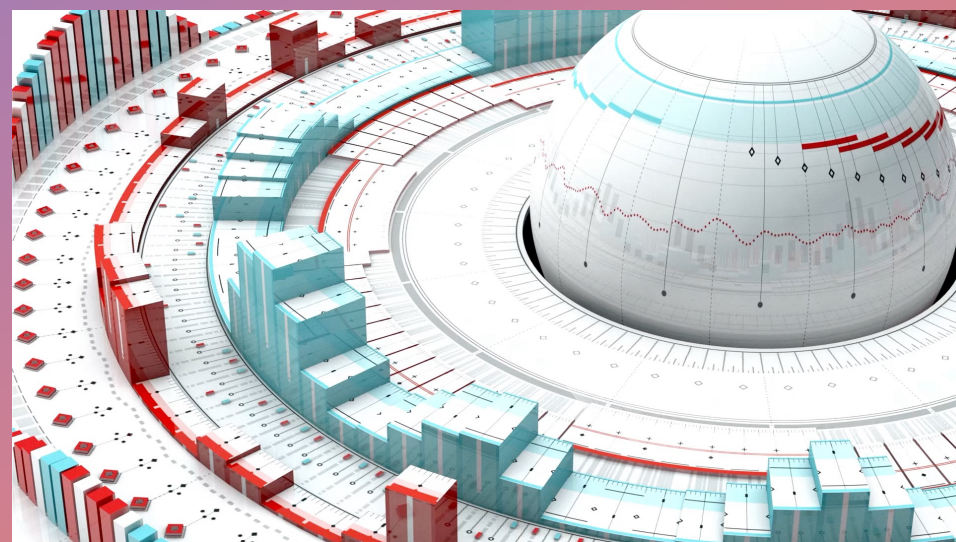


# Why are the “rich” in open science getting richer? Reflections on structural inequities and knowledge production

Leslie Chan  
Knowledge Equity Lab  
Department of Global Development Studies  
[@lesliekwchan](#) [@knowequitylab](#)



ON-MERRIT final event: Ensuring Equity in Open Science

March 20, 2022

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○

# Reflections

- How we are complicit in reproducing inequity in science and academia (some personal stories)
- The Equity Myth – broader examples
- Understanding Structural Power
- Other Worlds are Possible:
  - De-Enclosure
  - De-Commodification
  - De-Growth
  - De-Colonize



## U of T first in Canada, among top 10 public universities globally in Times Higher Education rankings

The University of Toronto has been ranked 18th in the world overall in the prestigious *Times Higher Education* 2021 World University Rankings.

Photo by Daria Perevezentsev

Posted on September 3, 2020

## U of T moves up one spot to 22nd globally in latest Shanghai university rankings



(photo by Daria Perevezentsev)

The University of Toronto has climbed one spot to 22<sup>nd</sup> in the prestigious Academic Ranking of World Universities, achieving its highest position globally since the ranking began in 2003.

August 19, 2021

“The University of Toronto is dedicated to fostering an academic community in which the learning and scholarship of every member may flourish, with vigilant protection for individual human rights, and a resolute commitment to the principles of equal opportunity, equity and justice.”

# Situating my biases

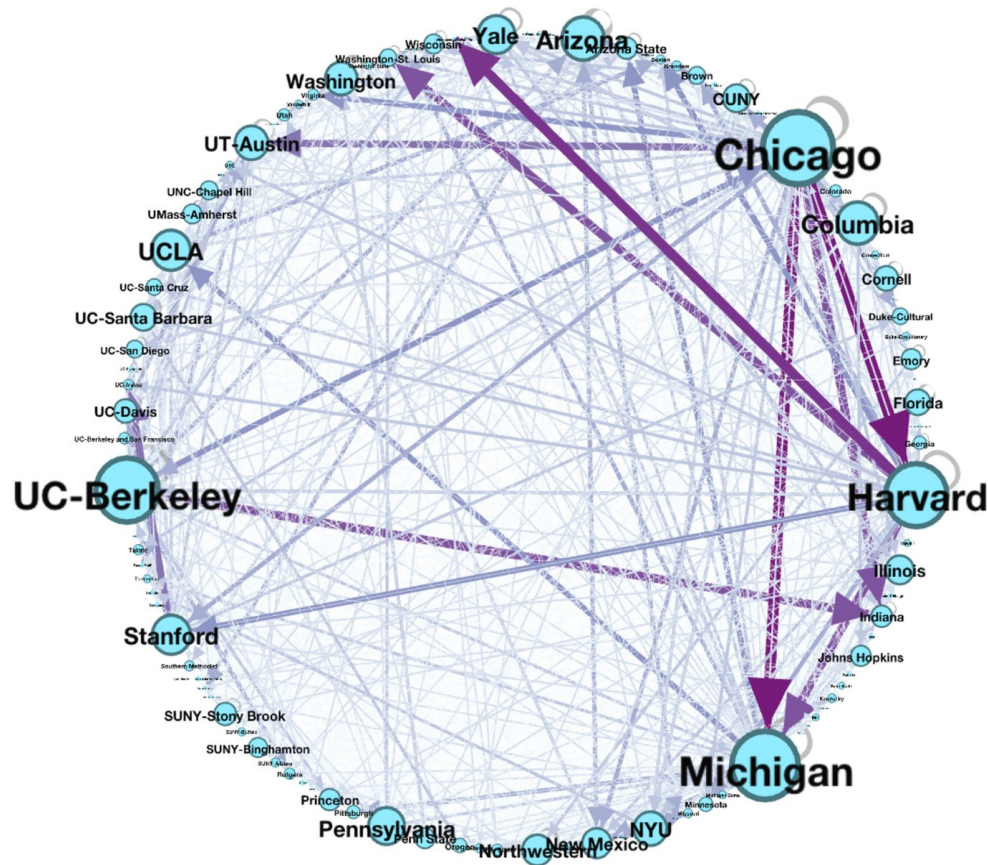
Matthew Effect =  
Old Boy Network,  
or more accurately  
Old White Men Club

Cumulative Advantage =  
White Privilege



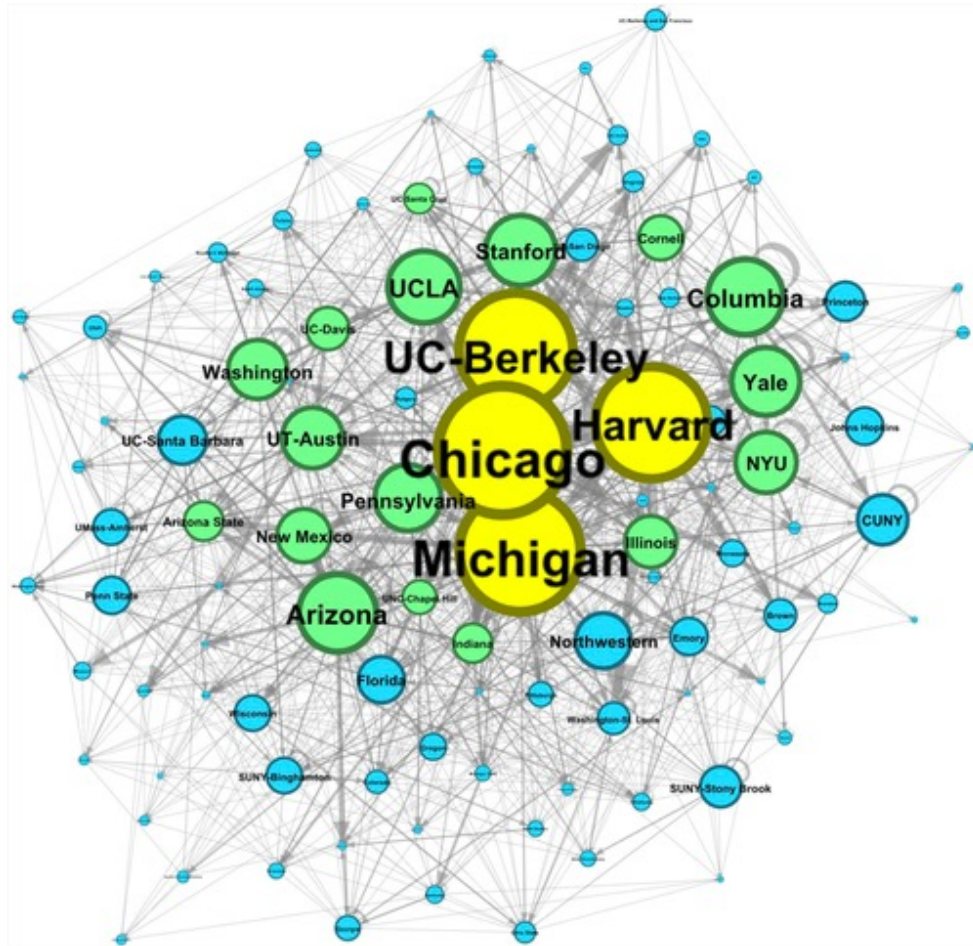


# The Social Network of US Academic Anthropology and Its Inequalities



Chord graph of the hiring network of PhD-granting anthropology programs in the United States (nodes sized by “out-degree” or the number of other programs in which faculty are placed in the network; placements by nonanthropology programs and those outside the United States were excluded).

