

Efekti otvorene nauke – insentivi za istraživače koji primenjuju otvorenu nauku

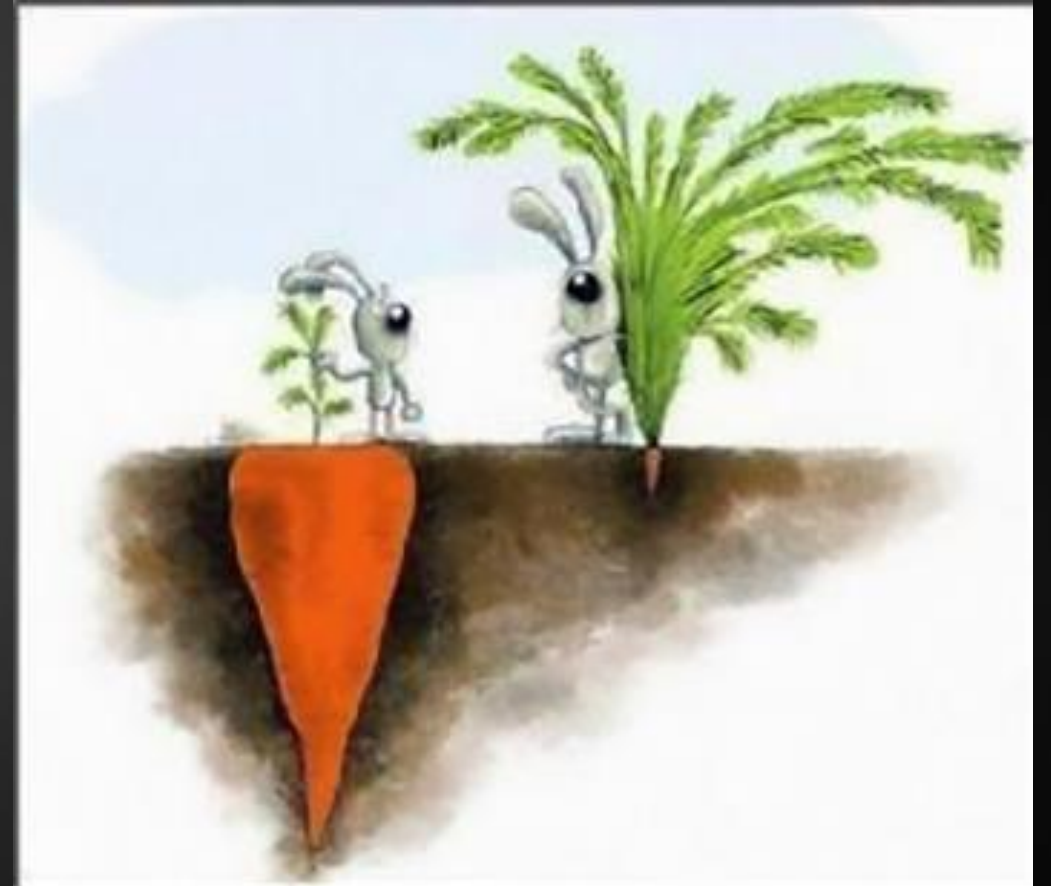
Effects of open science – incentives for researchers practising open science

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Dani otvorene nauke, Beograd, Srbija

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Where these patterns originate from?

Biases in publishing

Editorial: of 79 editors of high impact journals 94% claims they do not encourage replications (Madden, 1995)

Reviewer: 60% reviewers favour novel findings over replications – “waste of journal space” (Neuliep & Crandall, 1993)

Author: probability of submitting a positive finding 8 times higher than submitting a negative finding (Greenwald, 1975)

Where these patterns originate from?

Wrong incentives for science research

Competitiveness

Innovation favored over robustness of findings

"Null findings" devalued

Quantity favored over quality – "Publish or perish"





Who gets to incentivize open science practices?

The agents which promote standards for good science

Journal editors (publishing policies)

Academic institutions (employment and advancement policies)

Funding bodies (resource allocation policies)

Incentives for scientists – why should I spend my **valuable** time to share the data?

Making data publicly available is time-consuming

„Badges are simple, effective signals to promote open practices and improve preservation of data and materials by using independent repositories.“

Commentary

aps
ASSOCIATION FOR
PSYCHOLOGICAL SCIENCE

Psychological Science
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SAGE

Assessing the Robustness of Power Posing: No Effect on Hormones and Risk Tolerance in a Large Sample of Men and Women

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PLOS | BIOLOGY

META-RESEARCH ARTICLE

Badges to Acknowledge Open Practices: A Simple, Low-Cost, Effective Method for Increasing Transparency

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Data Availability Statement: All data and materials

Abstract

Beginning January 2014, *Psychological Science* gave authors the opportunity to signal open data and materials if they qualified for badges that accompanied published articles. Before badges, less than 3% of *Psychological Science* articles reported open data. After badges, 23% reported open data, with an accelerating trend; 39% reported open data in the first half of 2015, an increase of more than an order of magnitude from baseline. There was no change over time in the low rates of data sharing among comparison journals. Moreover, reporting openness does not guarantee openness. When badges were earned, reportedly available data were more likely to be actually available, correct, usable, and complete than when badges were not earned. Open materials also increased to a weaker degree, and there was more variability among comparison journals. Badges are simple, effective signals to promote open practices and improve preservation of data and materials by using independent repositories.

