that rapidly falling bodies would cause a nearly-round crater whether dropping directly downwards or at a steep angle. With new evidence, it is natural that people might change their minds, but not every question is so easy to decide. As with plate tectonics, the sceptics may have very strong reasons to dismiss contrary evidence, which they see as lesser or even trivial. The close fit of the eastern South American and western African coastlines was mere coincidence in the minds of many, whereas now the reason is obvious to everyone. Sceptics may have an established

fact or an accepted theory that seems to confirm their negative view, or overthrow that of their opponents, but this fact or theory may be irrelevant in the case in question. Reaching a valid conclusion regarding a question at the outer limits of human knowledge is hard, because it involves weighing different evidence and judging the limitations of what we believe to be true. None of this becomes easier if one side suspects its opponents are taking money to distort their findings, if careers and reputations are at stake, and on occasion if the person with a new idea is the wrong nationality or ethnicity.

Possibly the most dismal example of the latter is the case of *100 scientists against Einstein*, a book produced in the 1930s to refute the theory of relativity. The authors were generally qualified to write on matters of physics, and one can easily imagine what the *Financial Times* would have printed on the matter; but this solid consensus holding Newtonian law to be supreme is now widely held to be wrong. A number of the contributions were distinctly amateurish though, and one must suspect that a couple of colonels might have crept in. Einstein himself memorably commented that, had he been wrong, a hundred critics were superfluous and one professor would be enough.⁵ Still, we must remember that Einstein's theory is not, even today, universally accepted outside established academia. After all, an *absolute* consensus would make it look rather suspicious, and, a good deal of the time, progress in science comes in jumps made by those rare unbelievers who overcome the odds.

Does any of this matter? Possibly not. After all the greatest success of any French army before Napoleon was to put a 19-year-old girl in charge. Reality is far less constrained than human imagination, and truth (we like to believe) will win in the end. But life is an ongoing process concerned with *right now*; civilisations and empires have crumbled to nothing in the past by failing to deal with immediate concerns, and we are unlikely to do very well for very long if we keep punting on the longest-odds options when faced with any serious question of running a country.

Coming back full-circle to Plato, it is worth remembering that the basic idea he propounded was that the best sort of group to run a society might be benign, intelligent people who dedicated their lives to thinking. Were he to discover that in our present time professors of accounting or Medieval history are passed off as climate experts, or that our Covid-19 "social distancing" policy (which caused chaos for years, affected the education of millions of children and destroyed many businesses) was created on the basis of no evidence whatsoever,[‡] then I wonder what he might have thought of modern society. Just possibly, he might have thought *Pluto's Republic* a very fitting name.

[‡]In January 2024, Dr. Anthony Fauci, head of the NIAID at the time of the Covid-19 pandemic, admitted in a US congressional deposition that the policy on social distancing, involving a six-foot separation rule, had no scientific basis and "sort of just appeared".⁶

References

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