**American Anthropologist, Volume: 121, Issue: 1, Pages: 14-29, First published: 26 December 2018, DOI: (10.1111/aman.13158)**



In US academic anthropology, a small cluster of programs is responsible for producing the majority of tenured and tenure-track faculty in PhD-granting programs, with a very select few dominating the network. From this analysis, **the most successful programs are generally housed within universities with large endowments and have faculty who hold prestigious awards and are widely cited by other scholars.** Such programs also typically produce a high number of PhDs annually and demand high GRE scores for entry. Last, they tend to draw from a very limited pool of departments when they recruit faculty.

Kozlowski, D., Larivière, V., Sugimoto, C. R., & Monroe-White, T. (2022). Intersectional inequalities in science. *Proceedings of the National Academy of Sciences*, 119(2). <https://doi.org/10.1073/pnas.2113067119>

### Significance

The US scientific workforce is not representative of the population. Barriers to entry and participation have been well-studied; however, few have examined the effect of these disparities on the advancement of science. Furthermore, most studies have looked at either race or gender, failing to account for the intersection of these variables. Our analysis utilizes millions of scientific papers to study the relationship between scientists and the science they produce. We find a strong relationship between the characteristics of scientists and their research topics, suggesting that diversity changes the scientific portfolio with consequences for career advancement for minoritized individuals. Science policies should consider this relationship to increase equitable participation in the scientific workforce and thereby improve the robustness of science.

“The even participation of White authors across topics shows that the relation between race and research topic operates primarily on minoritized authors. In other terms, ***there is a privilege of choice in scientific knowledge production***, wherein research on a particular topic is influenced by scientist’s race and gender.”



Nielsen, M. W., & Andersen, J. P. (2021). Global citation inequality is on the rise. *Proceedings of the National Academy of Sciences*, 118(7).

<https://doi.org/10.1073/pnas.2012208118>

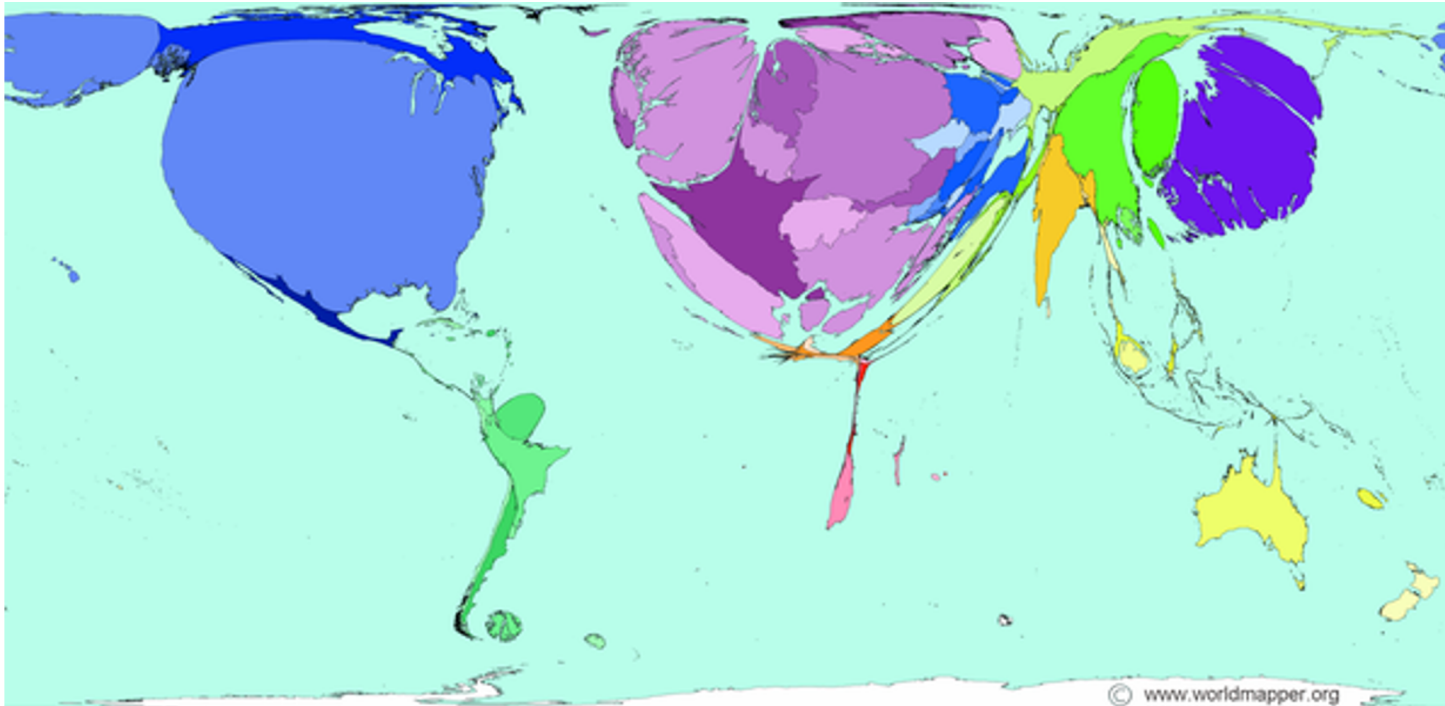
“While increasing collaboration and full-count publication rates go hand in hand for the top 1% most cited, ordinary scientists are engaging in more and larger collaborations over time, but publishing slightly less. Moreover, fractionalized publication rates are generally on the decline, but **the top 1% most cited have seen larger increases in coauthored papers and smaller relative decreases in fractional-count publication rates than scientists in the lower percentiles of the citation distribution.** Taken together, these trends have enabled the top 1% to extend its share of fractional- and full-count publications and citations. Further analysis shows **that top-cited scientists increasingly reside in high-ranking universities in western Europe and Australasia, while the United States has seen a slight decline in elite concentration.** Our findings align with recent evidence suggesting intensified international competition and widening author-level disparities in science.”

### Significance

By analyzing a global sample of 4 million authors and 26 million scientific papers, this study finds that the top 1% most-cited scientists have increased their cumulative citation shares from 14 to 21% between 2000 and 2015 and that the Gini coefficient for citation imbalance has risen from 0.65 to 0.70. The growing citation concentration should be understood in the context of diverging trends in publication and collaboration activities for the top 1% compared to the “ordinary scientist.” Our study raises intriguing questions about how rising inequalities will shape the evolution of science.



## Unequal contribution and participation in Knowledge Production



Chan L, Kirsop B, Arunachalam S (2011) Towards Open and Equitable Access to Research and Knowledge for Development. PLoS Med 8(3): e1001016. doi:10.1371/journal.pmed.1001016

<http://127.0.0.1:8081/plosmedicine/article?id=info:doi/10.1371/journal.pmed.1001016>



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## Budapest Open Access Initiative

From Wikipedia, the free encyclopedia

The **Budapest Open Access Initiative (BOAI)** is a public statement of principles relating to [open access](#) to the [research literature](#),<sup>[1]</sup> which was released to the public February 14, 2002.<sup>[2]</sup> It arose from a conference convened in [Budapest](#) by the [Open Society Institute](#) on December 1–2, 2001 to promote open access – at the time also known as *Free Online Scholarship*.<sup>[3][4]</sup> This small gathering of individuals is recognised as one of the major defining events of the [open access movement](#).<sup>[1]</sup> On the occasion of the 10th anniversary of the initiative, it was reaffirmed in 2012 and supplemented with a set of concrete recommendations for achieving "the new goal that within the er-



Participants at meeting in Budapest, December 1, 2001

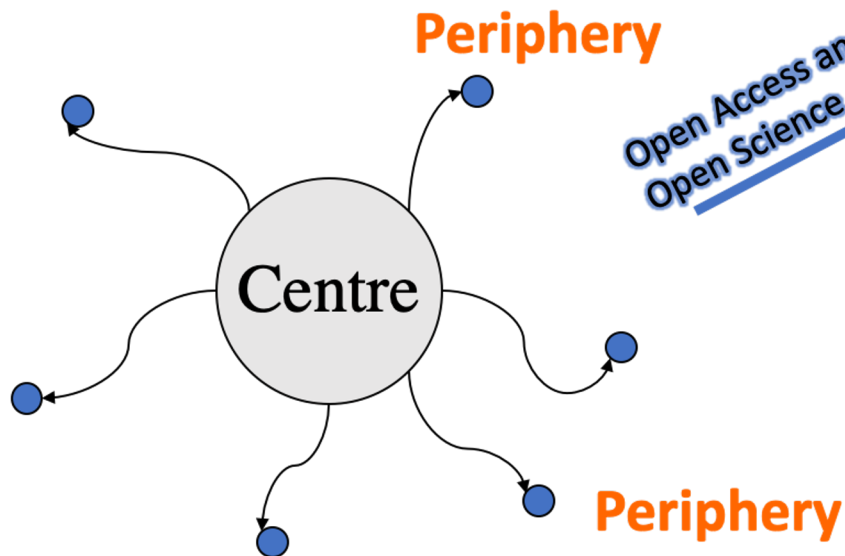


<https://www.budapestopenaccessinitiative.org/boai20/>

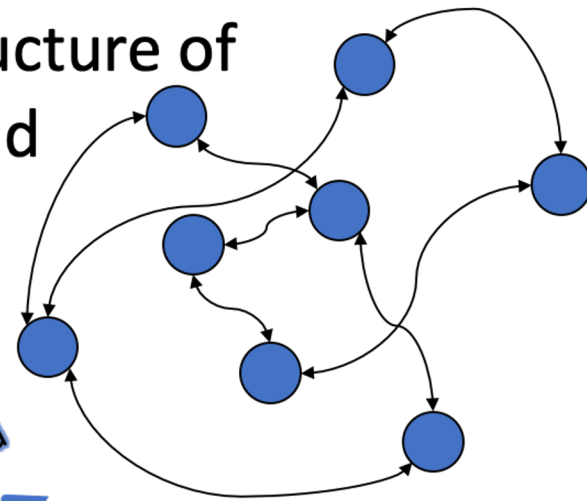


A logo celebrating the 10th anniversary of the Budapest Open Access Initiative in 2012, featuring the [Széchenyi Chain Bridge](#) in Budapest.

