Does scientific research need to be more inclusive to be more relevant and useful? And how?

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Building deliberative democracy: insights from citizen science
Venice, 19 December 2019
Beyond the science bubble

Research leaders in the United States and elsewhere should address the needs and employment prospects of taxpayers who have seen little benefit from scientific advances.

One question dominated discussions at the annual meeting of the American Association for the Advancement of Science (AAAS) this weekend. Researchers, journalists, and science lobbyists squeezed into conference rooms, perched on recycling bins, and sat on the floor between rows of filled chairs as they dirname to listen to those who tried to offer assistance. The question was raised in various ways, but the answer was always the same: how should science and scientists respond to the administration of President Donald Trump?

The answer was no less than 10 to 12 political activists to build momentum and 60 to 70 people to listen to their question. It is not Trump who scientists must respond to. The real question is what science can do for the people who voted for him. Exactly who do you support him, and why, but also the political scientists who do it. Can they do right by those who voted for him and at least achieved a combined purpose. They had an answer of sorts to their question.

But it is the wrong question. It is not Trump who scientists must respond to. The real question is what science can do for the people who voted for him. Exactly who do you support him, and why, but also the political scientists who do it. Can they do right by those who voted for him and at least achieved a combined purpose. They had an answer of sorts to their question.

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The needs of millions of people in the United States are not well enough served by the agendas and interests that drive much of modern science. When it is trickling down through society, these studies of discovery science arguably deepen the pool of wealth and privilege already in place — creating expensive new drugs that most people cannot afford.

It is right that more scientists should tell stories of the good their research can do. But it is more important and urgent than ever that researchers should question the demands of science and science education and scientific research can help the many whose jobs are going to be displaced by the very inventions that scientists are producing.

As they ponder their next move, in response to the election of Trump, science organizations — universities, funders, supporters, and the rest — should look harder at social problems and opportunities, and seek ways for science to help.

For example, some universities are increasingly engaging in climate change adaptation. There will be employment opportunities in creating companies that help cities and other regional communities to protect themselves from climate change, whether the obstacles may be big, conditioned by the ready applicability and intellectually stimulating insights and improved decision-making that research will deliver.

More universities, for example, could follow the example of Michigan State University in East Lansing, building stronger links with their local communities, and seeking to work with them to tackle research problems that affect their quality of life. These include monitoring and quality, and for example, addressing the challenges of regional demographics, such as the larger number of elderly people who live in some regions and how to deliver health care to them.
"Beyond the science bubble", *Nature*, February 2017

"The needs of millions of people in the United States are not well enough served by the agenda and interests that drive much of modern science"

"Just telling the same old stories won’t cut it. The most seductive of these stories – and certainly the one that scientists like to tell themselves and each other – is the simple narrative that investment in research feeds innovation and promotes economic growth"
Introduction

- Growing dissatisfaction with scientific research and innovation: global contribution to economic growth is still of course on the agenda but it does not exhaust today society expectations

- Relevant and desirable research and innovation outputs are also expected
RRI Responsible Research and Innovation  H2020

“Responsible Research and Innovation (RRI) implies that societal actors (researchers, citizens, policy makers, business, third sector organisations, etc.) work together during the whole research and innovation process in order to better align both the process and its outcomes with the values, needs and expectations of society.”

Implementation: public engagement, open access, gender, ethics, science education
Introduction

- Public participation in research and innovation is thus seen and advertised as a mean to foster and achieve responsible research and innovation.

- More broadly, various political benefits are expected: building active political communities, structuring public debates, empowering citizen, increase trust in scientific expertise, etc.

- Increasing visibility and displayed institutional support, such as "Citizen Participatory science", etc.
Introduction

- Widespread academic and political discourses in favor of direct participation of the citizens, as an appropriate response to the following society’s evolutions:

  **Six hypotheses (Blondiaux 2008):**
  
  i. An increasingly complex society
  
  ii. An increasingly divided society
  
  iii. An increasingly reflexive society
  
  iv. An increasingly rebellious, disobedient society
  
  v. An increasingly defiant, challenging society
  
  vi. An increasingly ungovernable society
Outline of the talk

Central question: Does scientific research need to be more inclusive to be more relevant and useful (more responsible)? And how?

Discuss some specific potential benefits and challenges of citizen participation in science

I. In the very process of producing knowledge

II. In the setting of research agenda
Figure 19.1
A map of public participation in science and technology.
I- Citizen participation in the very process of producing knowledge

- Epistemic (and practical) benefits of drawing on lay expertise:
  - Alison Wylie’s analysis of collaborative practice in Archeology (with descent communities, especially Aboriginal and Indigenous communities)
  - Brian Wynne’s study “May the sheep safely graze?”
  - Positive role of Associations of patients in research on AIDS (more actionable scientific findings)
  - Etc.

