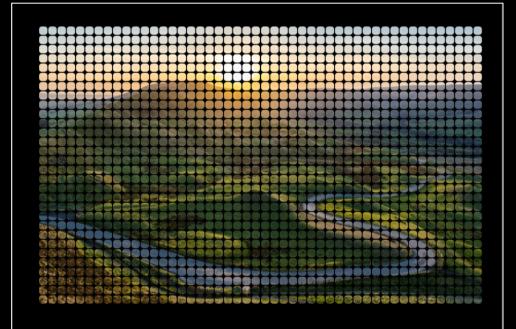
## The Ascent of Open Access

Daniel W. Hook 0000-0001-9746-1193 Focus on Open Science 7<sup>th</sup> July 2019



## https://doi.org/10.6084/m9.figshare.7618751.v2



**Digital Research Reports** 

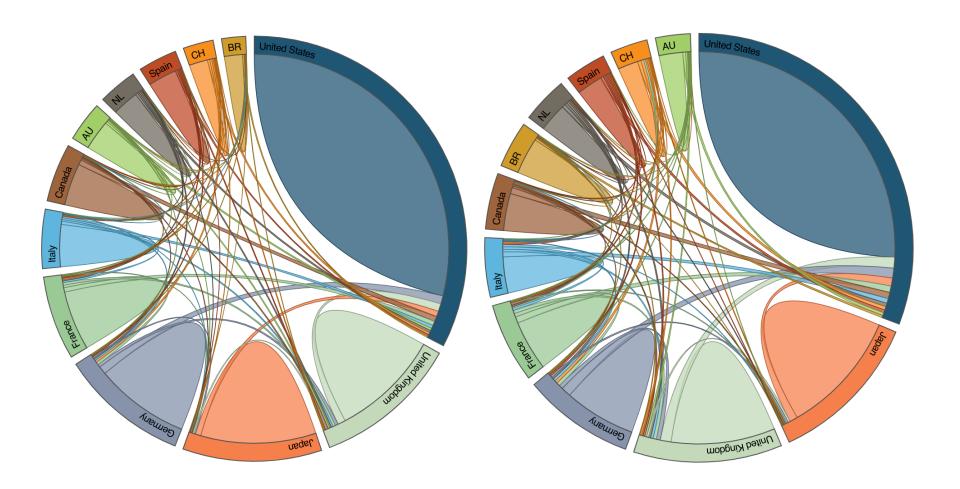
The Ascent of Open Access

An analysis of the Open Access landscape since the turn of the millennium

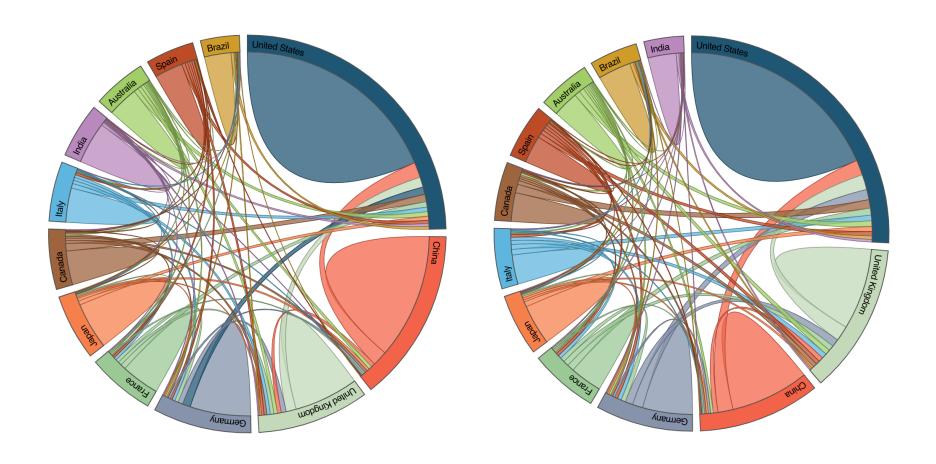
Daniel W Hook, Ian Calvert and Mark Hahnel

