



# Scientific Progress and Social Progress. Some reflections

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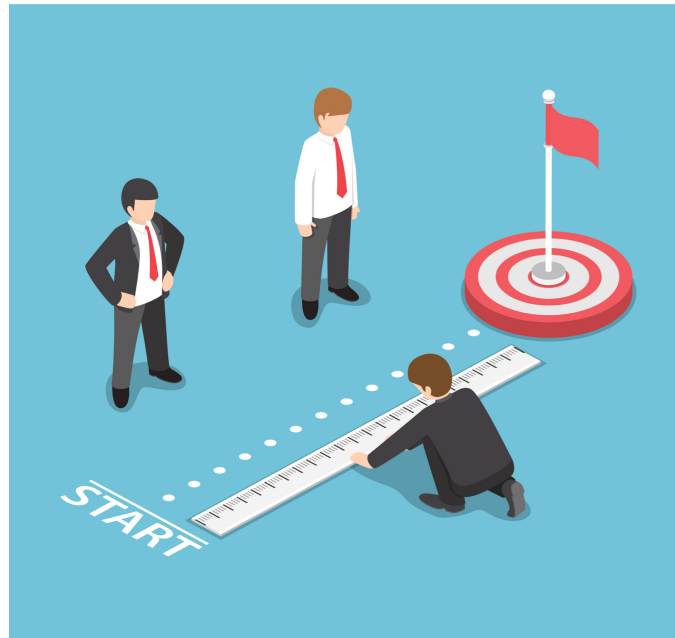
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# Introduction

- Three inter-related tasks:
  1. rethinking scientific progress in a way that engages with the question of justice.
  2. two examples of how scientific progress is entangled with questions about distributive justice and intergenerational justice.
  3. sketch a proposal for a kind of cosmopolitanism in science that in my view has the potential of taking care of some of these questions about scientific progress and the duty of justice.

# Progress: metrics, targets, and milestones

## Progress



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## Four philosophical views about scientific progress

- Progress as getting closer to the truth.
- Progress as puzzle-solving.
- Progress as accumulation of knowledge.
- Progress as increased scientific understanding.

• Image © Britannica.



# Taking my cue from Heather Douglas (2014)

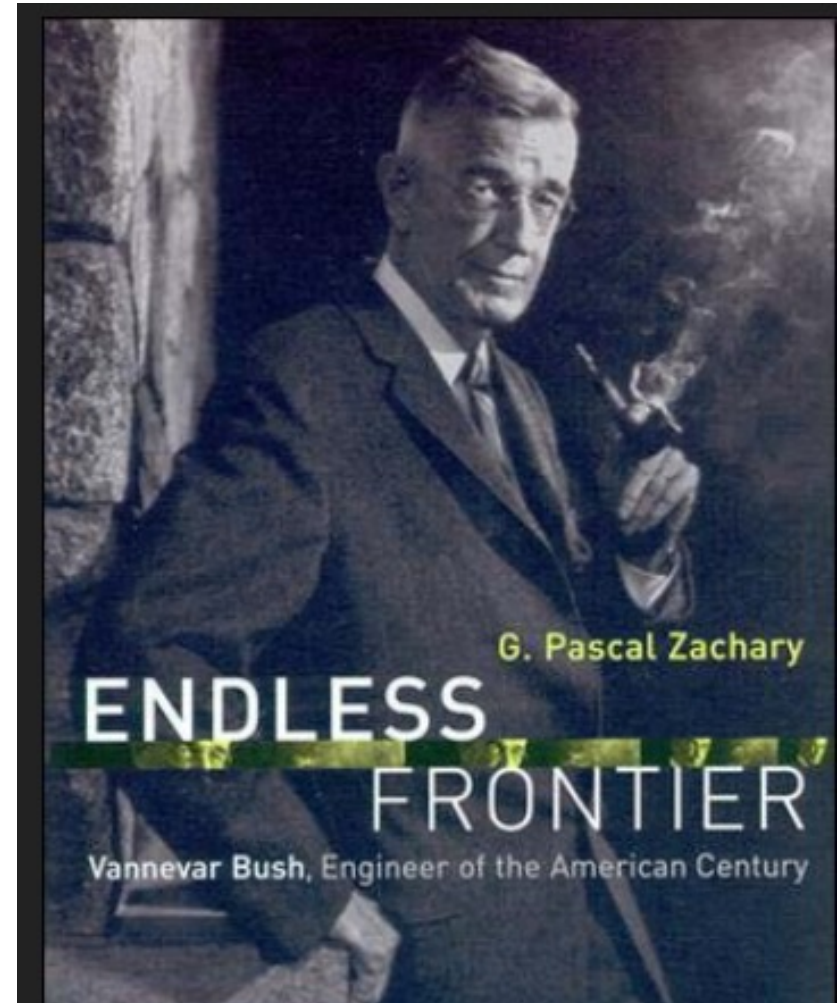
- “If WWI created doubts about the equivalence of scientific and societal progress, WWII and the atomic bomb demolished it, science and the powers it unleashes could indeed make society better, or it could end civilization completely” ...
- hence the need for a “more socially and ethically mediated conception of progress, one that takes into account all of science, both pure and applied...”(p. 63).