Could Open Access and Open Science change the current power structure of global scientific production and dissemination?



Open Access and Open Science



Could openness creates the potential for new spaces for collaboration and co-creation of knowledge?

# Early assumptions

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Network is flat

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Open Access is key

---

Participation is democratized and non-market driven

---

Knowledge as a public good

---

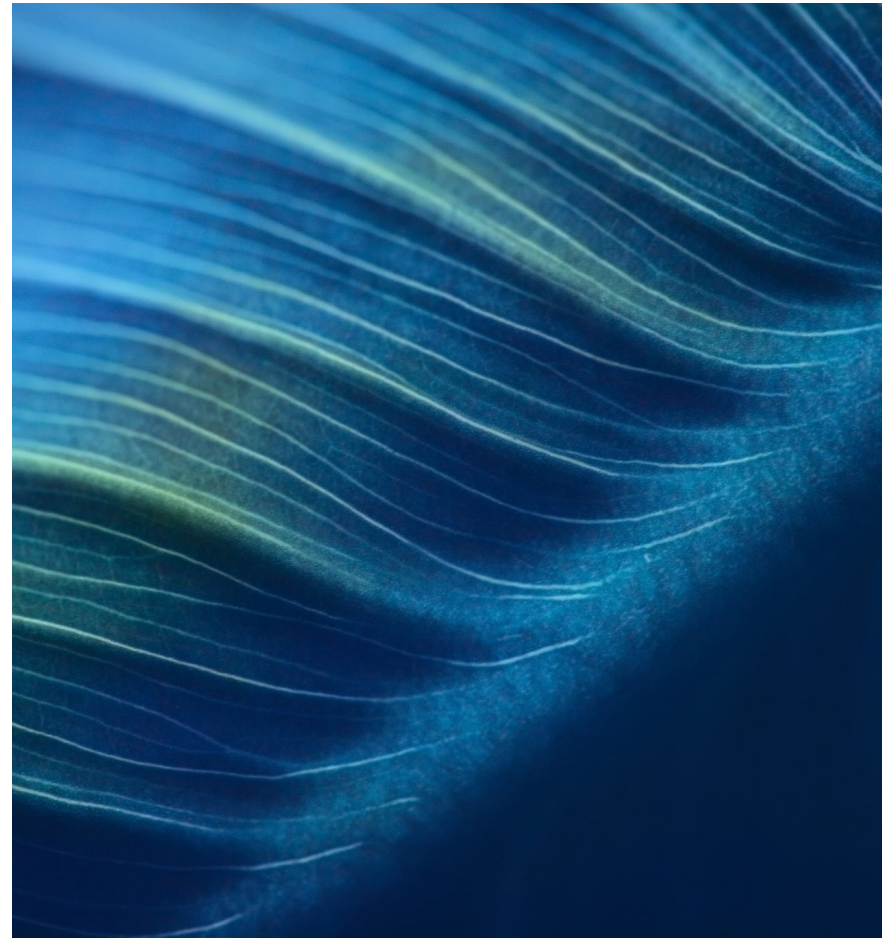
Scaling up is desirable and easy

---

N-S and S-S flow of knowledge

---

The “Rich” and the “Poor” in mutual exchange







**Bioline International** is a not-for-profit scholarly publishing cooperative committed to providing open access to quality research journals published in developing countries. BI's goal of reducing the South to North knowledge gap is crucial to a global understanding of health (tropical medicine, infectious disease and international development. By providing access to journals from Chile, China, Colombia, Egypt, Ghana, India, Kenya, Mexico, Nigeria, Pakistan, Peru, South Africa, Sri Lanka, Turkey, Uganda and Venezuela). BI helps to reduce the global knowledge divide by making research community world-wide.

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- ▢ Journals in the Bioline International
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**www.ajfand.net**

AJFAND represents a response to an urgent need for a forum that can adequately address Africa's recurrent problems of poverty, food and nutrition insecurity, non-performing economies, increasing disease threats and non-sustainable environmental degradation. These threats are associated with globalization that entails unfair trade at the international level, and failure by Africa to keep pace with new technology and biotechnology.

**THERE IS HOPE FOR AFRICA.** Despite the grim television pictures of starvation and human suffering, there is tremendous hope for a continent whose people are its greatest resource. Despite massive environmental degradation and socio-political crises of continually escalating dimensions, Africa remains one of the best natural continents in terms of natural resources. Africa is a continent of great hopes and fears, a continent of great people and a continent that can find its own way to progress.

This journal is meant to create awareness of the multiplicity of challenges facing Africa, the need to adopt poverty and distribution.

This journal strives to become the premier scholarly forum for sharing and debating information relevant and important to Africa. There is a lot of research and practical information on Africa, in Africa, and by Africans which hardly find their way to the international arena.

Let us tell Africa's story here. Let us share our scholarly works with the rest of the world. We can do it.

**Hon. Prof. Ruth Ochieng'**  
Editor-in-Chief



**What's new?**

- African Crop Science Journal, Vol. 28 (03)
- Rwanda Public Health Bulletin, Vol. 02 (01)
- International Journal of Reproductive BioMedicine, Vol. 18 (06)
- Zoological Research, Vol. 41 (03)



ur survey's response analysis book at

using Bioline International to put their research site in due course.

scientists and librarians. It is a collaborative initiative between Bioline Toronto (management and environmental information), Brazil (host computer and software development). The project is managed by Jnit at the University of Toronto Scarborough and by the support of sponsoring libraries and donors. For more details, please contact [biolineinternational@utoronto.ca](mailto:biolineinternational@utoronto.ca)

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full text  
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**needs your support!**





Dr. James Tumwine. Professor of Pediatrics and Child Health. Founder and Editor in Chief of African Health Sciences, Makerere University and Kabbalah University, Uganda

Health Equity and Knowledge Production: African Health Sciences

<https://knowledgeequitylab.ca/podcast/>

- +
- 
- 

# Lessons thus far

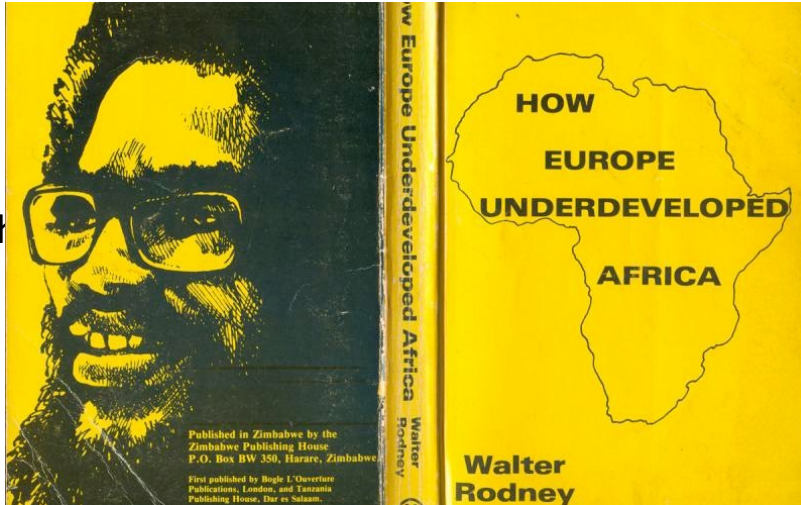
...

- Digital Networks replicate and reinforce existing hierarchies and the Concentration of Power
- Infrastructure is never neutral
- Governance is opaque and non-transparent
- “Code is Law”
- Access is not enough
- The need to understand structural and institutional inequities built on racial and colonial practices

- Development of “underdevelopment”

- India under colonial rule
- Africa under colonial rule

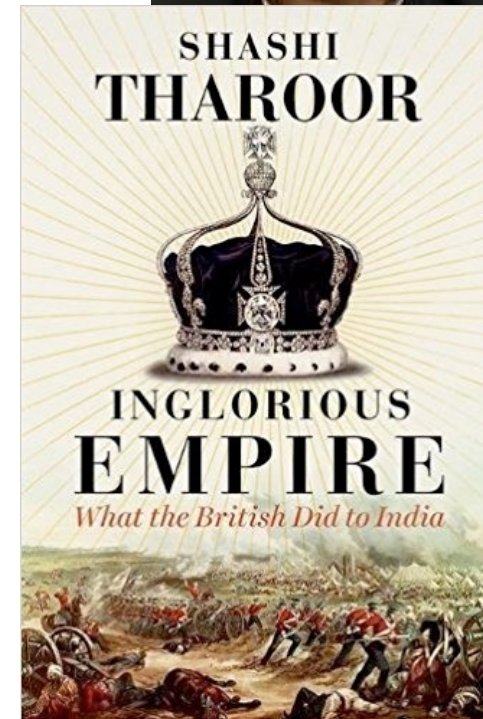
“common myth within capitalist thought that the individual through hard work can become a capitalist”



1972



“Britain came to one of the richest countries in the world and reduced it after 200 years of plunder to one of the poorest.”