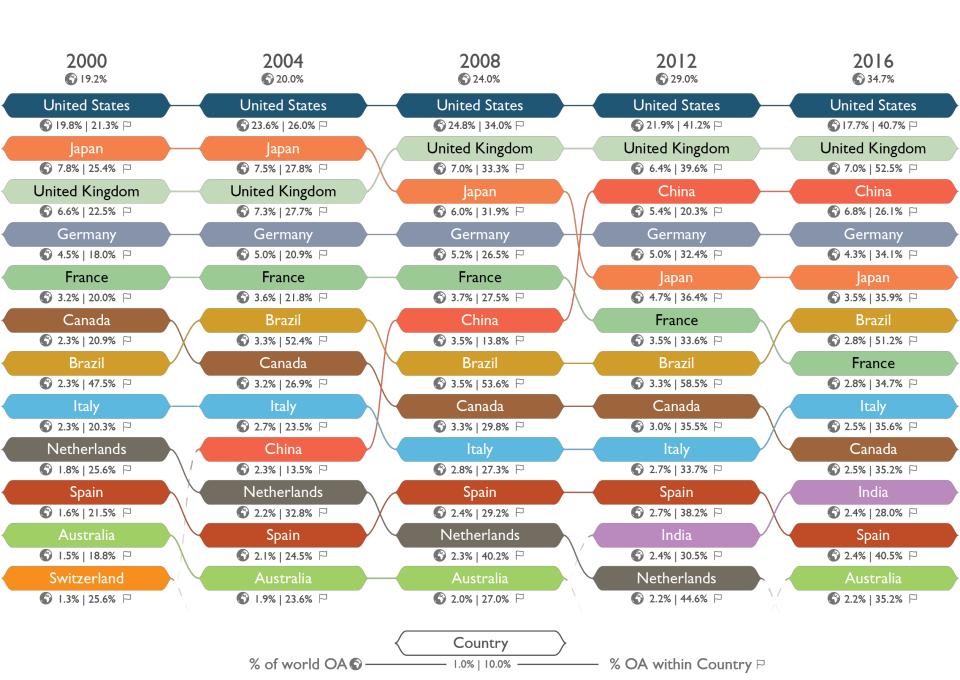
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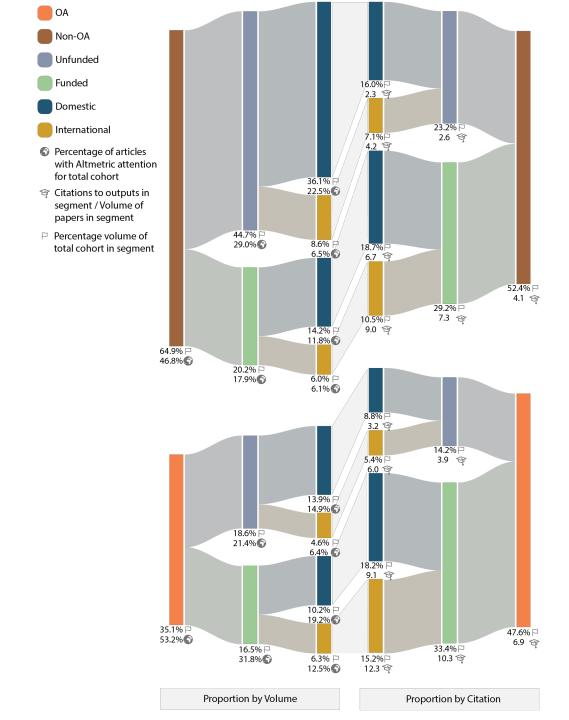


