

What's the Good of Scientific History?

It is common to date the birth of scientific history to the 19th century, often to the German historian Leopold von Ranke's innovations in research standards and methodology. Geoffrey Elton's comment is typical of this orthodoxy:

...the scientific, ordered, systematic study of history really began only in the nineteenth century ¹

But scientific history has roots in earlier periods: in the idea that science and history had common concerns. There was a strong unifying strand in 18th century Enlightenment thought that universal principles were the business of science and history alike. The Enlightenment project was to discover what these principles were – a task which details would only get in the way of:

Woe to details! Posterity neglects them all; they are a kind of vermin that undermines large works. ²

David Hume suggests that the aims of history are like those of science:

Mankind are so much the same, in all times and places, that history informs of nothing new or strange in this particular. Its chief use is only to discover the constant and universal principles of human nature. ³

By the time we get to Ranke, details are back - with a vengeance. Ranke is an influential figure often represented as the father of modern historiography, objective history, and scientific history. The claim for scientific history seems to rest upon his determination to keep strictly to the facts: to say "as things really were ('wie es eigentlich gewesen')"⁴; together with his refusal to pass judgements on the past or to derive lessons for the future. Already we are in quite deep waters: between universals and particulars, the general and the specific, it seems that there is no more consensus about what constitutes scientific history than about the purpose of history in general. What does seem clear is that there is a continuing interest – even fascination – around the relationship between the disciplines of history and of science. In the 20th century E.H. Carr's influential account starts from the observation that science encompasses history unproblematically in all other European languages but English.⁵ The Latin '*scientia*' covers knowledge of all kinds. Carr goes on to map out a sophisticated version of scientific history very different from one that either Hume or Ranke would accept, hammering in a distinction between scientific and objective history even as he elides that between science and history. And so the debate - and the fascination – rolls on...

In this paper I do not propose to contribute, except incidentally, to this debate about the theory and practice of scientific history: but to examine instead the pull – the attraction - that the very idea of

¹ (Elton 3)

² Voltaire – quoted by (Arnold 46)

³ Hume – quoted by (Arnold 51)

⁴ Quoted by (Boldt), who also gives a nice summary of "Ranke's key rules"

⁵ (Carr 51)

scientific history has. I aim to answer two questions. First: why is it believed that scientific history would be a good thing? Second: could scientific history sometimes be a bad thing?

To answer the first question, reflect that ever since the scientific revolution of the 18th century, science has both: gained general acceptance as the gold standard of intellectual enquiry; and attained a position of enormous and global influence over everyday lives. The roots of its intellectual appeal are obvious enough. As the philosopher Isaiah Berlin puts it:

...it is not difficult to see why there has been a strong desire to regard history as a natural science. History purports to deal with facts. The most successful method of identifying, discovering and inferring facts is that of the natural sciences. This is the only region of human experience, at any rate in modern times, in which progress has indubitably been made. It is natural to wish to apply methods successful and authoritative in one sphere to another, where there is far less agreement among specialists. The whole trend of modern empiricism has tended towards such a view.⁶

In Berlin's formulation, it is rational and progressive for history to adopt the methods of science. Moreover, linking progress in science with broader social, cultural, and political progress has a long and distinguished history. Eric Hobsbawm devotes a chapter of *The Age of Revolution* to detailed discussion of the nature and role of science between 1789 and 1848. It is foundational to his thesis that all the revolutions are connected:

...the scientific implications of the French Revolution are obvious in the frank or concealed hostility to science with which political conservatives or moderates met what they regarded as the natural consequences of eighteenth-century materialist and rationalist subversion⁷

In other words, the conservatives could see the rational argument and its implications all too clearly. But in my view the appeal of science is multi-faceted, and other aspects are more emotional, sometimes even visceral, connected to what historians and cultural commentators sometimes call the *zeitgeist* or *mentalité*. In Britain as elsewhere, science and technology helped the nation to recover from World War II and ushered in an age of optimism, economic growth, and progress. Harold Wilson in 1963 set out a wide-ranging technocratic program for the future Labour Government under the memorable banner of the "white heat" of scientific and technological revolution⁸, in the same speech which announced the planned "university of the air" which became the Open University. Behind the blizzard of facts, figures and technocratic language in Wilson's speech lies an unmistakeable optimism and a confidence that advances in the social sciences can be harnessed to work in alliance with science and technology to deliver economic and social change. Something of this optimistic spirit is captured by John Grindrod, writing about the British post-war building boom:

A mere half-century had brought the motorcar and aeroplanes, antibiotics and nuclear physics. The possibilities for human progress seemed endless, and after the catastrophic upheaval of two wars, people around the world were open to new ways of living.⁹

A legacy of scientific success and progress is public confidence. A study from 2018 shows that in the US public confidence in the scientific profession has remained stable for decades at a very high level - 44%

⁶ (Berlin 104)

⁷ (Hobsbawm, *The Age of Revolution* 352)

⁸ (Wilson 7)

⁹ (Grindrod 16-17)

in 2018 - compared with others such as education at 25%. The press, politicians and business leaders are far lower.¹⁰ These numbers perhaps seem unsurprising and may well chime with the reader's own sensibilities: but they conceal something of a paradox. The fact is that the benefits of scientific progress are not delivered unmediated. Without the relatively despised politicians formulating and enacting enabling policies, and enterprises run by business leaders in turn developing, marketing, and selling products, much of the social utility of science would go unrealised and unrecognised. On closer examination, then, the relative disparity in these trust indices between scientists and some others seems irrational. I believe there is an explanation of this anomaly which throws further light on the appeal of science: it also has programmatic implications for scientific history. The first part of the explanation is that people see scientists as pure and disinterested in their motives: their remoteness from the sometimes complicated and messy business of delivering the goods counts in their favour. The contrast in the public mind with the worlds of politics and business and their practitioners is stark. Consider also that much so-called 'basic research' in science is conducted with no practical application in mind; it may also appear mysterious and incomprehensible to the lay person. Again, this seems both pure and admirable. The second part of the explanation is the scientific community's demonstrated commitment to high core professional standards and values: rigorous controls in experiments; accepted methodologies and processes; consensus tempered by a culture of challenge and openness; peer review; respect for ethical constraints; progressive, unifying, and inclusive attitudes. Where is history in all this, you might ask? Presumably hiding within the trust indices under education at 25%: not bad but could do better - perhaps by learning from an informed understanding of science!

Another facet of science's appeal is creativity. You would not know it from Berlin's talk of "discovering and inferring facts", but without creative thinking science would achieve nothing. Much scientific endeavour these days is institutionalised and co-operative in nature: yet we rely to a striking degree still on the intuitive and imaginative powers of gifted individuals, which lead them to see patterns in the world to which others are blind. Think of Charles Darwin if you will; but Nobel prizes are still awarded today to named individuals, even when part of a team. Ever since the scientific revolution of the 18th century great advances have been and will be known forever by the names of their inventors and discoverers. Today, science throws up what I would call accidental 'rock stars' – names as well known to the public as Hollywood actors or pop musicians: the names of Stephen Hawking and Tim Berners-Lee come to mind. These are individuals who have not sought public recognition, but the creativity of their achievements combines with their professional integrity and public spiritedness to thrust it upon them regardless. They would be the first to admit they are, in Newton's memorable phrase, "standing on the shoulders of Giants", but their achievements are respected as singular nonetheless – albeit barely understood outside the scientific and academic community in Hawking's case. It is hard to think of any historian with more than a fraction of this 'name recognition'. (I exclude what I will call 'TV historians' from this: they are known as much for their personalities and presentational skills as their historical credibility.) To summarise my argument so far: there is much more to the notion of scientific *achievement* than initially meets the eye, and which exceeds the grasp of rather dry formulations such as Berlin's. These nuances are important constituents of the appeal – even the *glamour* - of science. Any formulation of the idea of scientific history ought to take account of them.

¹⁰ (Funk and Kennedy)

It is now time to turn to the second question: could scientific history be a bad thing? There are I think two dangers here: the first is that it is built on false premises and misconceives the nature of the model it aims to emulate; the second is that it learns the wrong lessons from it. So, is there anything important missing in the characterisation of science used so far? It could be objected that we are so dazzled by scientific success and progress that we fail to acknowledge science's failings – the 'dark side' of science, so to speak. After all, the same science which put a man on the moon also gifted humanity with the ability to destroy itself and the planetary ecosystem by nuclear weapons. Climate science is belatedly catching up with the potentially catastrophic effects of earlier unregulated exploitation of science. Hobsbawm, writing in 1994, paints a deeply ambivalent picture of the place of science in the twentieth century, in stark contrast to its progressive role in the age of revolutions:

No period in history has been more penetrated by and more dependent on the natural sciences than the twentieth century. Yet no period, since Galileo's recantation, has been less at ease with it.¹¹

He elaborates this theme by cataloguing many of the failings or unintended consequences of scientific progress. More recently the doctor and science writer Ben Goldacre in his newspaper columns and book¹² has castigated under the heading of 'bad science' not only fakery, but also many practices of the pharmaceutical industry and other institutions of the scientific establishment. These examples are just the tip of the iceberg of reasoned critical attitudes towards science. From this perspective, a naïve proposition that history should be more like science commits us to emulating a project whose failings are as stark as its successes are shining. What I believe this sobering realisation amounts to is a requirement for the scientific historian to be informed, critical and selective in what they take from science and how they apply it: understanding equally how good and how bad science may be in its methods and consequences may not be a sufficient condition for good scientific history - but it is certainly a necessary one. This is how we swerve to miss the first danger.

As for the second danger, a critical and informed approach will take us a long way, but only so far: how then do we avoid learning the wrong lessons from science? An example will help. Consider Ranke objecting to the inaccuracies in the historical novels of Sir Walter Scott and resolving to keep "strictly to the facts". Recall too Berlin's assertion of the primacy of facts in both history and science. But excessive respect for facts in isolation can lead down a methodological blind alley: it could, if taken to extremes, result in a conception of scientific history so cautious of bias, so aware of its incomplete evidence base and underdetermined theoretical foundation, that it fails to offer any interpretation of facts and events whatsoever. For E.H. Carr, this type of 'value-free' history would not only be pointless; it would be incoherent. Historical judgement is implicated not only in evaluating the evidence, but even in the selection of facts as evidence. In his famous analogy:

The facts are available to the historian in documents, inscriptions and so on, like fish on the fishmonger's slab. The historian collects them, takes them home and cooks and serves them in whatever style appeals to him.¹³

A moment's reflection should convince us that this is not even good science: it would be like the work of a scientist who is an expert in experimental technique, but who cannot choose what experiments to carry out, and refuses to draw any inferences from them. So, an apparently unimpeachable

¹¹ (Hobsbawm, *The Age of Extremes* 522)

¹² (Goldacre)

¹³ (Carr 5)

commitment to the facts leads, if we are not careful, to bad science and worse history. Such are the pitfalls upon a path paved with good intentions.

Before closing I feel I must rescue Ranke from the caricature of my 'straw man' argument: in fairness I should point out that he himself could see a bigger picture: in turning away from Scott's historical novels he reasons that

...the historical sources themselves were more beautiful and in any case more interesting than romantic fiction.

¹⁴

So where have we arrived concerning the attractions and pitfalls of scientific history? I hope I have shown that the appeal of scientific history is well-founded: and that it is important to advance the substantive debate about its theory and practice. Equally there are pitfalls. I have offered a cautionary example, but no heuristic for avoiding false steps is possible without a substantive theory. I believe it will help to treat scientific history as a specialism and a main current rather than a side-issue within historiography, but that is an argument for another time.

¹⁴ Quoted by (Arnold 35)

Bibliography

- Arnold, John H. *History: A Very Short Introduction*. Oxford: Oxford University Press, 2000.
- Berlin, Isaiah. "The Concept of Scientific History." *History and Theory* (1960).
- Boldt, Andreas. *Leopold von Ranke (1795-1886) General understanding and philosophy of history*. 2015.
- Carr, E.H. *What is History?* Macmillan, 1961.
- Elton, Geoffrey. *The Practice of History*. Fontana, 1967.
- Funk, Cary and Brian Kennedy. "Public confidence in scientists has remained stable for decades." 27 August 2020. <https://www.pewresearch.org/fact-tank/2020/08/27/public-confidence-in-scientists-has-remained-stable-for-decades/>.
- Goldacre, Ben. *Bad Science*. Fourth Estate, 2009.
- Grindrod, John. *Concretopia*. Brecon: Old Street, 2013.
- Hobsbawm, Eric. *The Age of Extremes*. London: Abacus, 1994.
- . *The Age of Revolution*. London: Abacus, 1962.
- Wilson, Harold. "Labour's Plan for Science." 1 October 1963. <http://nottspolitics.org/wp-content/uploads/2013/06/Labours-Plan-for-science.pdf>.