2017





- 12 projects from Latin America, Middle East, Africa and Asia
- Critical approach to Open Science – question the idea of “open” as the goal
- Key output: [Open and Collaborative Science in Development Manifesto](#)



POSTED BY ANGELA OHLINÉ | ART, CHILDREN, CITIZEN SCIENCE, EDUCATION, ENVIRONMENT, KYRGYZSTAN, WATER  
 “THROUGH WATER”: PROMOTING AND COMMUNICATING OPEN & COLLABORATIVE RESEARCH WITH A PUBLIC EXHIBITION



POSTED BY ANGELA OHLINÉ | CATH TRAYNOR, COMMUNITY RESEARCH, INTELLECTUAL PROPERTY RIGHTS, NATURAL, JUSTICE, OCCIDENT  
 PROTECTING AND PROMOTING INDIGENOUS PEOPLES RIGHTS IN ACADEMIC RESEARCH PROCESSES: A GUIDE FOR COMMUNITIES IN SOUTH AFRICA



POSTED BY ANGELA OHLINÉ | ACCESIO, ARGENTINA, CITIZEN SCIENCE, ESPANOL, STE  
 ALL THAT GLITTERS IS NOT GOLD: RETHINKING OPENNESS FROM THE AFFECTED POPULATION OF A CYANIDE SPILL IN JÁCHAL, ARGENTINA

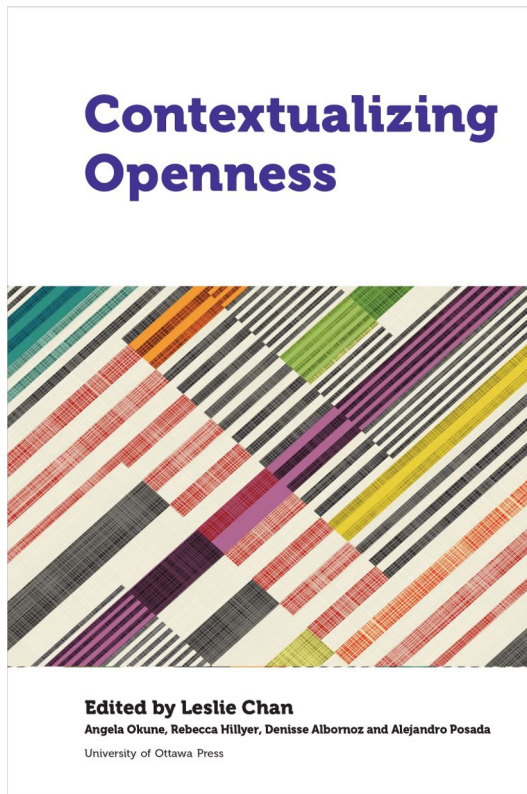


POSTED BY ANNE MARIE HENRI | CITIZEN SCIENCE, LEBANON, SDG, SUSTAINABLE DEVELOPMENT, WATER QUALITY  
 THE SUSTAINABLE DEVELOPMENT GOALS (SDGS): A CALL FOR ACTION RESEARCH AT THE NATURE CONSERVATION CENTER AT AUB (AUB-NCC)



POSTED BY ANNE MARIE HENRI  
 LESSONS FROM COLOMBIA: TYING OPEN SCIENCE WITH LOCAL DEVELOPMENT NEEDS

# Intersecting dimensions of Openness



Openness to  
Publications and Data

Openness to Society

Openness to Excluded  
Knowledges

<https://www.idrc.ca/en/book/contextualizing-openness-situating-open-science>



<http://doi.org/10.5281/zenodo.3946773>

# Situated Openness

Open  $\neq$  Visible

“openness” is not a binary condition, but is highly situational, contingent, and dependent on the positionality, privilege and contexts of the knowledge makers

(See the works of feminist philosophers of knowledge Donna Haraway, Sandra Harding, Patricia Hill Collins, Sarah Ahmed and **more**)



# Inclusive Research Infrastructures

“tools, platforms, networks and other socio-technical mechanisms that deliberately allow for multiple forms of participation amongst a diverse set of actors, and which purposefully acknowledge and seek to redress inequities in a given context”

(Okune et al. 2018)

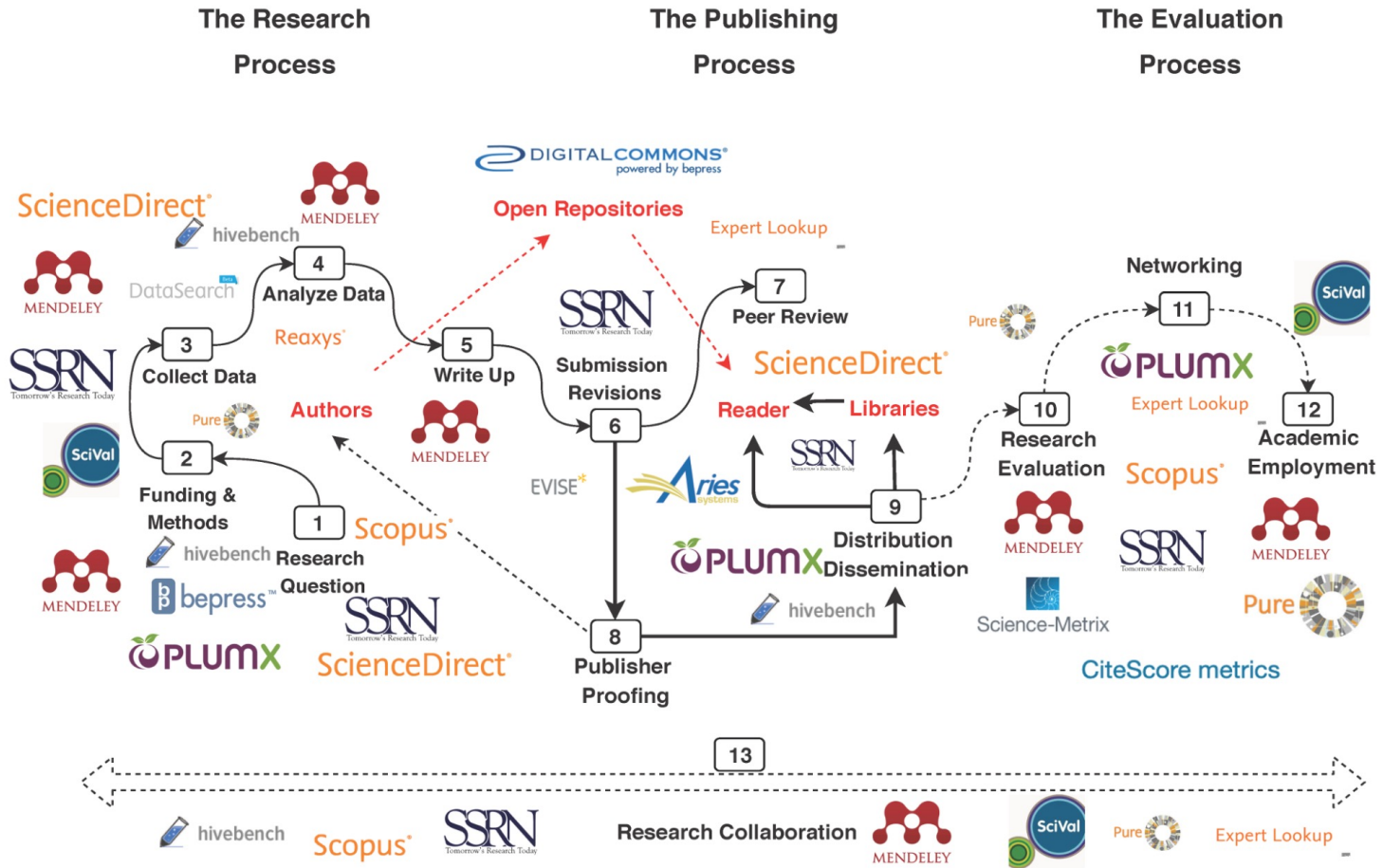


For full paper:

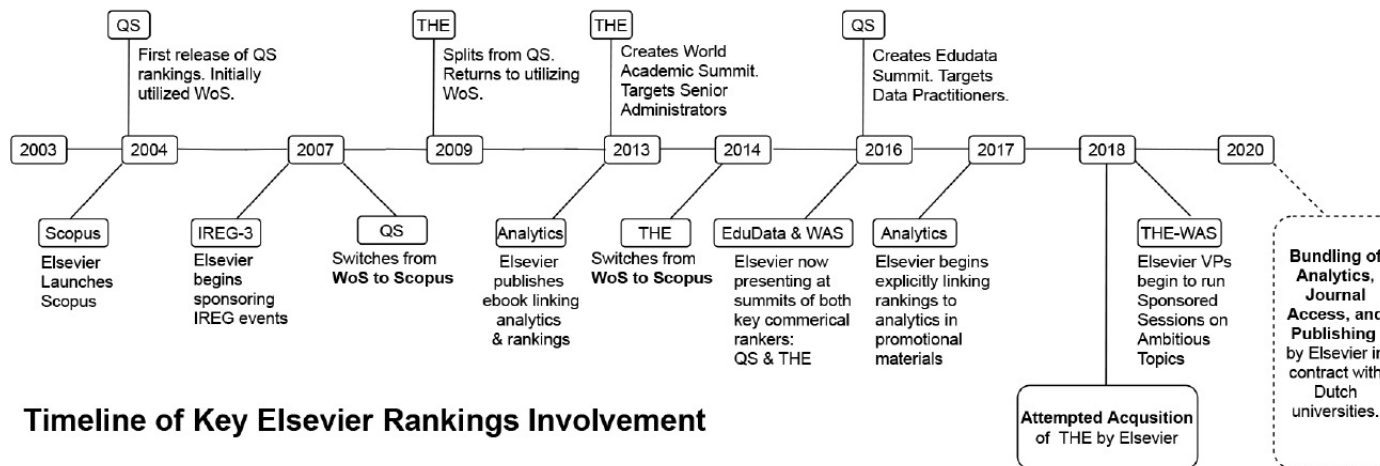
<https://hal.archives-ouvertes.fr/hal-01816808>