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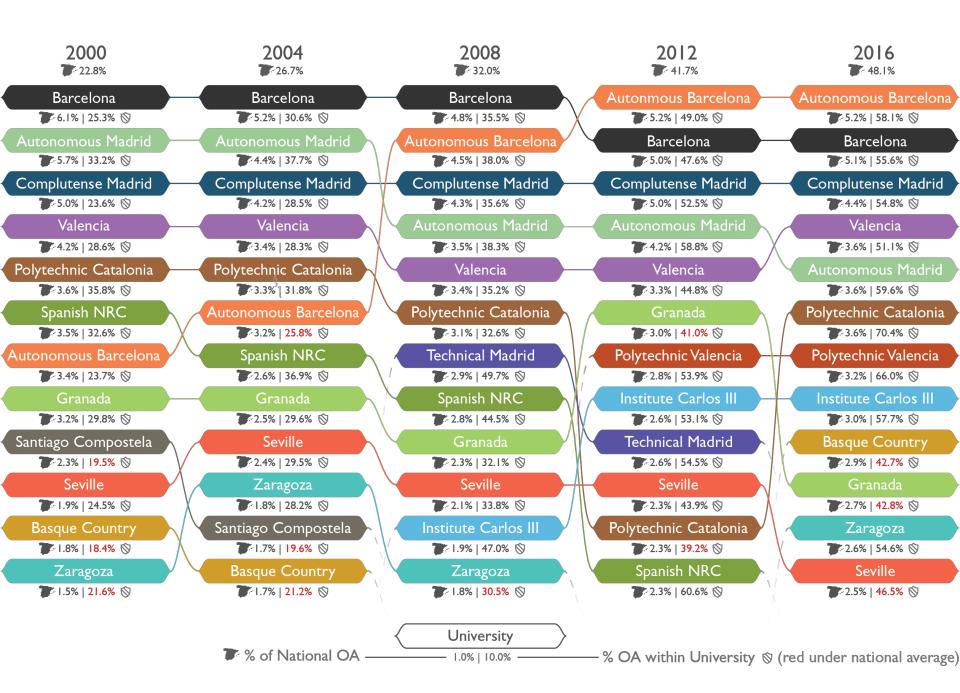


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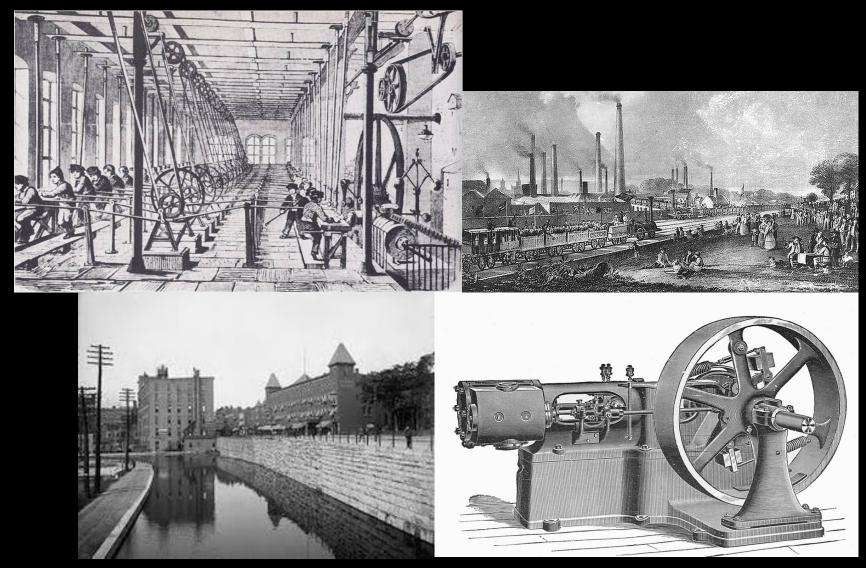


