

Parallel Session 26: Interactions between science communication and science policies

PUBLIC POLICIES FOR SCIENTIFIC CULTURE – WHEN MATURITY BRINGS ABOUT EVALUATION

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Abstract

In developed countries significant investments have been made to improve the scientific culture of populations. Public initiatives include the recruiting of the scientific community and a panoply of out-of-school resources designed to engage people with science. The system develops at different paces according to the socio-economic scenario and political commitment of governments. UK and Portugal provide two examples of promoting structures, Copus and Ciência Viva.

Key words: Scientific culture, policy, evaluation

Text

PUS comes of age

Public understanding of science – or whatever expression is used in each language – has finally made it to adulthood. It means it became a policy issue within S&T systems, comprising an agenda, a budget and a responsibility.

Scientific culture is a public affair and a matter of the state, although we can argue for the increasing participation of the so-called science communication industry. The implementation of policies is a long-term enterprise, requiring transversal measures to intertwine formal and informal schooling.

There is a rhetoric associated with public programmes that translates political intentions. Figure 1 summarises the basic rationales underlying the design of PUS policies. Top-down or bottom-up approaches are often discussed, whether i) the action is driven by science professionals, with the focus on cognition, supported by the belief that the feeding of information generates knowledge and support, or ii) departs from the public, focusing on specific issues while addressing people's attitudes and practices.

Equally important is the organisational nature of promoters and the extent to which these activities relate to others. If a vertical system is more easily put forward and maintained than networks, especially when resources are limited and benefits are scattered, the anguish of verticality is to promote transferable activities and avoid being limited by its own resources. Truly horizontal initiatives require the acknowledgement of different actors and the capacity of coordination in the long run, being typical of progressive societies where public participation methods are standardized.

Copus, the rise and fall of a British pioneer

The Committee on the Public Understanding of Science was a lobbying organisation for PUS launched in 1986. A triumvirate of the Royal Society, Royal Institution and The BA, run new schemes of engagement of scientist with the public. Meanwhile the scenario changed, with the research councils and medical charities committing to PUS along with the development of an active industry of science communication.

In 1999, COPUS underwent a revision. From an acronym it became a brand name and in its council included representatives from different sectors of science communication. The objective of this revamped structure was to act as a support organisation for science communication in the UK, since the vertical promotion of PUS activities was flourishing but there was no horizontal interconnection between institutions. Despite the consensual agreement for the need of an umbrella organisation Copus was extinguished by the end of 2002.

Ciência Viva, the Portuguese flag for PUS

In 1995, when Portugal had science and technology levered to the category of ministry, scientific culture definitely entered the political discourse. The major effort of catching-up of the Portuguese S&T system, nurtured by European funds, included the promotion of scientific culture among a traditionally illiterate population. Ciência Viva started as an operational unit of the ministry and grew into an agency by 1998. Moreover, this commitment to PUS materially translated into a sound 5% of the national S&T budget.

The CV program focused on the experimental teaching of science and the promotion of scientific education in schools, while launching a network of interactive science centers and scientific awareness campaigns.

Learning by evaluating

Evolving from a teenage tentative affirmation and pocket money, PUS matured into an accountable grown-up. The problem is evaluating it. In fact, given the multiplicity of inputs in the lifelong process of apprehending a scientific culture, it is virtually impossible to establish a direct link between activities and long-term quantifiable impacts. Nevertheless, if causality is difficult to establish, it is possible to identify additionality – the extent to which an activity is undertaken as a result of being supported by a certain policy and expenditure.

If the first step for evaluation is benchmarking, regular surveys can provide normalized sets of data for longitudinal analysis. The problem is that common literacy surveys still assess fragmentary knowledge, unrelated to operative skills. Also, the public's practices are underrepresented.

Homo scientificus

If we were to depict the evolutionary scale of science and society relationships, a pictorial vision might emerge as Figure 2.

No doubt science is a matter of scientists. They fight for research funding, sanctioned by the lay public, and easily assume the role of tutors engaging in a top-down approach (exemplary pursued by Copus and quite present in Ciência Viva).

The realising of science's potential as a competitive economic advantage makes it a matter of money. In the knowledge economy there is emphasis in the skilled workforce and competing markets for R&D.

By the time the informed citizen becomes a stakeholder, echoing health, environmental and consumer concerns, science finally matters. As for the promotion of scientific culture, indicators of maturity include i) the development of support institutions – including science communication offices in Universities and R&D firms, consumer associations and regulatory bodies, like the recently created Food Standards Agency in the UK, ii) diversity in public hosting and funding of science communication activities and iii) a blooming industry with regular media coverage.