# An Enclosed System of Knowledge Production



<https://books.openedition.org/oep/9068>



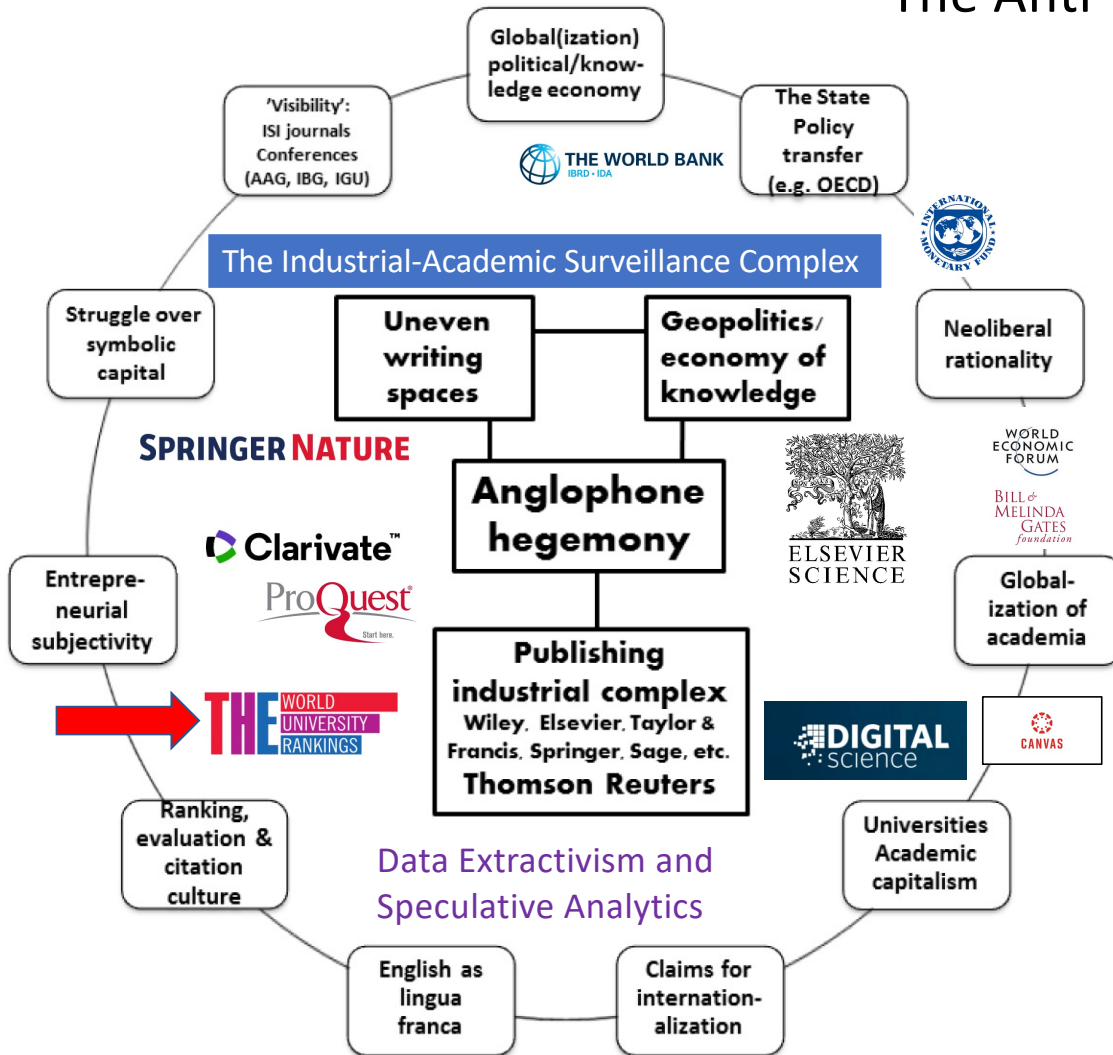
**Timeline of Key Elsevier Rankings Involvement**

*Figure 31.1 Timeline of key Elsevier rankings involvement*

Chen, G., & Chan, L. (2021). *University Rankings and Governance by Metrics and Algorithms*. Zenodo. <https://doi.org/10.5281/zenodo.4730593>

**Geopolitics/  
economy of  
knowledge**

# The Anti-Equity Global Machinery



Late-Stage Racial Capitalism and Technocratic System of Enclosure  
 Sites of capital accumulation and labour exploitation

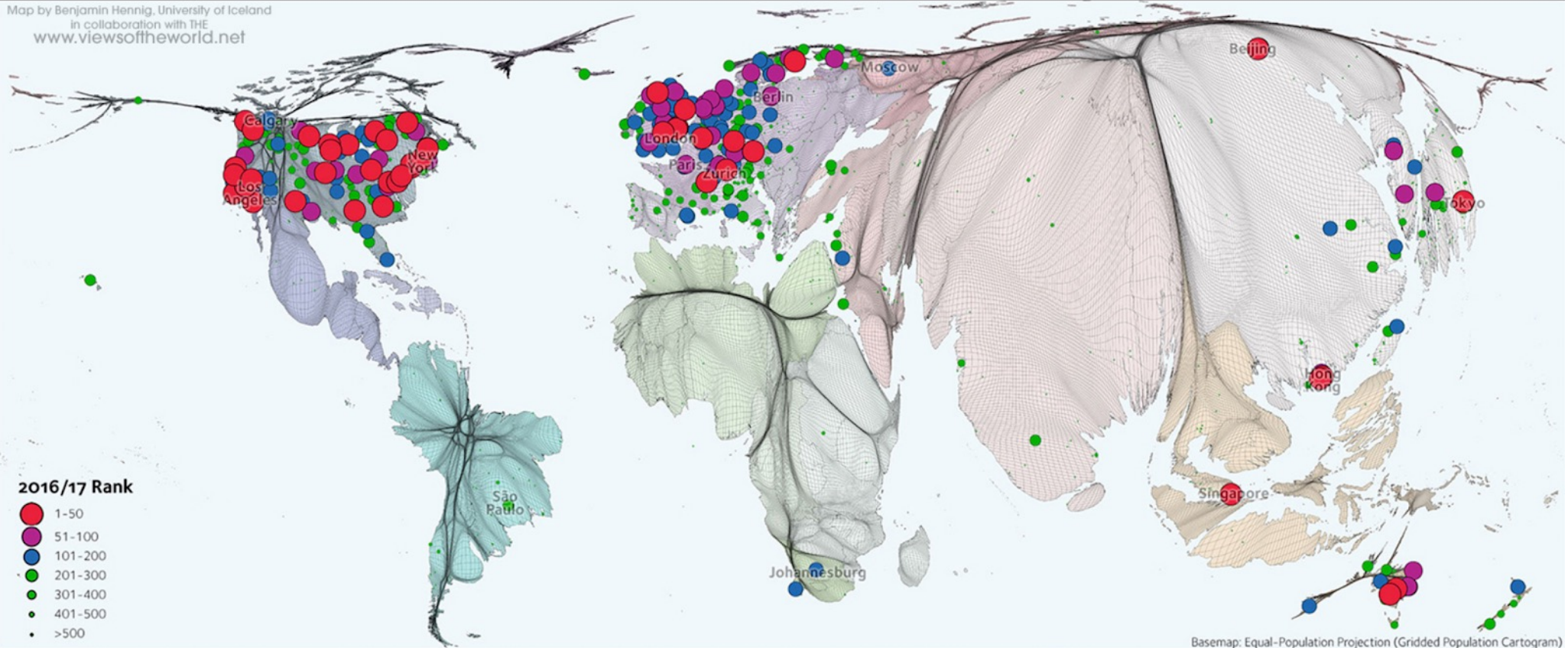
"Uberfication" of Academic Labour & Algorithmic Governance

**Wheel of power: a conceptual framework for understanding the Anglophone hegemony**  
 From Paasi, A. (2015). Academic Capitalism and the Geopolitics of Knowledge. In *The Wiley Blackwell Companion to Political Geography* (pp. 507–523). John Wiley & Sons, Ltd.  
<https://doi.org/10.1002/9781118725771.ch37>