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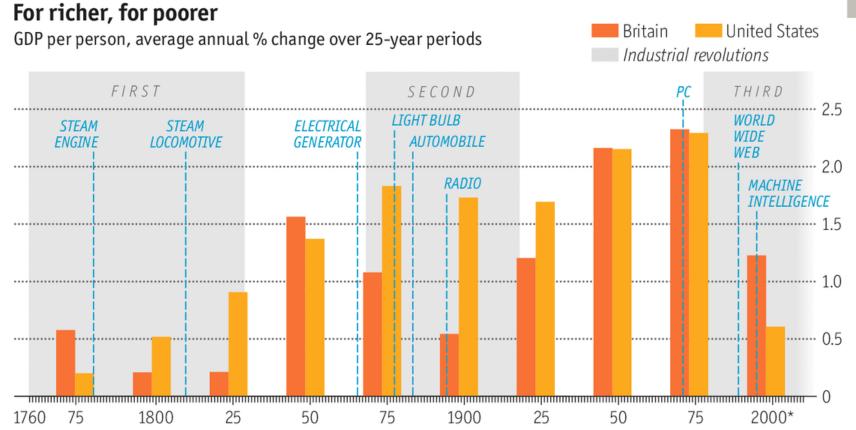


The industrial revolution wasn't only one thing...



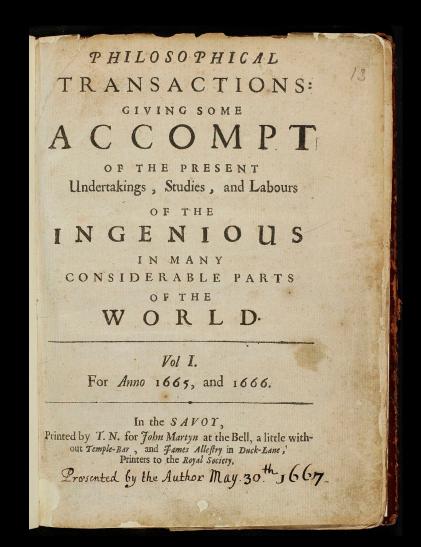
...and the open revolution won't be either

\*To 2010



Sources: Maddison Project; The Economist

## The Web's 2.0 was Research's 1.0



## What are we aiming for?

Open: As open as possible, as closed as context demands

Reproducible: By design (versioned)