- Main challenge: (lay)science education for... professional scientists
I- Citizen participation in the very process of producing knowledge

Well-known insights from social epistemology on the virtues of diversity and inclusiveness

- Cognitive-social norms of “organized scepticism” (Merton) / “transformative criticism” (Longino)
  - Public forums and **shared standards of criticism**
  - **Uptake of criticism**
  - Tempered equality of intellectual authority

- Heterogeneity of perspectives increases the objectivity and reliability of the knowledge produced

**Key issue**: Who should be included? Should one go beyond the frontiers of scientific communities?
Potential difficulties for a more inclusive process of transformative criticism:

When a shared professional training and culture is lacking:

- Possible lack of symmetry in response to criticism/disagreement on central norms of justification (i.e., “don’t question authority or tradition”)?

- The “double-edged sword” of the effects of diversity: “demographic diversity may generate obstacles to communication and trust, which may impair group performance” (Steel 2019)

- Such difficulties are under-analyzed (empirical studies are very sparse...)

> Open question: To what extent does the lack of a common
II- Citizen participation in the setting of research agenda

Still a theoretical topic (at least at the scale of national and supranational research and innovation strategies)

In real life... mostly “epistemic elitism”
In real life: “epistemic elitism”

Conseil stratégique de la recherche
(auprès du premier ministre)
Research Strategic Council
(to the Prime Minister)

Mission: “identify and propose a limited number of big research and technological priorities to prepare and construct the future of France”

Who is involved in the choices made about research priorities?
II- Public participation in the setting of research agenda

- Composition of the French Research Strategic Council (26 members)
  - majority of very distinguished scientists (but mostly from the natural sciences)
  - a few representatives of big companies (Orange, Total, EADS, etc.)
  - three elected representatives

And... a novelist, Marie Darrieussecq (representative of the lay citizens?)
Francis Bacon’s House of Salomon (1627), a bit renovated, again

The wise experts (the members of Salomon’s House) can be expected to know what’s objectively in human interests, the good at which scientific inquiry should aim.

Such epistemic elitism would be just fine... if the goal of science were to produce new knowledge in general, for its own sake.

But there is a shift toward more targeted, exogenous expectations in relation with society’s problems.

Scientists’ epistemic expertise (in their own field) is not the kind of
II- Public participation in the setting of research agenda

More democratized governance of science, in order to respond to society’s expectations:

- “Leave it to the market” option
- Our elected representatives
- Direct participation of the citizens

Criteria of comparison:

Better alignment between the outputs of scientific research and innovation and the needs and expectations of society
II- Public participation in the setting of research agenda

I- “Leave it to the market” option:

➢ when guided by economic interests, science can only respond to a limited (albeit central) subset of society needs
II- Public participation in the setting of research agenda

II- Our elected representatives

- They are supposed to convey the whole range of needs and interests of the people they represent but...
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II- Our elected representatives

- They are supposed to convey the whole range of needs and interests of the people they represent but...

III- Direct participation of the citizen

- Avoid the pitfall of a possible gap between the actual needs of the citizens and the needs taken into account in the setting of research priorities but...

- Lack of political representativeness, hence no “binding force on elected officials” (Brown 2004)
II- Public participation in the setting of research agenda

Opposition from scientific communities on two (related) grounds:

- Resistance to a shift of the very goals of science toward more targeted, exogeneous problems (tension blue sky research vs. use-inspired research)

- Defense of the autonomy of science (when it comes to the setting of the research agenda)
“The nature of all politics and politicians means it is easier for our pay-masters to feel comfortable about the proclaiming of programmes relating to Energy, Health, Materials, Climate Change, the Hydrogen Economy and so on, rather than to announce, let alone trumpet, that money is available for scientists to follow their curiosity in their own disciplines”

*Sir J. Cadogan (+ 41 members of the Royal Society, 2014)*
To sum up, more public participation is promising...

- Potential epistemic benefits: A more inclusive science can be (sometimes) a (epistemically) better science, especially when it is about “local” epistemic or practical issues to solve.

But... issues of lack of shared training/culture/”ethos”, to be addressed not only by “educating” lay people, but also by “educating” professional scientists.
Potential political benefits: direct citizen participation in the setting of research agenda may contribute to fill the gap between research agenda and the needs of citizen in terms of scientific findings (especially at micro-levels of research strategy)

But...

Issues of lack of shared views on the very goals of science

- Need to change scientists’ views on these goals (again, some form of “science and society” education for scientists) in order to facilitate the articulation between “epistemic elitism” and democratized options for the governance of science
Direct citizen participation in science is not and should not be intended to produce decision but it has to be clearly designed in relation with a decision (taken by our policy makers)

A precise policy horizon is always needed (Blondiaux 2008)

Otherwise...
III- (Un)Conclusive remarks and pending issues

At stake: how to avoid usual suspicions vis-à-vis direct citizen participation?

“Se vogliamo che tutto rimanga come è, bisogna che tutto cambi”
Institutional discourses in favor of “public engagement with science” seen as just an alibi to reduce political conflicts and protestations against science-based policies (second-order “post-political, managerial discourses”)
Thank you