

# Complementing the H-Index with a OS-Index. Incentivising the Open Science Uptake Among Scientists by Highlighting Their Open Science Effort.

Keynote for the Webinar  
**FOCUS ON OPEN SCIENCE**  
CHAPTER XXXIII: ROME  
SAPIENZA//UCL  
8-7-2021

Prof. dr. JC Burgelman  
Faculty of Social Science and Solvay Business School  
Free University of Brussels

Editor in chief Frontiers Policy Lab



VRIJE  
UNIVERSITEIT  
BRUSSEL

# Key messages

- Most experts agree that a very important factor to accelerate the uptake of open science is to establish a system of reward and incentives for it.
- In fact, the Achilles heel of open science is the lack of recognition for such work at the researcher's level.

Why would I do an effort to publish in OA, if I am not rewarded for it? Why would I publish my data FAIR if in the end only the H factor is being looked at to evaluate what I do as a researcher.

- If we do accept that measuring performance is a sine qua non for an as objective as possible assesment of a researchers effort, than the solution is simple: **create an OS index**

# 0. Intro: why a new indicator is needed.

- All science will become data driven & open.
- corona demonstrated that open science is becoming the modus operandi etc. And that data sharing was the norm.
- Except for the publications most of this will never make it into the existing key indicator for scientific work: the IF.
- Widespread consensus that the JIF is not the only criterium to measure the relevance of science output and that the H index is not the only criterium to measure the impact of a scientist
- Since DORA was launched criticising the present measurement system became mainstream

(some random examples)

- Dutch recent policy – Strategy Evaluation Protocol 2021–2027. VSNU KNAW NWO
- Utrecht 2021 policy ([https://www.nature.com/articles/d41586-021-01759-5?utm\\_source=Nature+Briefing&utm\\_campaign=6f7939b00c-briefing-dy-20210628&utm\\_medium=email&utm\\_term=0\\_c9dfd39373-6f7939b00c-44923949](https://www.nature.com/articles/d41586-021-01759-5?utm_source=Nature+Briefing&utm_campaign=6f7939b00c-briefing-dy-20210628&utm_medium=email&utm_term=0_c9dfd39373-6f7939b00c-44923949))
- UCL's new rewards policy
- CAESAR next generation metrics white paper june 2020. [https://www.vsnu.nl/en\\_GB/news-items.html/nieuwsbericht/572-ruim-baan-voor-alle-aspecten-van-kwaliteit#.Xm\\_7KWckHyo.twitter](https://www.vsnu.nl/en_GB/news-items.html/nieuwsbericht/572-ruim-baan-voor-alle-aspecten-van-kwaliteit#.Xm_7KWckHyo.twitter)
- NAS' work on aligning incentives 2020 - (CAS working on it too)
- even the inventor of the H index listed its shortcomings and perverse effects <https://www.natureindex.com/news-blog/whats-wrong-with-the-h-index-according-to-its-inventor>
- Increasingly also Funders ask for Open Science outputs, but the questions remains: how are they going to evaluate it?)
- see Heurope 2021 Heurope kicks off with significant OS requests - check p 38 [https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/guidance/programme-guide\\_horizon\\_en.pdf](https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/guidance/programme-guide_horizon_en.pdf)

# 1. Problem: we (only) know what we dont want

- Most contributions to the discussion only list the problems.
- The few attempts made to come up with a new approach, never came up with a concrete proposal which can be used by policy makers in universities and funding.

DG RTD report 2019 Indicator Frameworks for Fostering Open Knowledge Practices in Science and Scholarship (Paul Wouters (chair), Ismael Ràfols, Alis Oancea, Shina Caroline Lynn Kamerlin, J. Britt Holbrook and Merle Jacob)

a prefect report that lists all the problems wit the present situation and lists all the parameters that are important to measure impact, but doesnt offer a pragmatic alternative for the present unifactorial approach.

OSPP report 2020 Progress on Open Science: Towards a Shared Research Knowledge System

Wellcome's new policy : no real operational guidelines <https://sfdora.org/resource/wellcome/>

2021 ERAC 'Triangle Task Force' Guideline Paper on 'Research evaluation in a context of Open Science and gender equality'

2021 Utrechts new policy

- In sum: all proposals to get rid of the H and JIF tyranny and reward OS practice better, fail on 2 points

## 1. No mention of what should replace it

## 2. And if mentioned - lacking operationability

- Plus: there seems to be a kind of Stockholm syndrome of the H index and the JIF

## 2. Is an alternative//OS index to complement for the H-Index so difficult to make?

- Yes - because the debate gets blurred a lot
  - quantitative versus qualitative factors
  - output (productivity) vs behavioral factors (e.g. cross disciplinarity)
  - macro level (university) versus micro (researcher)
- No - if we make upfront clear this is only a proposal that addresses 1 aspect (open science activity) at the researcher level (can be aggregated at team/faculty/university level)

### 3. What should/could be in such an OS index?

Upfront: we are only looking at output factors at the researcher level (can be aggregated)

#### 1. Open Publishing of research:

- Product: OA articles//books//reports:
- Modus to be counted: gold, green, diamond, preprint (numbers)

#### 2. Open publishing of FAIR data:

- Products: datasets//algorithms//visualisations//software:
- Modus to be counted: number of downloads, reuse, citation

#### 3. Open discussion of research:

- Product: peer reviews//discussions in Mendeley type of fora//blogs
- Modus to be counted: numbers, reuse, citations

#### 4. Open project evaluation:

- Products: research proposals
- Modus to be counted: downloads, citations

More?

## 4. Does this square the circle?

NO

- Its “only” an OS index
- Science is dynamic

YES

- If part of a dashboard approach to science production and impact, combining H index, OS index, Societal Impact index, etc \*
- Such a dashboard approach allows for differential uses.

Who should take the initiative?

- Given that change is in the air, lets not wait until someone else does it (like the Shangai index)
- **Ideally universities and funders - via their branch associations - in Europe should join forces and take this forward. With the help of publishers.**

Thank You

“Sapere Aude - possibilismus est”  
Be courageous – it is possible

[Jean-Claude.Burgelman@vub.be](mailto:Jean-Claude.Burgelman@vub.be)