Contextualised: Discoverable and accessible

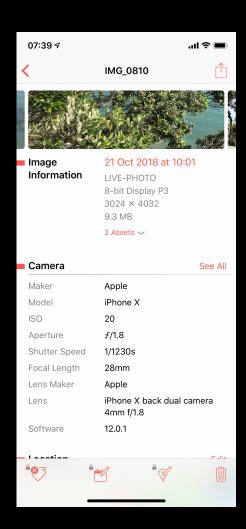
Elegant: Invisible Infrastructure

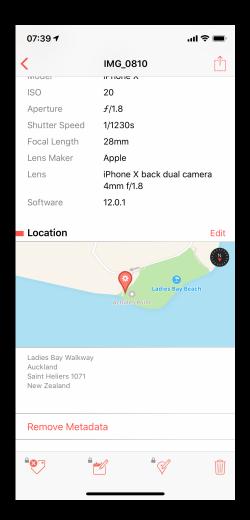
Trusted: Open basis for evaluation

## Designing Reproducibility

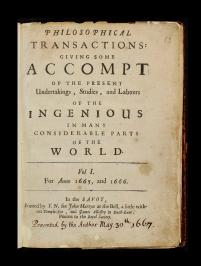


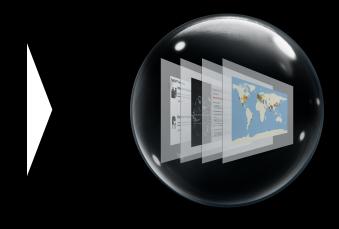
## Invisible infrastructure





## A Fundamental Shift...



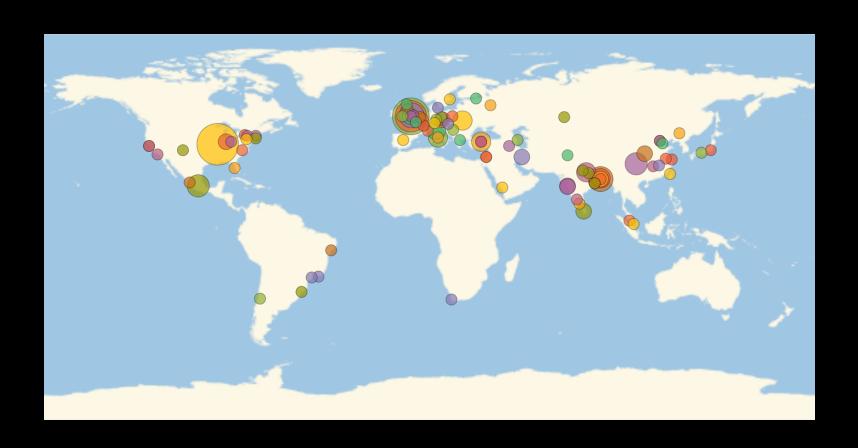


#### Reproducible by design

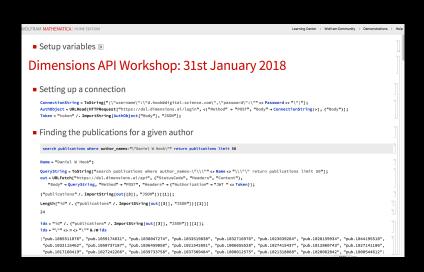
As open as possible, as closed as context demands

Invisible Infrastructure

## Bursting the bubble...



## The "atom" of communication is changing

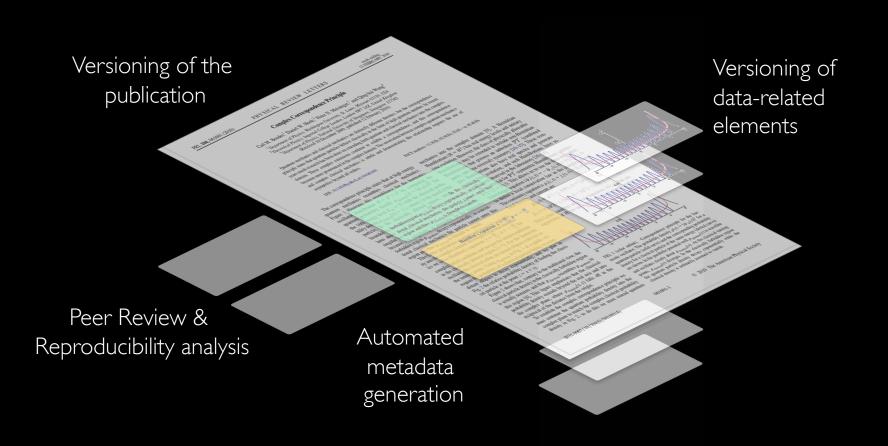


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           volume: "7".
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           relative citation ratio: 0.38
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               title: "SAHARA-J Journal of Social Aspects of HIV/AIDS"
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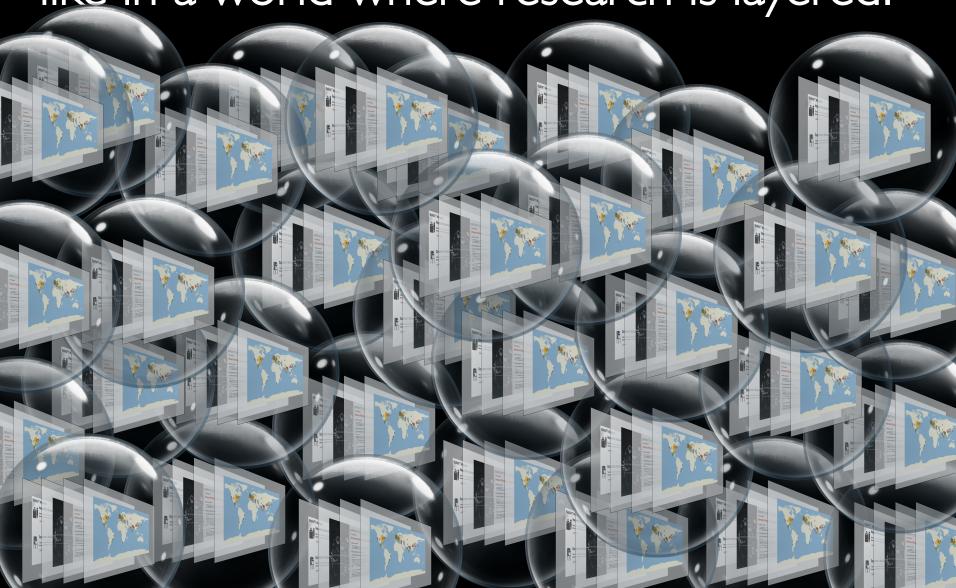
## The "atom" of communication is changing



