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No time for Experts? Trust in Science after the BREXIT vote of 23 June 2016

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'The people of this country have had enough of experts' (Michael Gove)

Making science is a global affair, while science culture remains local. In an interview during the high time of the BREXIT campaign in June 2016, Michael Gove, a leading anti-Europe face and former Minister of Education, refused to name any economists (the science of economics) who backed Britain's exit from the European Union, saying that: "people in this country have had enough of experts". This statement was later widely taken as emblematic of the dire state of science in a post-BREXIT United Kingdom. Before joining the general lament (as in BBC Newsnight, 27 February 2017), let us examine some UK data on long-term trends in public opinion on science.

The long-term trends in the UK indicate increasing trust in science, increasing familiarity with science, stable evaluation of the utility and declining moral reservations about science, and a stable or receding general interest in science since 1990. This suggests that science has gained a mundane normality in everyday life in the United Kingdom. However, there are also potentially worrying counter-trends to keep an eye on. ⁱ

Increasing trust in scientists

IPSOS Mori publishes its 'veracity index' for the UK since the 1990s, asking annually, whether people are thinking that various public actors are 'telling the truth'. Since 2000, a rising proportion of the public grants scientists veracity, increasing from 65% in 1997 to 85% in 2014 (+/- 3%). This is a continuous and robust trend; it has declined slightly since 2014 to 80% post-Brexit in Nov 2016, probably not statistically significant.

The 'veracity' of other professions remained stable for 20 years, trust in UK institutions is not slipping. However, the clergy's credibility declined from 82% to still a high 70%. It looks as if what science gains, the Church is losing in public standing. Are scientists taking the role of the secular 'priesthood' in UK society?

It is not clear what explains the trend change setting in before 2016. Some of it might be a ceiling effect. It is difficult for more than 85% of the public to say they trust an actor; the UK is not North Korea. Also, it remains unclear whether these trends are homogenous across all segments of the public. MORI has yet to open up the data files to examine this question.

Increasing familiarity with science

Several indicators point to increasing familiarity with standard scientific facts. The 2014 BIS survey compares to an earlier British Social Attitude survey: in 1988 14% of the public got a set of difficult quiz items correct; in 2014, the same items are answered correctly by 29%. The percentage of people who got all items wrong declined from 22% to 5%.

The Eurobarometer with nine quiz items confirms this increase: a continuous rise in mean familiarity scores for the UK since 1989 is observable across all generations; and the gradient is accelerated for Generation X (born 1963-1977) and for the Millennials (born after 1977).

Positive evaluation remains stable; moral reservations are declining

The British appreciate the utility of science, increasingly agreeing that *'science will make life easier and more comfortable'* and *'science will offer more opportunities for future generations'*. While these indicators can vary from year to year, the trend is stable (in Eurobarometer) or increasing (in BIS-MORI data) since the 1988.

Moral reservations such as *'science and technology changes our life too fast'* and *'we depend too much on science and not enough on faith'* find less and less agreement. Compared to the 1989, the British are less worried about science interfering with religion and have become impatient with the rate of change.

However, the generations do not move entirely in step. On the utility of science, the younger become even more positive, the older less positive (Eurobarometer 1989-2013). Reservations decline across all generation; while millennials who are much more impatient than the other generation groups.

Decreasing interest and engagement with science

The index of interest in science remains stable over the years and so does the index of feeling informed. But the generations are not in step. Interest tends downward for the WWII generation; among Generation X it is increasing, but not so among Millennials. Generation X feel increasingly informed about science, less so the older. Millennials are remarkably more informed since 2005, but less interested, maybe because better informed.

These four long-term trends are juxtaposed by several shorter counter-trends: trust in scientists is expressed with a sense of resignation; the massive increase in media coverage peaks in 2007; and the mobilisation of science into societal impact is accompanied by a 'mythical' image of science in public.

'Resigned trust' in the governance of science increases

The new series of British Attitudes to Science (BIS-BAS) shows a curious trend. In 2005, 49% agreed '*we have **no option** but to trust those governing science*', this increased continuously to 67% in 2014 (+/- 2%). The increase is stronger among women than among men; stronger in Northern Ireland than in other regions; but not at all the case in Scotland. This trend of resigned trust in the governance of science is accentuated among the WWII generation and among Gen X, but less among Baby Boomer and Millennials.