# THE WORLD UNIVERSITY RANKINGS IN A WORLD ADJUSTED FOR POPULATION SIZE

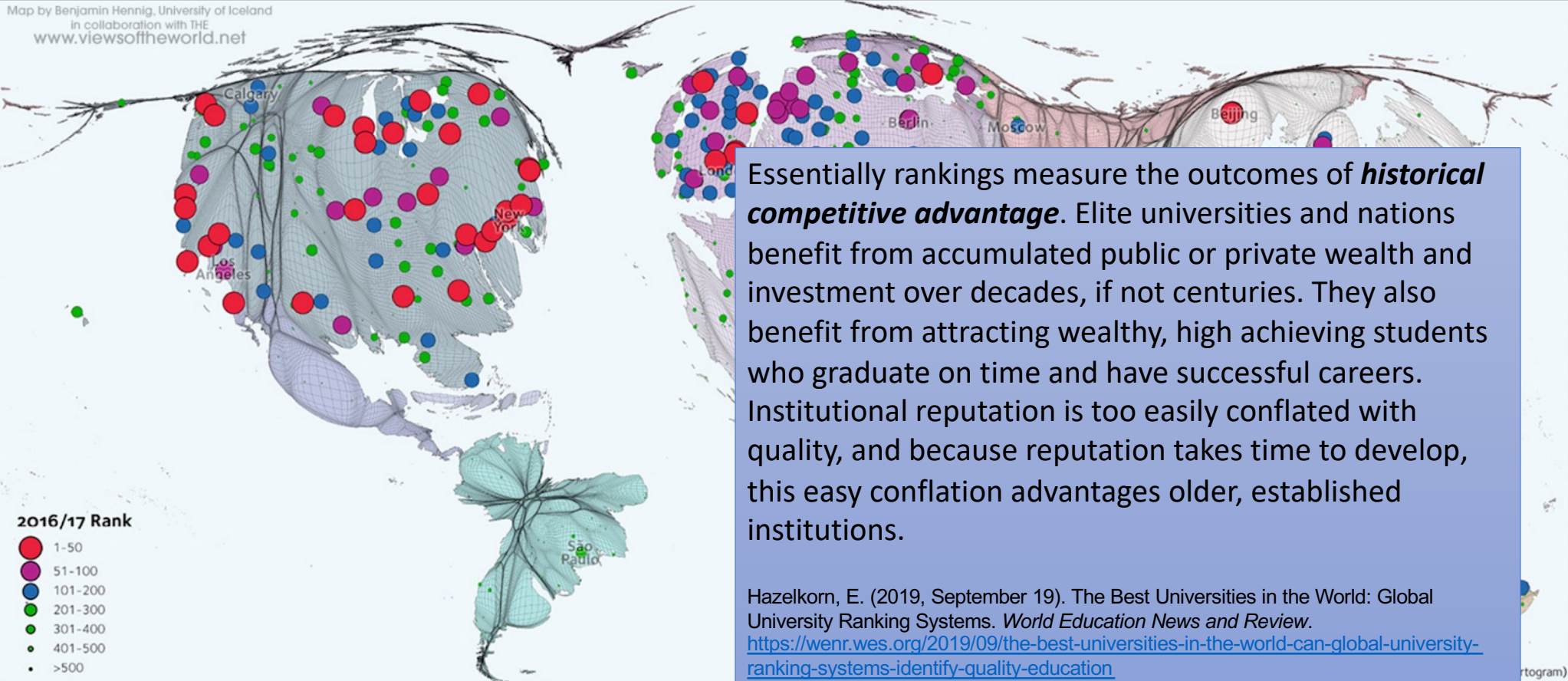
Map by Benjamin Hennig, University of Iceland  
in collaboration with THE  
[www.viewsoftheworld.net](http://www.viewsoftheworld.net)



[http://www.viewsoftheworld.net/wp-content/uploads/2017/07/THE\\_WorldUniversityRankings201617\\_popmap.jpg](http://www.viewsoftheworld.net/wp-content/uploads/2017/07/THE_WorldUniversityRankings201617_popmap.jpg)

# THE WORLD UNIVERSITY RANKINGS IN A WORLD ADJUSTED FOR NATIONAL WEALTH

Map by Benjamin Hennig, University of Iceland  
in collaboration with THE  
[www.viewsoftheworld.net](http://www.viewsoftheworld.net)



Essentially rankings measure the outcomes of *historical competitive advantage*. Elite universities and nations benefit from accumulated public or private wealth and investment over decades, if not centuries. They also benefit from attracting wealthy, high achieving students who graduate on time and have successful careers. Institutional reputation is too easily conflated with quality, and because reputation takes time to develop, this easy conflation advantages older, established institutions.

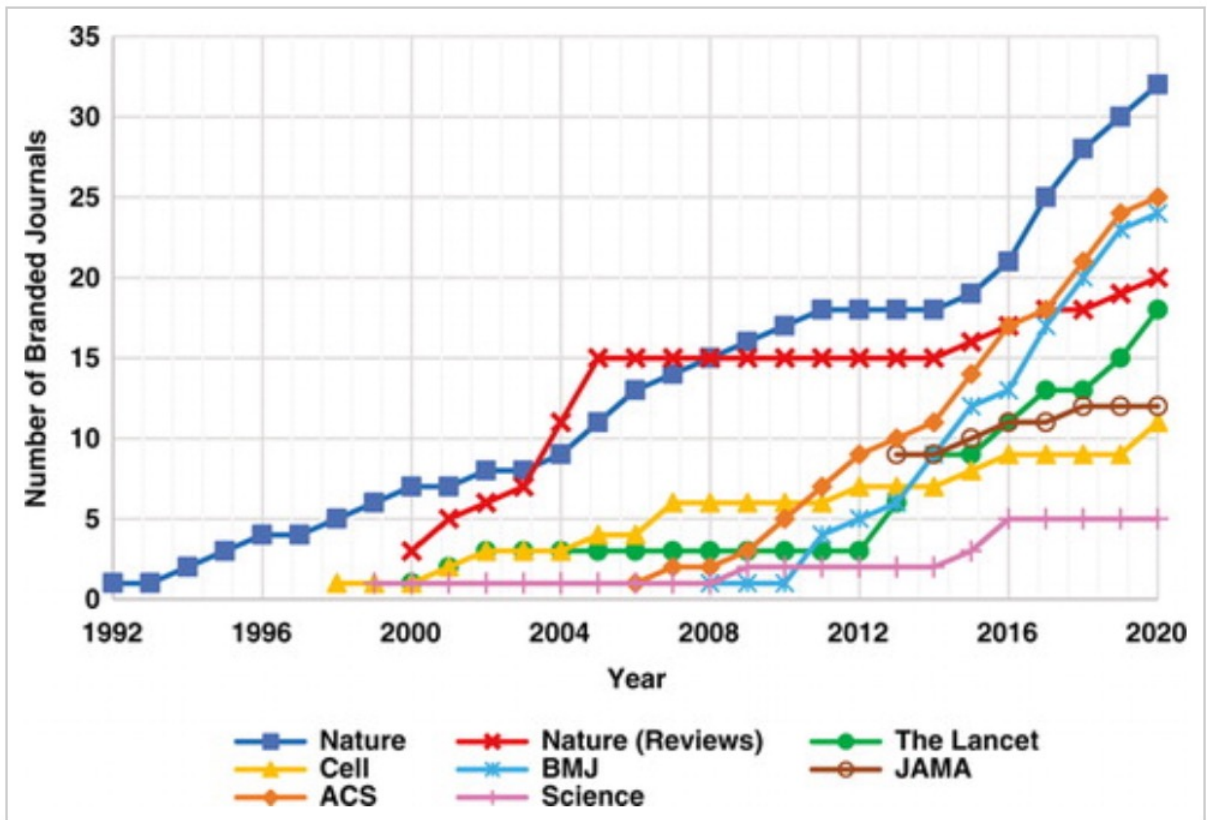
Hazelkorn, E. (2019, September 19). The Best Universities in the World: Global University Ranking Systems. *World Education News and Review*.  
<https://wenr.wes.org/2019/09/the-best-universities-in-the-world-can-global-university-ranking-systems-identify-quality-education>

[http://www.viewsoftheworld.net/wp-content/uploads/2017/07/THE\\_WorldUniversit](http://www.viewsoftheworld.net/wp-content/uploads/2017/07/THE_WorldUniversit)