## The presentation of research is becoming disaggregated...

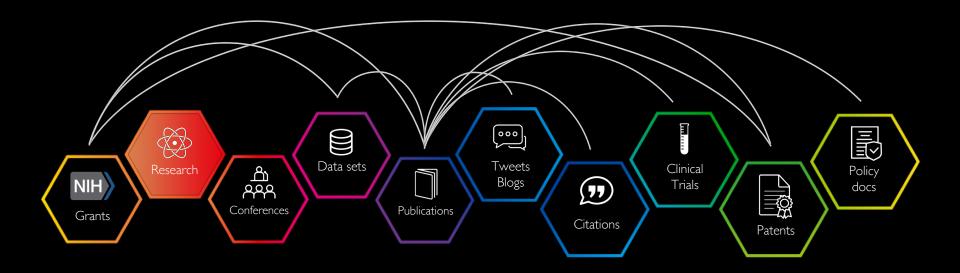


What should discovery and access look like in a world where research is layered?



# Well, we need to shift away from publications...

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FILTERS FAVORITES	PUBLICATIONS         GRANTS         PATENTS         CLINICAL TRIALS         POLICY DOCUMENTS           98,216,711         4,333,072         37,805,641         445,528         384,935	〈 ANALYTICAL VIEWS		
✓ MY GROUPS	Sort by: Start Date ➤			
○ C9	Title, Funder, Researcher Funding amount (GBP), period	0601 Biochemistry and Cell Biology 305,773		
○ EU-27	Sensing alarm responses of ungulate herds to prevent poaching 2021 -	0604 Genetics 218,851 0306 Physical Chemistry (incl. Structural) 173,935 0912 Materials Engineering 172,902 1117 Public Health and Health Services 156,997		
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O Ivy League	Netherlands Organisation for Scientific Research to M.J.A. Weterings			
O Ivy Plus	to M.O.A. Weterings			
OA Producers	Impact of deep subglacial groundwater on ice stream flow in 610,107	OVERVIEW ~		
Russell Group	West Antarctica (IGIS) 2021 - 2024			
<b>О</b> Тор	Natural Environment Research Council to Bernd Kulessa, Poul Christoffersen, Andrew Mark Smith, Alexander Mark Bris	Aggregated funding Average funding amount amount		
> START YEAR	Finding the most distant galaxies with NIRSpec guaranteed time 1,811,788 on the James Webb Space Telescope 2020 - 2025	GBP 852.3 B GBP 244 K		
> ACTIVE YEAR	European Research Council			
> RESEARCHER	Interactive effects of land-use related disturbances on the 76,100	0 Rig Vil. Vil. Vil. Vil. Vil. Vil. Vil. Vil.		
> FUNDER	community composition, function and stability of AM fungal 2020 - 2022 communities			
> FUNDER GROUP	Estonian Research Council to Kadri Koorem	→ Starting grants		
> COUNTRY OF FUNDER	Centre for Competitive Advantage in the Global Economy (CAGE) 920,835			
> RESEARCH ORGANIZATION	Economic and Social Research Council  to Sascha O Becker, Arun Advani, Robert Akerlof, Vera Eva Troeger, Sharun Muk	RESEARCHERS ~		
> COUNTRY		Betsy L Humphreys GBP 1.6 B		
> STATE/REGION	Quantifying the contribution of sympagic versus pelagic diatoms 129,394 to Arctic food webs and biogeochemical fluxes (SYM-PFI) 2020 - 2022	United States National Library of Medicine, U  Andrea Barnes GBP 1.3 B		