Heather Douglas (2014) ‘Pure science and the problem of progress’, *Studies in History and Philosophy of Science* 46, 55-63.



## 2. How to restore a link between scientific progress and social progress?

- Can we navigate the complexity of this landscape where questions of justice arise at every corner while looking at science at large—pure and applied—scientific theories no more than large-scale scientific investments and innovations?



First  
example:  
vaccine  
nationalism  
and global  
distributive  
justice



Kayapo Indigenous block a highway near Novo Progresso, Para state, Brazil, Monday, Aug. 17, 2020. Protesters blocked the highway BR-163 to pressure Brazilian President Jair Bolsonaro to better shield them from COVID-19, to extend damages payments for road construction near their land, and to consult them on a proposed railway to transport soybeans and corn. (Andre Penner/Associated Press)

- Are scientific advancements such as say a vaccine a 'public good' once in the hands of nation-state government, despite being patented, produced and commercialised by private companies?
- And how should governments treat such 'public goods'?
- How to ensure scientific advancements qua public goods are distributed fairly?



- “The full protection of intellectual property and monopolies will only negatively impact efforts to vaccinate the world and be self-defeating for the U.S.,” the authors wrote, adding that “artificial” supply shortages could take billions of the U.S. GDP.

(C) <https://thehill.com/changing-america/well-being/prevention-cures/548449-100-nobel-laureates-urge-biden-to-make-covid-19>

## 100 Nobel laureates urge Biden to make COVID-19 vaccines patent-free

The group argued that suspending patents would expand the capacity to manufacture vaccines by eliminating monopolies that drive global vaccine shortages.

*By Adam Barnes | April 15, 2021*



- This is an example of **distributive inequities** in the production, supply and administration of a **scientific-advancements-as-public-goods** and a clear case where scientific progress does not necessarily go hand in hand with social progress understood at a global rather than local (nation-state) scale.
- The main barrier, as I see it, is that even the best political philosophy tools do not equip us to think about the **worldwide value** of science as a public good.
- Scientific knowledge and advancements are **transnational public goods**, exportable and moveable across countries although they are mostly administered by national and international bodies rather than transnational ones.

## Second example: climate change and intergenerational justice



- Why should current generation invest today in X if they will not be able to reap the benefit of X within their timeline? Even more pressingly in some situations, why investing today in expensive X when current taxpayers will either not live long enough to see the benefits, or worst case scenario, the future benefits might be uncertain as of today?

- in either case one generation is going to pay a high costs (either the current one for investing in the future, or the future one for being deprived of the benefits that might results from not-investing in future infrastructure/policies today).
- This raises the issue of specify a notion of scientific progress that might be sensitive to the epistemic but also socio-economic needs of specific groups – and the question inevitably becomes: *which* groups? *Whose* needs?

# Sixth Assessment Report

The Sixth Assessment Report is underway.

- IPCC AR6 (expected later in 2021) integrates the physical basis for global warming with considerations about possible socio-economic assumptions on mitigation pathways—the so-called Shared Socioeconomic Pathways (SSPs).
- 5 SSP have been identified with specific assumptions about GDP, population growth and urbanizations features
- © <https://www.ipcc.ch/assessment-report/ar6/>

### 3. Scientific progress and cosmopolitanism in science

- Instead of asking about aims and goals, we need to consider the duties and obligations that come with scientific knowledge.
- *Cosmopolitan obligations* in science—obligations pertaining to ‘world citizenship’.
- *Weltbürgerrecht* (cosmopolitan right) and “*cosmopolitan norms of justice*” (Karl Jaspers, Hannah Arendt, Seyla Benhabib et al.)

