



**Bibliographic  
mix**

V. Batagelj

Research  
evaluation

Publish or  
perish

Goodhart's  
law

Leiden  
Manifesto

The Hong  
Kong  
Principles

DORA

CRedit

DOI

References

# Bibliographic mix

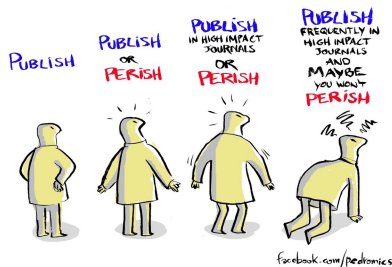
## Goodhart, Leiden, ORA, CRediT

**Vladimir Batagelj**  
IMFM, UP IAM

**1348. sredin seminar**  
Ljubljana, April 10, 2024

- 1 Research evaluation
- 2 Publish or perish
- 3 Goodhart's law
- 4 Leiden Manifesto
- 5 The Hong Kong Principles
- 6 DORA
- 7 CRediT
- 8 DOI

## THE EVOLUTION OF ACADEMIA



Vladimir Batagelj: [vladimir.batagelj@fmf.uni-lj.si](mailto:vladimir.batagelj@fmf.uni-lj.si)

Current version of slides (April 10, 2024 at 17:38): [slides PDF](#)

<https://github.com/bavla/biblio>

## Research evaluation

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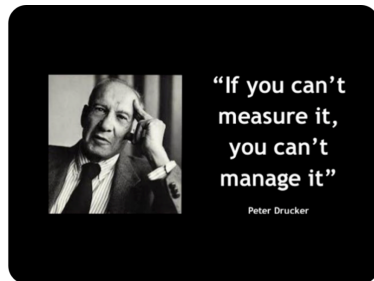
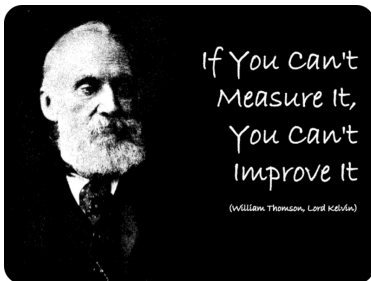
## The Hong Kong Principles

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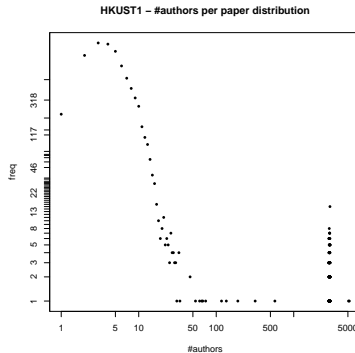
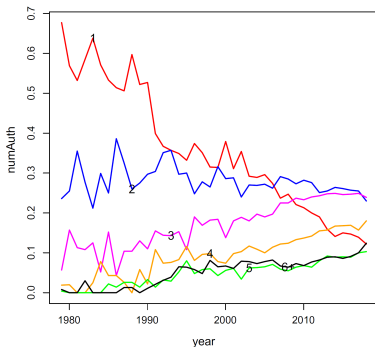
DOI

## References



- 1 Number of works of an author
- 2 Number of citations to a work
- 3 Journal impact factor WP
- 4 Hirsch index WP

Elsevier; Scopus





# Publish or perish

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Publish or Perish: How to Survive in Academia

Wikipedia; book; ch 01; undark; guardian; blog

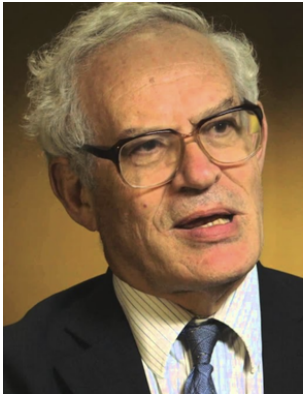
What does "Publish or perish" really mean?;

Google Scholar / Publish or perish

Harzing; video Demo

video Publication strategies: Publish or Perish

Consequences



## Goodhart's Law

*When a measure  
becomes a target,  
it ceases to be a  
good measure.*

[1]