## THIS WEEK

**EDITORIALS** 

**WORLD VIEW** Ahmed Zewail explains why scientists should not be managed **p.347** 

DRONGOS Bird study shows crime does pay — for victims p.349

SUPER DUPER New computer means no more slow bytes from China p.351

#### **Closing the Climategate**

The official inquiry might have exonerated scientists, but attitude changes are needed for science to ensure it holds the public's trust.

his week marks the first anniversary of the worldwide scandal over the release of e-mails stolen from a computer server at the University of East Anglia (UEA) in Norwich, UK. The server was in the university's Climatic Research Unit (CRU), most of the correspondents involved were climate scientists and the affair will be forever known as Climategate. The scientist at the centre of the storm, Phil Jones, the head of CRU, tells *Nature* on page 362 that he feels the worst is behind him.

It would be naive for Jones and other scientists to assume that the fuss has passed into history. Never mind that almost all of the accusations thrown at the researchers involved have been proven baseless. Never mind that much of the media has retreated from the aggressive stance it adopted during its 'comment first, ask questions later' approach to the content of the e-mails. And never mind that the scientific basis for the global-warming problem remains as solid as it was a year ago. Huge damage has been done to the reputation of climate science, and arguably to science as a whole. That impact deserves to be assessed and the necessary lessons need to be learned.

Take the name Climategate itself. The 'gate' suffix, now routinely

may routinely complain about the shortcomings of peer review to other scientists, but they often unite behind it in the face of criticism from outside the scientific sphere. That a study has been through peer review is used too often as a universal defence of its quality. If more scientists were more forthcoming about the flaws in their quality-control

"Climate scientists have to accept that they are in a street fight. They should expect a few low blows." system, then commentators and the wider public may have been more willing to accept that scientists engaged in it do not always act as the public would expect.

With the official inquiry clearing the CRU scientists of fudging data and of abusing the peer-review process, most of the more informed criticism has now settled on the

fuzzy notion of the need for greater transparency and openness. Calls for full release of computer code written by climate researchers seem driven more by the fact that it is not routinely made available rather than because it is particularly useful, but it is clear that the CRU scientists did not cooperate fully with all requests for data and other information.

Theoretical/research paper



When science becomes too easy: Science popularization inclines laypeople to underrate their dependence on experts

Public Understanding of Science 2017, Vol. 26(8) 1003–1018 © The Author(s) 2016 Reprints and permissions: sagepub.co.uk/journalsPermissions.nav DOI: 10.1177/0963662516680311 journals.sagepub.com/home/pus

\$SAGE

Lisa Scharrer, Yvonne Rupieper, Marc Stadtler and Rainer Bromme

University of Muenster, Germany

#### **Abstract**

Science popularization fulfills the important task of making scientific knowledge understandable and accessible for the lay public. However, the simplification of information required to achieve this accessibility may lead to the risk of audiences relying overly strongly on their own epistemic capabilities when making judgments about scientific claims. Moreover, they may underestimate how the division of cognitive labor makes them dependent on experts. This article reports an empirical study demonstrating that this "easiness effect of science popularization" occurs when laypeople read authentic popularized science depictions. After reading popularized articles addressed to a lay audience, laypeople agreed more with the knowledge claims they contained and were more confident in their claim judgments than after reading articles addressed to expert audiences. Implications for communicating scientific knowledge to the general public are discussed.

Peer review

Incentives

Methodology

Data

Open | Peer review

Open | Incentives

Open | Methodology

Open | Data

## Thank you

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