Badges to Acknowledge Open Practices

- ▶ Why is this important?
 - ▶ Current norms in publishing do not provide incentives for researchers to share data, materials or study designs.
 - ▶ Journals can provide this kind of incentive through acknowledging open practices.
- ▶ What if open practices are not possible or advisable? (For example, sharing some human participant data could violate confidentiality.)
 - ▶ When badge criteria cannot be met, a description in place of the badge can articulate why.
 - ▶ Disclosure makes explicit the conditions under which the ethic of openness is superseded by other ethical concerns.



Badges do not define quality of the study; badges certify that a particular practice was followed.

Many Labs 2: Investigating Variation in Replicability Across Samples and Settings



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Self-Esteem, Self-Disclosure, Self-Expression, and Connection on Facebook: A Collaborative Replication Meta-Analysis

Dana C. Leighton¹, Southern Arkansas University; Nicole Lagate², Illinois Institute of Technology; Sara LePine, Gordon College; Samantha F. Anderson, University of Notre Dame; Jon Grahe³, Pacific Lutheran University

ABSTRACT. This replication meta-analysis explored the robustness of a highly cited study showing that those with low self-esteem perceived benefits for self-disclosure through Facebook compared to face-to-face interactions (i.e., Forest & Wood, 2012, Study 1). Seven preregistered direct replication attempts of this study were conducted by research teams as part of the Collaborative Replication and Education Project (CREP), and results were meta-analyzed to better understand the strength and consistency of the effects reported in the original study. Half of the original results were clearly supported: Self-esteem negatively predicted perceived safety of self-disclosure on Facebook as compared to face-to-face interactions (meta-analytic effect size = $-.28$, original effect size = $-.31$), and self-esteem did not relate to perceived opportunities for self-expression; across the 7 replications, all 95% confidence intervals (CIs) for effect sizes included 0. However, 2 other findings received less support: Self-esteem only weakly and inconsistently predicted perceived advantages of self-disclosure on Facebook (meta-analytic effect size = $-.16$, original effect size = $-.30$), and contrary to the original study, there was no evidence for self-esteem predicting perceived opportunities for connection with others on Facebook (6 of the 7 replication effect size CIs contained 0). The results provided further evidence regarding the original study's generalizability and robustness. The implications of the research and its relevance to social compensation theory is presented, and considerations for future multisite replications are proposed.

Among social network sites, Facebook is a dominant platform that affects the thinking, emotions, behavior, and interactions of its active users, some two billion people worldwide, including 70% of the U.S. population (Facebook, 2017; Fiegerman, 2017; Kemp, 2017). It is therefore important that psychologists better understand how Facebook use is related to psychosocial factors.

Indeed, since its advent in 2004, scholars have published over a thousand articles on psychological issues related to Facebook.

Forest and Wood (2012) provided one of the first and most highly cited psychological examinations of Facebook use and psychosocial factors. As of December 2017, Elsevier's Scopus citation metrics show the article has been cited 145 times (12.17



Open Data, Open Materials, Preregistrations, and Replications badges earned for transparent research practices. Data and materials are available at <https://osf.io/2y6w/>. Links to Preregistrations for each project are available at <https://osf.io/2y6w/>.

The role of academic journals: TOP guidelines

Citation Standards Describes citation of data	Data Transparency Describes availability and sharing of data
Analytical Methods Transparency Describes analytical code accessibility	Research Materials Transparency Describes research materials accessibility
Design and Analysis Transparency Sets standards for research design disclosures	Preregistration of Studies Specification of study details before data collection
Preregistration of Analysis Plans Specification of analytical details before data collection	Replication Encourages publication of replication studies

ACROSS 3 TIERS

1 DISCLOSURE:
the final research output must disclose if the work satisfies the standard

2 REQUIREMENT:
the final research output must satisfy the standard

3 VERIFICATION:
third party must verify that the standard is being met

The role of academic journals: TOP guidelines

OVER 5,000 JOURNAL SIGNATORIES

Center for Open Science announces Elsevier as new signatory to TOP Guideline

Elsevier develops and implements comprehensive new journal data guidelines

The role of higher education institutions (HEIs)

To adopt and apply the open science and research principles of the OSR Initiative in their policies, operations and practices.

University level policies and guidelines need to address why openness of research is important and give instructions concerning open research methods and open access publishing.

At the same time, HEIs need to develop services and infrastructures to support open science, as well as to provide training for researchers related to data management planning and data preservation.

Open teaching resources (especially textbooks) present another challenge for OSR implementation. HEIs need to be supported by funding bodies and academic community to make this endeavor successful.