# Goodhart's law

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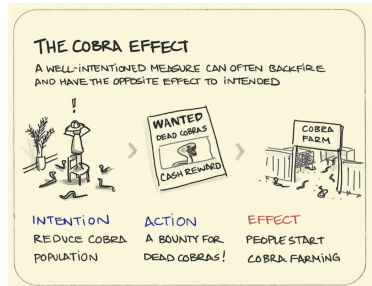
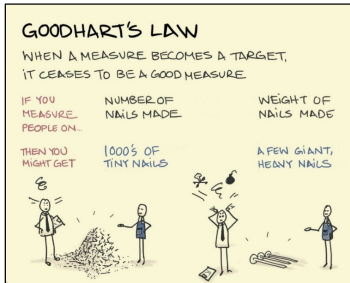
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# Goodhart's law

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Politicians are undertaking popular measures to win votes rather than solving real problems.

Google.

University rankings.

National sport teams.

Goodhart's Law Explained

video What is Goodhart's Law? And Why does it Matter?



# Indicators

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Hammarfelt, B, Rushforth, AD, (2017) **Indicators as judgment devices: An empirical study of citizen bibliometrics in research evaluation.**

A researcher's number of publications has been a fundamental merit in the competition for academic positions since the late 18th century. Today, the simple counting of publications has been supplemented with a whole range of bibliometric indicators, which supposedly not only measures the volume of research but also its impact. In this study, we investigate how bibliometrics are used for evaluating the impact and quality of publications in two specific settings: biomedicine and economics. Our study exposes the various metrics used in external evaluations of candidates for academic positions at Swedish universities. Moreover, we show how different bibliometric indicators, both explicitly and implicitly, are employed to assess and rank candidates. Our findings contribute to a further understanding of bibliometric indicators as judgment devices' that are employed in evaluating individuals and their published works within specific fields.

[2]



# Leiden Manifesto for Research Metrics

Ten principles (2015)

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- 1 Quantitative evaluation should support qualitative, expert assessment.
- 2 Measure performance against the research missions of the institution, group or researcher.
- 3 Protect excellence in locally relevant research.
- 4 Keep data collection and analytical processes open, transparent and simple.
- 5 Allow those evaluated to verify data and analysis.
- 6 Account for variation by field in publication and citation practices.
- 7 Base assessment of individual researchers on a qualitative judgement of their portfolio.
- 8 Avoid misplaced concreteness and false precision.
- 9 Recognize the systemic effects of assessment and indicators.
- 10 Scrutinize indicators regularly and update them.

Web site; Nature [4]; video



# The Hong Kong Principles for assessing researchers

## 2020

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From **WCRIF**: The Hong Kong Principles are chosen with a view to explicitly recognise and reward researchers for behaviour that leads to trustworthy research by avoiding questionable research practices. The principles have been developed with the idea in mind that their implementation could help to assess researchers for career advancement with a focus on behaviours that strengthen research integrity. Five principles were formulated:

- 1 assess responsible research practices
- 2 value complete reporting
- 3 reward the practice of open science
- 4 acknowledge a broad range of research activities
- 5 recognise essential other tasks like peer review and mentoring

video; infographic; [5]



# DORA

## San Francisco Declaration on Research Assessment

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From **NSERC**: The **San Francisco Declaration on Research Assessment** (DORA) recognizes the need to improve the ways in which the outputs of scholarly research are evaluated, beyond the widely used journal impact factor. The declaration is comprised of a set of **recommendations** developed by a group of journal editors and publishers at the Annual Meeting of the American Society for Cell Biology in San Francisco in 2012. Over 1,500 organizations and 15,000 individuals have signed DORA, including research funders, research institutions, publishers, metrics providers, and researchers.

DORA recognizes that scholarly outputs are not limited to published journal articles but can also include article preprints, datasets, software, protocols, well-trained researchers, societal outcomes and policy changes resulting from research.

