



Perspective

**Science, society and policy:
A trivalent vaccine for uncertain times**

Stephen A. Matlin

The relationship between science, society and policy had always been complex and often uneasy.^{1,2,3} This is not surprising, since the knowledge and technological products of science offer many benefits to society as a whole, including better health, wealth and wellbeing, but also carry risks that need to be managed through effective policies that are overseen by governments through legislation and enforcement machineries.

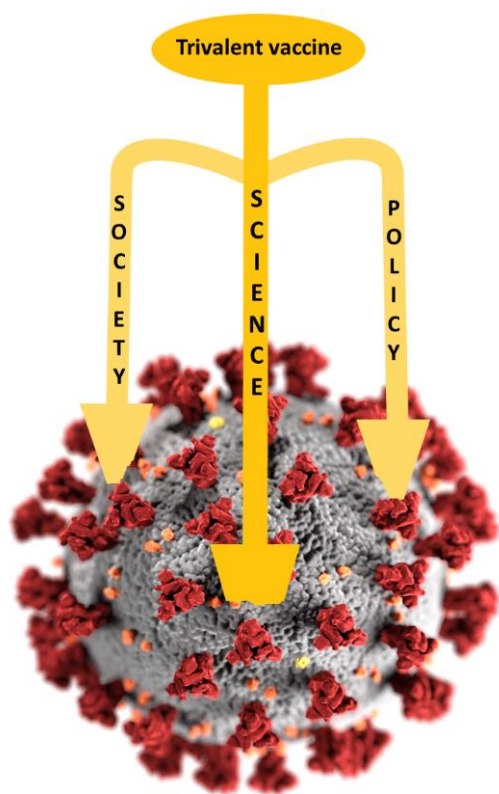
Attitudes to science and perceptions of technology have often diverged among different sections of society. Since the Renaissance, aspects of science and technology (S&T) advances have been welcomed for the benefits they brought, for example to agriculture and industry, valued for their impact on wealth creation and improved health, rejected by people who feared the impact of new technologies on their livelihoods and condemned by those who were appalled by the death and destruction that weapons of war could bring or the environmental damage caused by lack of care in the use and disposal of products.

Policy-makers have similarly often displayed ambivalence in their relationship with science, valuing the power and economic advancement S&T brings and the availability of evidence-based advice to inform policy choices, but not always welcoming the evidence or advice proffered when it has been at odds with favoured policies or demonstrated failures resulting from previous choices.

In recent years, science has come under attack from many quarters. Concerns about the environment, health, security and excessive production and consumption have sometimes been channelled towards anti-science stances rather than towards questioning how people behave, while conspiracy theories and false information have been widely disseminated on largely unregulated social media. Political antipathies to unwanted messages brought by science have resulted in science cutbacks, restrictions in freedom of speech and denigration and dismissal of individual scientists.

But we live in uncertain times, when both the expected (e.g. global warming and resultant climate change; population increases and attendant shortages in clean water and food; re-emerging infectious diseases and the spread of anti-microbial resistance and the consequent loss of lives) and the unexpected (e.g. adverse weather events, natural disasters and pandemics of new diseases) threaten human security everywhere on the planet. The only defence against these threats is to harness the combined capacities of science, society and policy in a 'triple vaccine'. This can enable the world to be 'future ready' – to have the science and technology capacity to identify trends and potentials, to make the best possible preparations and to be able to move swiftly and efficiently to respond. These capacities will be critical as the world strives to achieve the UN Sustainable Development Goals by 2030 and to find ways to avoid the 'tipping points' that may cause catastrophic, long-term changes in the planetary environment.

The resurgence of public trust in and support for science during the Covid-19 pandemic has created an important window of opportunity for this 'triple vaccine' to be developed and sustained in good working order as a bulwark against future challenges in uncertain times.



A paper by IOCD's action group, *Chemists for Sustainability* (C4S), just published in Royal Society Open Science, discusses the critical relationship between science, society and policy and the need for realignment to ensure its effective function.^{4,5}

The IOCD action group, *Chemists for Sustainability* (C4S)⁶ has been working in the last few years to promote sustainable development, highlight the indispensable roles that science must play, and defend the scientific approach against movements that undermine public trust in science.

Picture credit: Stephen Matlin

[Original drawing, incorporating SARS-CoV-2 image, free to use from US-CDC: <https://www.cdc.gov/media/subtopic/images.htm>]

Stephen Matlin is a visiting Professor in the Institute of Global Health Innovation, Imperial College London, Secretary of the International Organization for Chemical Sciences in Development, Namur and a member of the IOCD action group, *Chemists for Sustainability*.

Recommended citation:

S. A. Matlin. *Science, society and policy: A trivalent vaccine for uncertain times*. Perspective. **International Organization for Chemical Sciences in Development**, Namur, posted online May 2020. <http://www.iocd.org/perspectives>

References

- ¹ W.H. Lambright. Government and science: A troubled, critical relationship and what can be done about it. *Public Administration Review* **2008**, 68, 5-18. <https://www.jstor.org/stable/25145570>
- ² A. King. Science, politics and policymaking: Even though expert knowledge has become indispensable for policymaking, providing scientific advice to governments is not always easy. *EMBO Rep.* **2016**, 17, 1510-1512, doi: 10.15252/embr.201643381.
- ³ Select Committee on Science and Technology, Third Report. *UK Parliament*, London, **2000**. <https://publications.parliament.uk/pa/ld199900/ldselect/ldsctech/38/3803.htm>
- ⁴ G. Mehta, H. Hopf, A. Krief, S.A. Matlin. *Realigning science, society and politics in uncertain times*. *Royal Society Open Science* **2020**, 7: 200554., doi: 10.1098/rsos.200554. <https://royalsocietypublishing.org/doi/10.1098/rsos.200554>
- ⁵ S.A. Matlin, G. Mehta, H. Hopf, A. Krief. Science, society and politics – an uneasy but essential ménage à trois. *Royal Society Open Science* published online 22 May **2019**. <https://royalsociety.org/blog/2020/05/realigning-science-society-policy/>
- ⁶ *Chemists for Sustainability* (C4S). *International Organization for Chemical Sciences in Development*, Namur, **2020**. <http://www.iocd.org/WhatWeDo/Current/sustainability.shtml>