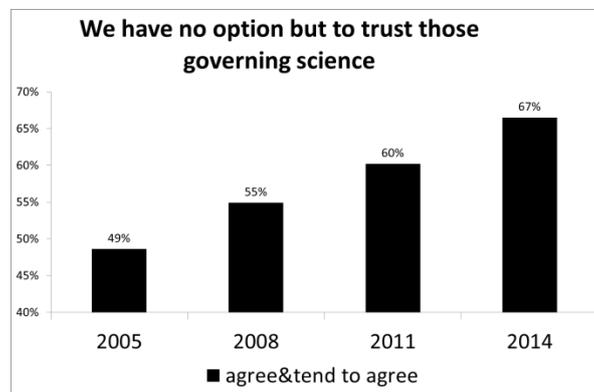


Figure 1: attitudes to governance of science, BIS-BAS 2005-2014

At the same time, expectations remain high but shifting: Agreement on '*those who regulate science need to communicate with the public*' remains at 90%. '*The government should act in accordance with public concerns over science and technology*' and '*scientists should listen more what ordinary people think*' receive 80% agreement, declining since 2005. Agreement to '*people are sufficiently involved in decisions on science and technology*' remains below 20%.

These trend items form an index of '**acquiescence with technocracy**': willingness to defer decisions in the absence of an option, decreasing expectations to be listened to by decision makers, and a suspicion that the public is little involved. Depending on one's views on technocracy as a regime of governance, this might become a rather problematic trend.

Mobilisation of scientists: supporting the impact agenda

The massive Research Excellence Framework (REF 2014) scored research units also on 'impact in society'. While news coverage of one's research does not count as 'impact', it is clear that media attention is a pathway to impact, and likely to become part of impact management. Most universities are thus professionalising their communication function.

The question remains whether the mobilisation of scientists has broadened or intensified among those already doing it as happened in France's CNRS (see Jensen, 2011).

Increasing media coverage of science and the crisis of science journalism

The Royal Society's Public Understanding of Science Report of 1985 had impact: it successfully mobilised the British mass media, print and broadcasting alike. Science news has increased massively to historically unprecedented levels of coverage (Bauer, 2012). However, but this trend reaches a turning point by 2007 (MACAS project).

While science communication is booming, science journalism is in crisis. The legacy media are endangered, and so are full-time science reporters. There is mounting pessimism among science journalists about their future (see Bauer et al 2012).

An increasingly unrealistic image of science in the UK public

Eurobarometer 2005 and 2010 asked about the image of science: *'science and technology can sort out any problem'* (omnipotency), *'new inventions will always be found to counteract any harmful consequences of scientific and technological developments'* (self-correction), *'one day we will have a complete picture of how nature and the universe works'* (worldview), and *'there should be no limits to what science is allowed to investigate'* (no limits).

Agreements on these four items are highly correlated to form an index of an unrealistic 'myth' of science (Bauer, 2015).

Holding to myths is positively correlated with science familiarity in Turkey, while in the UK the correlation is negative: the more familiar with science, the less we subscribe to these myths. However, Eurobarometer 2005, 2010, and BIS-BAS 2014 suggest that holding to myth is increasing in the UK; at the same time as familiarity with science increases, and so does resigned trust.

Conclusion

This suggests that the science culture in Britain, rather than in an immediate post-Brexit melt-down, shows some long-term trends and counter-trends that deserve closer attention. In the long run familiarity with science has increased, trust in truth telling science increased, the utility of science is unshaken and moral reservations declined, but interest in science is laming among a well-informed public. This mundane normalcy of science in everyday life is juxtaposed by an increasing **acquiescence of technocracy**, willingness to defer decisions in the absence of option, decreasing expectations to be part of the decision making, and a suspicion that the public is little involved. This is a potentially worrying trend. The field of science communication is very active, though peaked in 2007, and the increased mobilisation of scientists into societal impact might contribute to an unrealistic image of science. Myth is a shaky and risky foundation for a future that is acquiescent with

technocracy. Is Britain cultivating a 'secular priesthood' for the UK, and all the bad rhetoric of 'enough of those experts' actually means 'enough of false experts'? Watch that space!

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ⁱ An earlier and slightly longer version of these observations was submitted to the House of Commons Science and Technology Committee *Enquiry on Science Communication*, 29 April 2016.