- UN Declaration of Human Rights (UNDHR), Article 27 (1):  
“Everyone has the right freely to participate in the cultural life of the community, to enjoy the arts and to *share in scientific advancement and its benefits*” (emphasis mine).

© <https://www.ohchr.org/en/udhr/pages/introduction.aspx>



# Scientific progress and social progress

- This human rights approach to scientific advancements and progress signals an important shift:
- *from* scientific knowledge and innovations as individualistic achievements whose economic benefits can be patented and commodified
- *towards* science as an expression of human dignity and a human activity without which, in the words of the Mexican drafting members of the UNDHR, “no social progress would be possible”.



## But *who* is 'everyone'?

- Varieties of cosmopolitanism that do not advance universalistic globalising Western-centric claims disguised under cosmopolitan lingo.
- I want to echo some of these scholars (from Homi Bhabha to Boaventura de Sousa Santos among others) in making a plea for a **non-classist, non-elitist kind of scientific cosmopolitanism** as a way of starting a conversation about *who* scientific knowledge is really *for*, *who produces* scientific knowledge over time, and *who* ought to be benefitting from it.

# Implications for science policy and governance

- Going beyond the linear cascade-down model of Vannevar Bush.
- What kind of transnational institutions can be created so that cosmopolitan obligations in science can be met and delivered?
- *(More work to be done. In the meantime, some of this material is now in press Massimi, *Perspectival Realism*, OUP 2021, Ch 11 “Multiculturalism and Cosmopolitanism in Science”).*

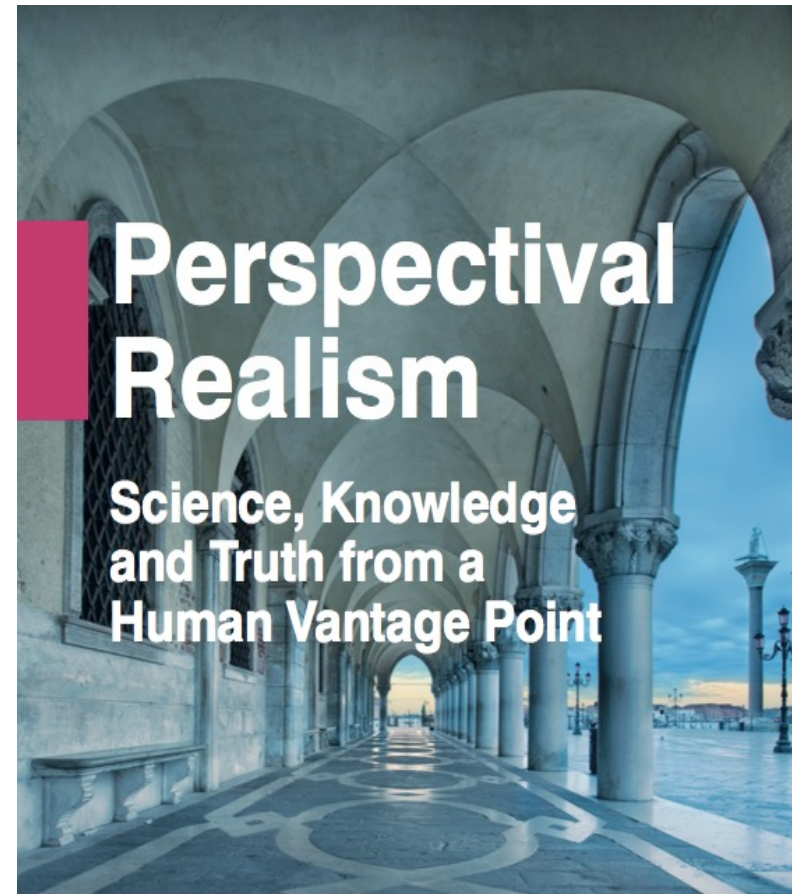
*Thank you.*

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