DORA aims to advance practical and robust approaches to research assessment globally and across all scholarly disciplines. It draws attention to the problem of the overreliance on journal-based metrics in hiring, promotion, and funding decisions, and encourages a community-driven change.

**video 1, video 2, video 3**



### General Recommendation

- 1 Do not use journal-based metrics, such as Journal Impact Factors, as a surrogate measure of the quality of individual research articles, to assess an individual scientist's contributions, or in hiring, promotion, or funding decisions.

### For funding agencies

- 2 Be explicit about the criteria used in evaluating the scientific productivity of grant applicants and clearly highlight, especially for early-stage investigators, that the scientific content of a paper is much more important than publication metrics or the identity of the journal in which it was published.
- 3 For the purposes of research assessment, consider the value and impact of all research outputs (including datasets and software) in addition to research publications, and consider a broad range of impact measures including qualitative indicators of research impact, such as influence on policy and practice.



# DORA

## San Francisco Declaration on Research Assessment

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### For institutions

- 4 Be explicit about the criteria used to reach hiring, tenure, and promotion decisions, clearly highlighting, especially for early-stage investigators, that the scientific content of a paper is much more important than publication metrics or the identity of the journal in which it was published.
- 5 For the purposes of research assessment, consider the value and impact of all research outputs (including datasets and software) in addition to research publications, and consider a broad range of impact measures including qualitative indicators of research impact, such as influence on policy and practice.

### For publishers

- 6 Greatly reduce emphasis on the journal impact factor as a promotional tool, ideally by ceasing to promote the impact factor or by presenting the metric in the context of a variety of journal-based metrics (e.g., 5-year impact factor, EigenFactor, SCImago, h-index, editorial and publication times, etc.) that provide a richer view of journal performance.



# DORA

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- 7 Make available a range of article-level metrics to encourage a shift toward assessment based on the scientific content of an article rather than publication metrics of the journal in which it was published.
- 8 Encourage responsible authorship practices and the provision of information about the specific contributions of each author.
- 9 Whether a journal is open-access or subscription-based, remove all reuse limitations on reference lists in research articles and make them available under the Creative Commons Public Domain Dedication.
- 10 Remove or reduce the constraints on the number of references in research articles, and, where appropriate, mandate the citation of primary literature in favor of reviews in order to give credit to the group(s) who first reported a finding.

### For organizations that supply metrics

- 11 Be open and transparent by providing data and methods used to calculate all metrics.
- 12 Provide the data under a licence that allows unrestricted reuse, and provide computational access to data, where possible.





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- 13 Be clear that inappropriate manipulation of metrics will not be tolerated; be explicit about what constitutes inappropriate manipulation and what measures will be taken to combat this.
- 14 Account for the variation in article types (e.g., reviews versus research articles), and in different subject areas when metrics are used, aggregated, or compared.

### For researchers

- 15 When involved in committees making decisions about funding, hiring, tenure, or promotion, make assessments based on scientific content rather than publication metrics.
- 16 Wherever appropriate, cite primary literature in which observations are first reported rather than reviews in order to give credit where credit is due.
- 17 Use a range of article metrics and indicators on personal/supporting statements, as evidence of the impact of individual published articles and other research outputs.
- 18 Challenge research assessment practices that rely inappropriately on Journal Impact Factors and promote and teach best practice that focuses on the value and influence of specific research outputs.



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### Reformscape; video

### CoARA – Coalition for Advancing Research Assessment

Our vision is that the assessment of research, researchers and research organisations recognises the diverse outputs, practices and activities that maximise the quality and impact of research. This requires basing assessment primarily on qualitative judgement, for which peer review is central, supported by responsible use of quantitative indicators.

### Agreement; PDF; video

- Montazerian, M et al. Editorial: Quality and quantity in research assessment: Examining the merits of metrics. [PDF](#)
- Montazerian, M et al. Editorial: Quality and quantity in research assessment: examining the merits of metrics, volume II. [PDF](#)
- Pöder, E. What Is Wrong With the Current Evaluative Bibliometrics? [PDF](#)



# CRedit

## Contributor Roles Taxonomy [3]

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**CRedit** is a high-level taxonomy, including 14 roles, that can be used to represent the roles typically played by contributors to research outputs. The roles describe each contributor's specific contribution to the scholarly output.