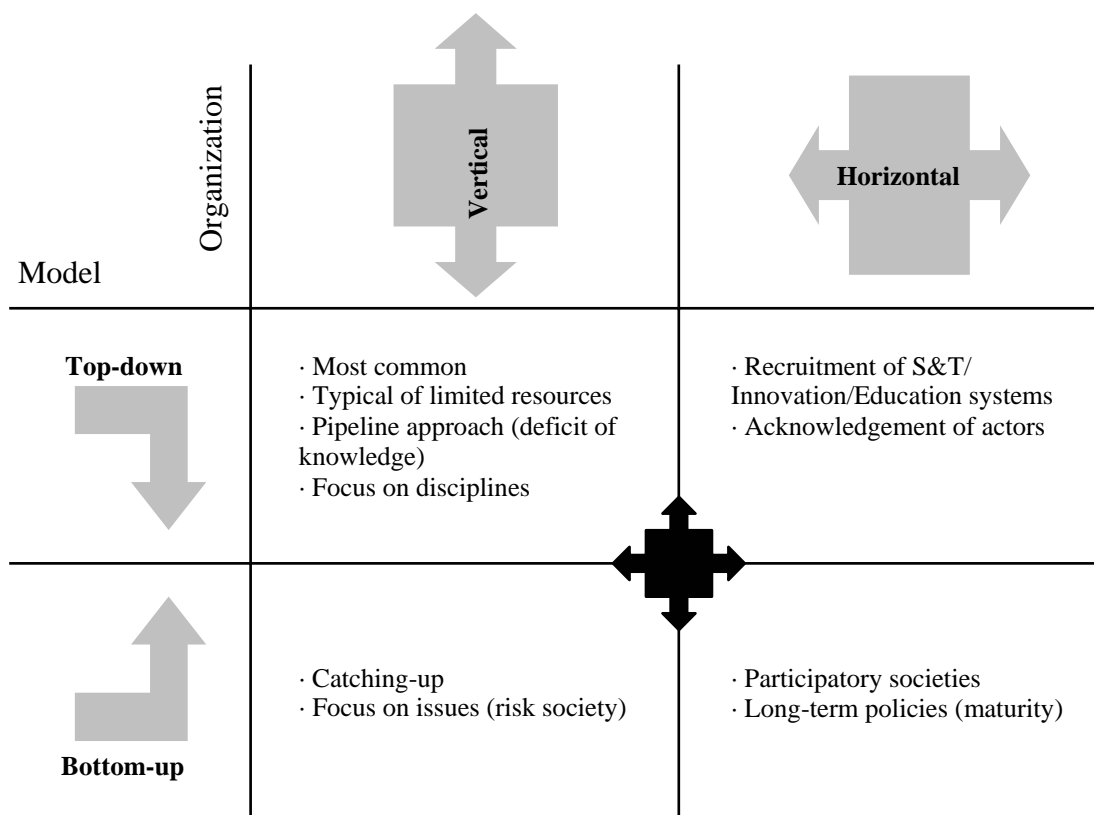
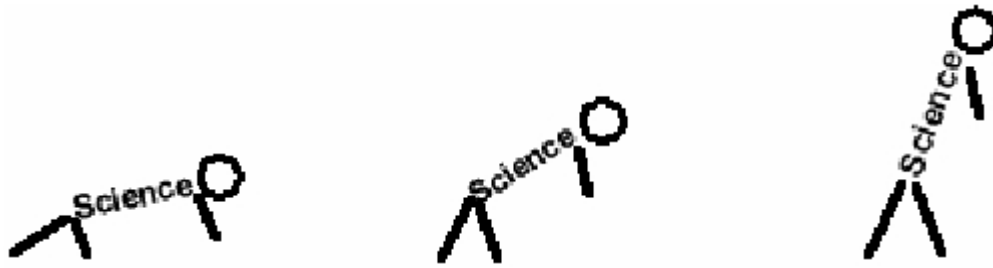


Figure 1. Rationale for public policies

Each society has to find the most appropriate position () according to the policy conceptual model and organizational structure.



...is a matter of scientists.

...is a matter of money.

...matters!

Figure 2. Homo scientificus

Science and society relationships evolve shaped by a complex network of stimuli and demands.

