Why should we still read an essay written in 1969 ?

Comments on a classical paper on science communication

Martin W Bauer

m.bauer@lse.ac.uk
London

Résumé : Jurdant (1969) makes three points that are worth recovering for current discussions : popular science storytelling is a genre with its own structural logic, there are inherent difficulties that arise from rendering pure science in everyday language, and this storytelling is pragmatic and thus necessarily ideological. Being ideological, turns science communication into an unstable system which is time and again the topic of waves of 'iconoclastic' critique, as in the 1960s, so in the 2010s. It is time to read Jurdant again.

Mots-clés : Genres of communication, open and closed discourse, science, translation, narrative, ideology, cycles of iconoclasm.

I am honored to comment on this essay, Jurdant (1969), which I consider a classic of the science communication literature ; classical in the sense that it does no longer age and remains relevant at present. Many millennials and Gen Z students are suspicious of lists that recommend readings from before 2000 ; some even suspect a lazy Professor failing to update the references. I would like to take this invited comment as an opportunity to show how juvenile and misguided such a prejudice might be. I ask the question : why should we read an essay from 1969, and what can it tell us 50 years later ? I will try to answer this question in four points and end with renewing my appeal for an English translation : a) perennial issues masked by maybe outdated language, b) the concerns that persist, c) our current need to recognise 'ideology' at work, and d) the timeliness and timelessness of an 'iconoclastic' take on science communication.

During my editorship of the international journal of *Public Understanding of Science (2009-2016)*, I tried my hands at a new feature with the working title 'Classical Papers' (from languages other than English) and Jurdant (1969) was on my list ; we even produced a rough translation for Baudouin to inspect, approve and edit. However, to my chagrin we never got much further, because Baudouin hesitated and finally desisted. This classical essay remains inaccessible to English readers and therefore to most of the international science communication community. I hope to make clear, why this is rather unfortunate.

1 Outmoded language masks a very up to date concern

In English the word 'vulgarisation' sounds even more condescending and outmoded than probably in French. In 1960s France, the term might still have had currency when referring to what we nowadays call science communication. However even then a more adequate English translation would probably have been 'popularisation', making science understandable for the wider public, helping along with a popular account that avoids technical language.

Since the 1960s, quite a bit of water down the river and the debate has fundamentally challenged patronising notions of communication from high up to the 'vulgus' [Latin for 'common people', or as the English sarcastically added, 'the great unwashed'] down below. The debate moved from a concern with an illiterate and ignorant public, to that of public opinion in the dual sense of a) public understanding of science as in the title of the famous 1985 report by the Royal Society of London, and of b) creating events and fora for public engagement, where citizens meet to consider scientific developments as part of their common interest and future. Although science and the public will probably never be an encounter of epistemic equals, a clear need for occasions and formats where experts and non-experts can discuss matters of common interest eye-to-eye in open debate and without undue interference of authority and hierarchy. The once dominant model of science popularization, i.e. the purity of science diluting down the river, is complemented with more two-way feedback models of translation, or even dialogical modes of engagement with the public. So much of the sensitivities and background shifting debate which any translation of the 1969 piece will have to take into account.

2 Recognising the genre of communication remains important.

In my reading of Jurdant (1969) I recognise three points that seem important to recover for present discussions. Firstly, popular science is a genre of communication in its own right, and it needs to be appreciated as a form of discourse with specific characteristics, and certainly different from pure scientific discourse. This is both an old and recent idea in science communication that sits well with observations that science news is a form of knowledge midway between science proper and common sense. Meditsch (2005) has elaborated this for news produced by journalists in an editorial process considering an audience, and Park (1940) had introduce similar ideas earlier : science news is neither theoretical-empirical know-that nor is it tacit know-

how, but it opens up a middle ground to readers of 'being acquainted with some facts of science'. In this way popular science adds and enriches our common sense understanding of the world.

Jurdant (1993) himself later elaborated his genre ideas in his theory of popular science as the 'auto-biography of science'. The textual analogy between popular science and autobiography highlights the inherent 'bias' and apologetic nature of popular science. Its epideictic rhetoric speaks only well of its subject ; popular science is part of the self-observation of modern society and a source of myth making about our scientific-technological societies. This style of writing can dispense of the personal pronoun 'I' and nevertheless remains self-referential, as Jurdant observed. This is not an unfortunate accident, but unavoidable. Here, Jurdant closely follows Ludvik Fleck (1979) for whom popularisation of science is the third integral factor stabilising the scientific fact generated by the collective thought that champions a certain style of thought. Popular science is not embellishment, it performs epistemic functions of self-reassurance in the conduct of science.

Secondly, we must recognise the difficulties in translating topics from pure science into the genre of everyday language. Jurdant's essays demonstrate in detail examples of how this process of signification unfolds through the use of metaphorical and other figures of non-literal speech.

And thirdly, Jurdant's main thesis needs to be saveguarded for present discussions : moving scientific discourse into the genre of everyday language is an ideological move in the sense of translating an 'open discourse' that is neutral onto the world to a 'closed discourse' that is framed on by everyday judgement. In everyday discourse, things and events are necessarily reported as good or bad, beautiful or ugly, and useful or useless. Neutral scientific discourse actively tries to avoid what popular science is necessarily and purposefully full of. The ideological features of popular science are inherent and inevitable when we translate and position the knowledge of an indifferent Nature and Cosmos into everyday concerns of human beings in their lifeworld, and this positioning is the semiotic import of everyday language.