The idea for CRedit first came about in 2012 at a Wellcome Trust-Harvard University workshop([opens in new tab/window](#)). The CRedit solution then emerged in 2015 as an industry-wide initiative from a collaborative effort between funders, institutes and publishers.

CRedit requires the corresponding author to provide an accurate account of the diverse contributions of all authors of the paper. Detailing these contributions is a positive step towards transparency and clarity, with the roles of individual authors highlighted in a "CRedit author statement" appearing above the acknowledgement section of the published article.

ANSI/NISO standard 2022: [press-release](#); [committee](#); [PDF](#)



# CRedit

## Contributor Roles Taxonomy

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- 1 Conceptualization
- 2 Data curation
- 3 Formal Analysis
- 4 Funding acquisition
- 5 Investigation
- 6 Methodology
- 7 Project administration
- 8 Resources
- 9 Software
- 10 Supervision
- 11 Validation
- 12 Visualization
- 13 Writing – original draft
- 14 Writing – review & editing

CRedit where credit's due  
CRedit author statement  
video 1; video 2



# CRedit

## Contributor Roles Taxonomy

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### paper in Frontiers

Front. Res. Metr. Anal., 05 April 2024

Sec. Research Methods

Volume 9 - 2024 |

<https://doi.org/10.3389/frma.2024.1335240>

This article is part of the Research Topic

Tools, Frameworks, and Approaches for Enhancing Research  
Methods Teaching

[View all 4 Articles >](#)

## Enhancing research support services in health organizations by implementing a “Research Concierge Desk”, a case study



Areej AlFattani



Abeer AlFirm



Norah AlBedah



Haifa AlDakhil



Elaf Al Muaythir



Leena Zeyad



Yasmin AlTwajiri\*

### Author contributions

AAIFa: Writing – review & editing, Writing – original draft, Supervision, Methodology, Conceptualization. AAIFi: Writing – review & editing, Writing – original draft, Visualization, Methodology, Investigation. NA: Writing – review & editing, Writing – original draft, Visualization, Methodology, Investigation, Data curation, Conceptualization. HA: Writing – original draft, Visualization, Methodology, Investigation, Formal analysis, Conceptualization. EA: Writing – review & editing, Visualization, Methodology, Investigation, Formal analysis, Data curation. LZ: Writing – review & editing, Visualization, Software, Methodology, Investigation, Formal analysis. YA: Writing – review & editing, Writing – original draft, Supervision, Resources, Project administration, Methodology, Funding acquisition, Conceptualization.

V. Batagelj

Bibliographic mix



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[PubMed Abstract](#) | [Crossref Full Text](#) | [Google Scholar](#)

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# DOI

## Digital Object Identifier

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A **DOI** is a digital identifier of an object, any object — physical, digital, or abstract. DOIs solve a common problem: keeping track of things. Things can be matter, material, content, or activities.

A DOI is a unique number made up of a prefix and a suffix separated by a forward slash. This is an example of one: 10.1000/182. It is resolvable using our proxy server by displaying it as a link:

<https://doi.org/10.1000/182>.

Designed to be used by humans as well as machines, DOIs identify objects persistently. They allow things to be uniquely identified and accessed reliably. You know what you have, where it is, and others can track it too.

**WP** Digital object identifier; **video** DOI Number  
**Zenodo**; **communities**



- Ram Mishra: Hyperauthorship in Scientific Publications: a blessing and a curse?
- long list of authors
- Papers with the largest number of authors





# Acknowledgments

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This work is supported in part by the Slovenian Research Agency (research program P1-0294, research program CogniCom (0013103) at the University of Primorska, and research projects J5-2557, J1-2481, and J5-4596), and prepared within the framework of the COST action CA21163 (HiTEc).

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