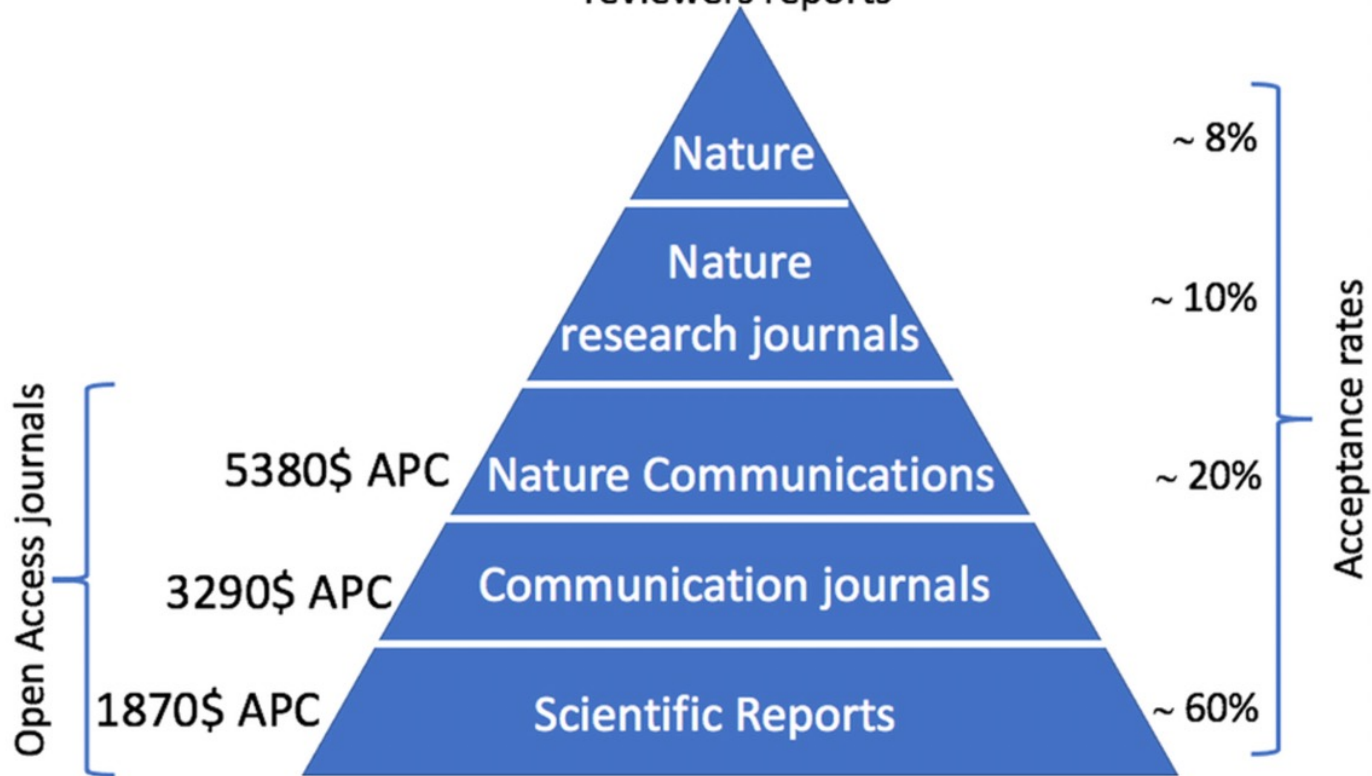
Khelfaoui, M., & Gingras, Y. (2020). Branding Spin-Off Scholarly Journals: Transmuting Symbolic Capital into Economic Capital. *Journal of Scholarly Publishing*, 52(1), 1–19.  
<https://doi.org/10.3138/jsp.52.1.01>



**Figure 1.** Trend in the number of branded journals derived from a prestigious parent.

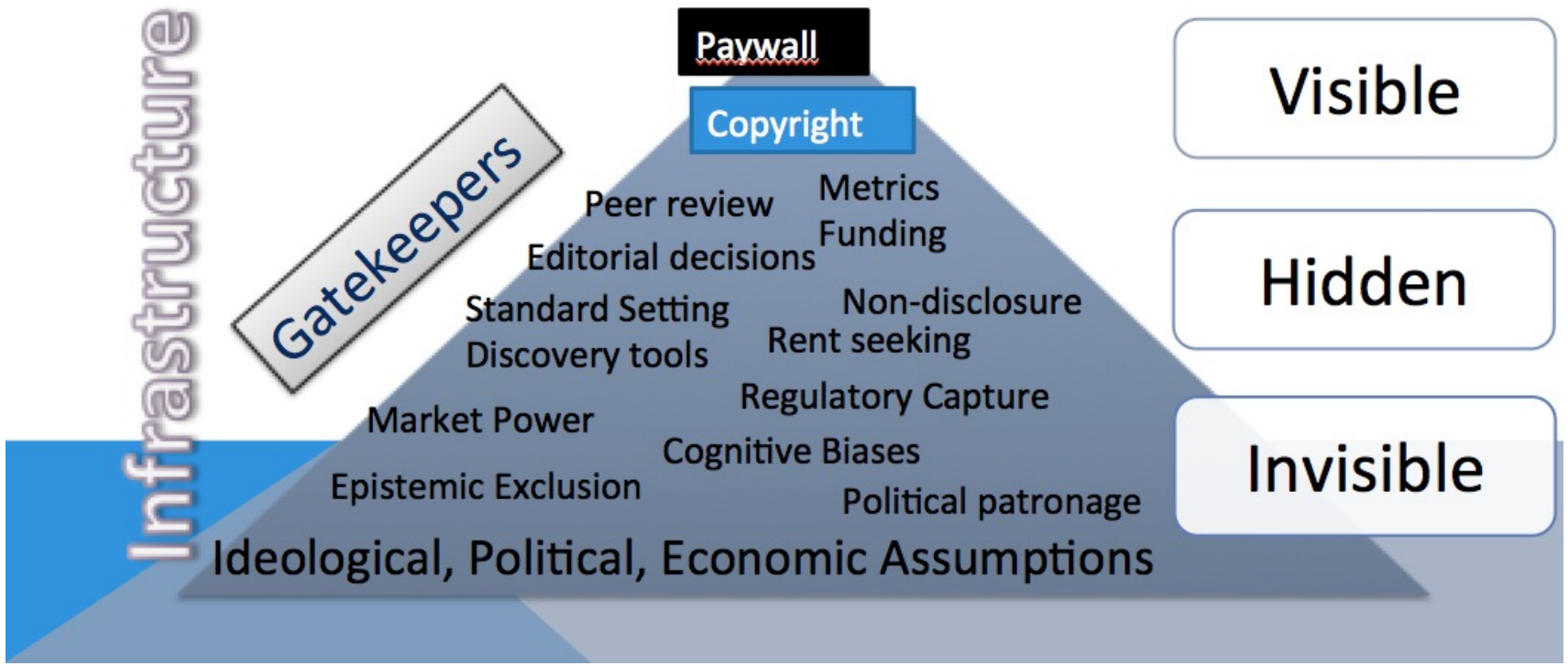


If a manuscript is not accepted, transfer to the lower levels with reviewers reports



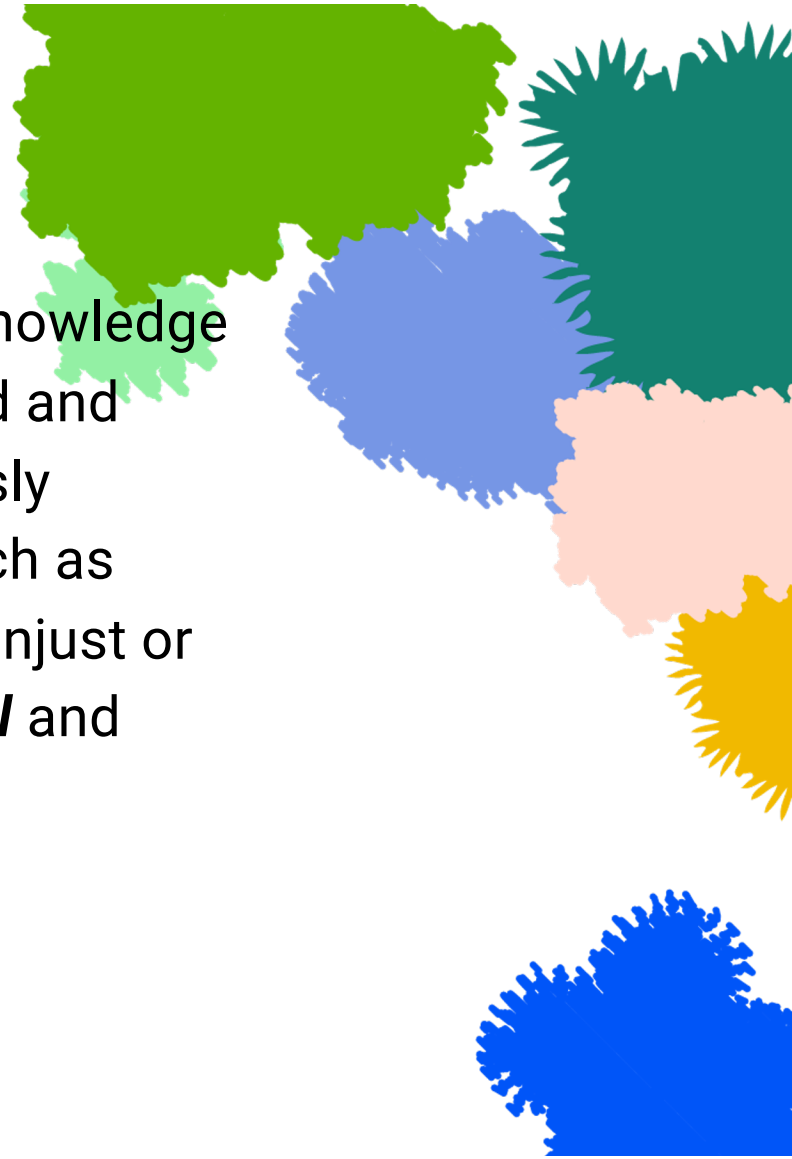
Khelfaoui, M., & Gingras, Y. (2021.). Expanding Nature: Product line and brand extensions of a scientific journal. *Learned Publishing*, n/a(n/a).  
<https://doi.org/10.1002/leap.1422>

# SYSTEM OF POWER IN KNOWLEDGE PRODUCTION



“We need to acknowledge that the dominant knowledge practices and institutions have been structured and implemented in such a way as to simultaneously privilege certain epistemic situated values (such as universality, objectivity and truth) while being unjust or dismissive with regard to other, more **relational** and complex modes of knowledge”

<http://doi.org/10.5281/zenodo.3946773>



# The Right to Research

“right to the tools through which any citizen can systematically increase that stock of knowledge which they consider most vital to their survival as human beings and to their claims as citizens.”