3 Ideology makes science communication permanently vulnerable to critique

These ideological intonations of science communication, recognised and analysed by Jurdant (1969), are unavoidable, come with the task, and make any public discourse of science vulnerable to fundamental critique from the point of view of purist science. Science communication is thus very much at the mercy of scientists and epistemic purists or self-styled vigilanti, who either tolerate the text if it serves good purposes, or turn against it if it does not. Terms such as 'simplification', 'distortion', 'sensationalisation', 'hyperbole', 'fake news', 'misinformation' or simply 'unacceptable rhetoric' are descriptors that are easy at hand. Popular science down-stream from laboratory notes has flexible standards of acceptability, and as such it is part of the boundary work of scientific authority as explicated 20 years later (Hilgartner, 1990).

4 In the long-view, cyclical iconoclasm also recurs in science communication

If all popular science is ideologically bent, it will at any moment be vulnerable to viglianti deconstruction. Though this might not always be expedient, it makes for an unstable science communication system. We can expect that periods of predominantly 'iconodulant' writings about science are punctuated by periods of more 'iconoclastic' bend. At times, the 'admirer of scientific icons' are unrestricted in their enthusiasm and idolatry of all things scientific ; hailing present and past scientists as superior beings akin to heroes, gurus or saints, and they celebrate the triumph of science under the moto : the more stories, the merrier. The science writer with an 'iconoclastic' leaning and on an investigative beat, however, worries more about the proliferation of hyperbole in science news, about 'fake news' carried away by its own narrative and running the risk of deviating too far from the truth either by omission or commission. These critical attitudes express concerns about too much science news of the wrong kind and prefers quality over quantity. Critical writers try to avoid and de-mask scientific idolatry, and call for moderation and quality control.

And indeed, the empirical record of science news over the past 200 years suggests an unstable system of story flow ; 30-50 year long waves of science news above expectations alternate with periods of news flow below trend expectations (Bauer, 1998 and 2012). If this secular hypothesis of an ebb and flow of popular science writing, oscillating between expansion and moderation of story flow holds water, it gives us another reason to re-read Jurdant (1969).

Our data shows that the late 1960s saw indeed a down-turn in science news flow, letting go of the grip of post-war modernisation rhetoric and opening up a more critical discourse of science writing, which is exemplified in Jurdant (1969). Some 40-50 years later, we can observe another turning point, after science news have globally expanded since the 1990s with new media (Pansegrau & Bauer, 2019). At this moment in time, it is both timely and timeless to rehearse the idea of the inherent ideological character of popular science texts which chimes well with iconoclastic arguments. The 'medialisation hypothesis' (Weingart, 2012) sees risks for the conduct of science itself arising from the massive expansion of science news : individual scientists and the scientific community are lured into over-adapting to the logic of public attention seeking and thereby jeopardise the epistemic authority of science in society. Others practice the protection of knowledge consumers, writing against misinformation that arises from 'churnalism' that is reduced to processing pre-fabricated commercial Public Relations messages (Goldacre, 2012) and muddies the waters between reportage and product marketing, or more insidious, between PR and science communication. And not for the first time, one must consider popular science texts as part of the social representation of science ; as such they will be subject to the 'iconoclastic impetus', by which I mean the cycle of tolerance and intolerance towards popular mentality and 'delusions of the masses' (Bauer, 2015). The return of iconoclastic worries in science communication calls for critical discussions among researchers and communication practitioners alike, and Jurdant (1969) is a classical piece to start with. I thus renew my hope that it will be available in English translation before too long.

References

Bauer MW (2012) Public attention to science 1820-2010 – a 'longue durée' picture, in : Rödder, S., Franzen, M. and P. Weingart (eds) The Sciences' Media Connection – Public Communication and its Repercussions. Sociology of the Sciences Yearbook 28, Dordrecht : Springer, chapter 3, pp35-58.

Bauer MW (2015) On (social) representations and the iconoclastic impetus, in : Sammut, G, E Andreouli, G Gaskell and J Valsiner ; eds) Cambridge Handbook of Social Representations, Cambridge, CUP, p44-63.

Bauer M (1998) 'La longue durée' of popular science, 1830-present, In Deveze-Berthet D (ed) *La promotion de la culture scientifique et technique : ses acteur et leurs logic*, Actes du colloque des 12 et 13 decembre 1996, 75-92, Paris, Publications de Universite Paris 7 – Denis Diderot

Fleck L (1979) Genesis and Development of a Scientific Fact, Chicago, CUP.

Goldacre B (2012) Bad Pharma – how drug companies mislead doctors and harm patients, London, Forth Estate.

Hilgartner S (1990) The dominant view of popularization : conceptual problems, political uses, Social Studies of Science, 20, 519-39.

Jurdant B (1969) Vulgarisation scientifique et ideologie, Communications, 14, 150-61.

Jurdant B (1993) Popularization of science as the autobiography of science, Public Understanding of Science, 2, 365-73.

Meditsch E (2005) Journalism as a form of knowledge : qualitative approach, Brazilian Journalism Research, 1, 2, 1-14.

Pansegrau P & MW Bauer (2019) The intensity of media attention as an index of authority of science, in : Bauer MW, P Pansegrau, and R Shukla (eds) The Cultural Authority of Science – Comparing across Europe, Asia, Africa and the Americas, London, Routledge (pp105-21) ; Vol 40 Routledge Studies of Science, Technology & Society

Park RE (1940) News as a form of knowledge : a chapter in the sociology of knowledge, American Journal of Sociology, 45, 5, 669-686.

Weingart P (2012) The lure of the mass media and its repercussions on science, in : Rödder, S., Franzen, M. and P. Weingart (eds) The Sciences' Media Connection – Public Communication and its Repercussions. Sociology of the Sciences Yearbook 28, Dordrecht : Springer, chapter 2, pp17-32.