Arjun Appadurai (2006) The right to research, *Globalisation, Societies and Education*, 4:2, 167-177, DOI: [10.1080/14767720600750696](https://doi.org/10.1080/14767720600750696)



## Two years of Reckonings?

Limitation of a monolithic view of science as universal, objective and based on causal understandings

Need for structural approaches, analyzing deeply embedded systemic and racial inequities

COVID-19: The need for a Social Vaccine (Baum and Friel 2020)

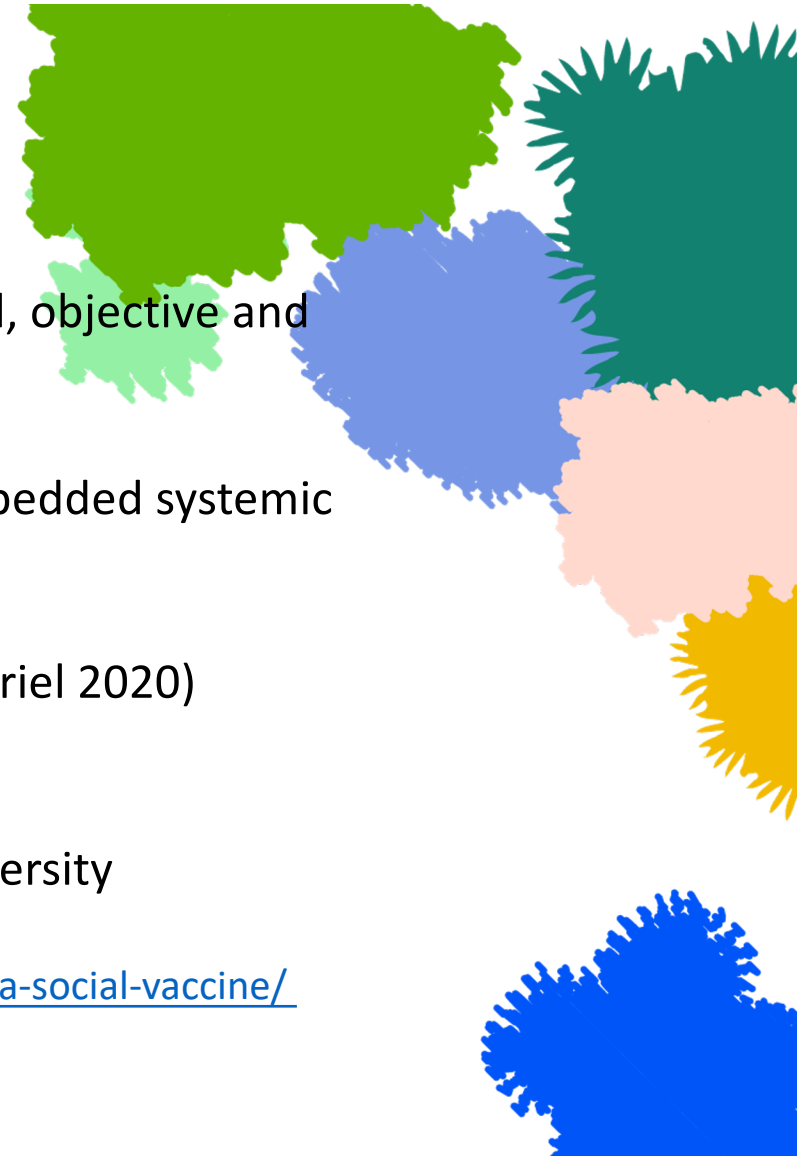
A life with security

Opportunities that are fair

A planet that is habitable and supports biodiversity

Governance that is just

<https://insightplus.mja.com.au/2020/36/covid-19-the-need-for-a-social-vaccine/>

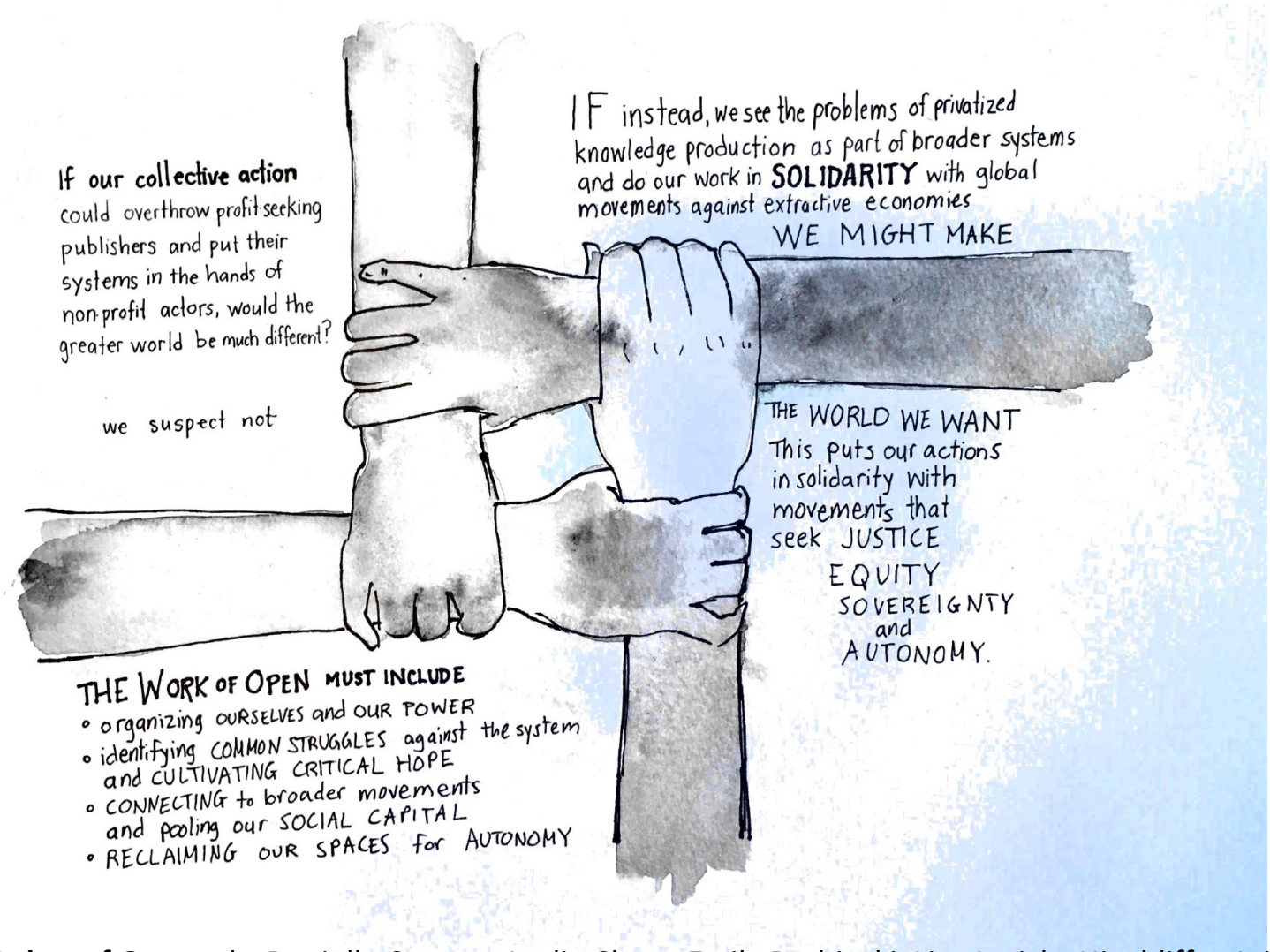


## “Social Vaccine” against Knowledge Enclosure?

- Community designed and governed infrastructure built on a Pluriversal view of science and knowledge
- Expanding the rights of research
- Transition from an extractive to generative models of knowledge production (care economy)

# Other Worlds Are Possible





If our collective action could overthrow profit-seeking publishers and put their systems in the hands of non-profit actors, would the greater world be much different?

we suspect not

If instead, we see the problems of privatized knowledge production as part of broader systems and do our work in **SOLIDARITY** with global movements against extractive economies  
**WE MIGHT MAKE**

**THE WORLD WE WANT**  
This puts our actions in solidarity with movements that seek **JUSTICE**  
**EQUITY**  
**SOVEREIGNTY**  
and  
**AUTONOMY.**

- THE WORK OF OPEN MUST INCLUDE**
- organizing OURSELVES and OUR POWER
  - identifying **COMMON STRUGGLES** against the system and **CULTIVATING CRITICAL HOPE**
  - **CONNECTING** to broader movements and pooling our **SOCIAL CAPITAL**
  - **RECLAIMING** our SPACES for **AUTONOMY**

**The Labor of Open** by Danielle Cooper, Leslie Chan, Emily Drabinski, Lisa Janicke Hinchliffe, Jojo Karlin, Ela Przybylo (2019) <https://cuny.manifoldapp.org/projects/labor-of-open>



De-Colonize

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  - **RECLAIMING** OUR SPACES for **AUTONOMY**

De-Enclosure

De-Commodification

De-Growth

# WE ENVISION



a publishing landscape that emerges from antiracist, feminist, and queer practices

a world of flourishing independent and scholar-led knowledge projects

EQUITABLE open access with an infrastructure built by and for knowledge-makers that challenges colonial legacies of knowledge as property

Knowledge production that refuses to be disciplined

approaches that focus on process over product and relationships over algorithms

Communities claim and control how they wish to MAKE and SHARE their KNOWLEDGE.

**The Labor of Open** by Danielle Cooper, Leslie Chan, Emily Drabinski, Lisa Janicke Hinchliffe, Jojo Karlin, Ela Przybylo (2019)

<https://cuny.manifoldapp.org/projects/labor-of-open>