DORA

Declaration On Research Assessment

Improving how research is assessed

DORA background

- ▶ To improve ways in which scientific output is valued and evaluated, a group of editors and publishers of scholarly journals met during the Annual Meeting of The American Society for Cell Biology (ASCB) in San Francisco, CA, on December 16, 2012.
- ▶ The group developed a set of recommendations, referred to as the San Francisco Declaration on Research Assessment.

July 2020:

Signed by >19,75 organizations and >16,000 individuals



Meaningful Assessment Improves Research

Promotes value of all scholarly outputs

- Journal articles
- Preprints
- Datasets
- Software
- Protocols
- Research materials
- Well-trained researchers
- Societal outcomes and policy changes

Focuses on the merits of the work

- Reduces JIF-chasing
- Facilitates Open Science practices
- Improves rigor and reliability
- Enhances collaboration

DORA's vision

The declaration provides recommendations to stimulate positive action by:

- ▶ Funders
- ▶ Research institutions
- ▶ Publishers
- ▶ Metrics providers
- ▶ Researchers

DORA Ideas for Action

RETHINKING RESEARCH ASSESSMENT IDEAS FOR ACTION



5 COMMON MYTHS ABOUT EVALUATION

Hiring, promotion, and tenure decisions are largely made on "merit."

Quality research is easy to recognize and rises to the top

JIF and other similar journal-based indicators measure research quality

Researchers mostly care about journal reputation

Assessment practices will naturally improve over time

Assessing research and researchers, especially in research-intensive institutions, frequently relies on indicators like Journal Impact Factor (JIF) and similar measures as proxies for quality in research, promotion, and tenure (RPT) decisions. But a closer examination indicates that the perceived value of JIF is often grounded in **five common myths**:

Large volumes of applications for faculty searches make it difficult for evaluators to distinguish between top-tier candidates, and unintended biases—like the halo effect, availability, and confirmation bias—influence decision making.

Novel research, including breakthrough Nobel-prize winning work², often becomes influential (and cited) outside of the JIF measurement window¹, and findings with significant societal impact are not always published in journals with a high JIF.

JIFs are intended to reflect overall journal measures, and do not provide reliable or scientifically sound information about individual articles or researchers³. Forty percent of research-intensive institutions in North America mention JIF in RPT documents, but interpret it inconsistently to mean quality, importance, or prestige⁴.

Faculty members claim to prioritize peer readership when publishing, yet the perception that their peers value prestige and a reliance on university rankings puts pressure on researchers to publish their work in high impact factor journals⁵.

"Invisible work" like service is typically not valued in RPT, yet disproportionately falls on women and other scholars historically excluded from research⁶. Based on a model of current post-doc to faculty transitions, faculty diversity will not significantly increase until 2050 without active intervention⁷.

Analogous examples of these myths exist, both inside and outside of science.



5 DESIGN PRINCIPLES to help institutions experiment with and develop better research assessment practices

Instill standards and structure into research assessment processes

This might look like...
Tools like narrative CVs and assessment matrices⁸ provide standards to increase consistency in decision-making. Discussion amongst evaluators can be used to define expectations and identify desirable qualities before any assessment takes place.

Prioritize equity and transparency of research assessment processes

This might look like...
Neelhi Bhatia compiled a checklist of proven strategies to increase equity in hiring⁹. The Molecular, Cell and Developmental Biology Department at UC Santa Cruz includes untenured faculty in departmental tenure decisions to diversify the promotion and tenure process. Other institutions invite postdocs to "chalk talks" of faculty candidates discussing their future plans to provide insight into the faculty interview process.

Foster a sense of personal accountability in faculty and staff

This might look like...
The Universitat Oberta de Catalunya established a working group¹⁰ to develop and implement an action plan for responsible research assessment. The University of Utrecht hosted a series of town halls¹¹ to collect feedback before revising their policies. Make it explicit that it's everyone's responsibility to "stop the line" in the face of suspected bias at the beginning of every decision-making situation.

Take a big picture or portfolio view toward researcher contributions

This might look like...
The Biology Department at the University of Richmond evaluates the applicant pool to better identify the subset of faculty candidates that match their needs, rather than focusing on individuals¹². Cluster hires can help institutions think about hiring in terms of their larger academic portfolio¹³. They are also a proven strategy to increase diversity.

Refine research assessment processes through iterative feedback

This might look like...
Make short and long-term goals for new policies and practices to measure success. No process is perfect, there needs to be flexibility to revisit and refine policies and practices as needed.

References

1. <https://www.scribd.com/document/416616163/Research-Myths-That-Will-Reduce-Your-Research-Value>
2. https://www.aafbase.com/news/8826464/17724_4new_2016
3. <https://www.nature.com/news/merit-is-misleading-by-default-1.21871>
4. <https://www.research.com/news/2019/03/19/0319-4>
5. <https://www.jif.org/>
6. <https://www.research.com/news/2019/03/19/0319-4>
7. <https://www.research.com/news/2019/03/19/0319-4>
8. <https://www.research.com/news/2019/03/19/0319-4>
9. <https://www.research.com/news/2019/03/19/0319-4>
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18. <https://www.research.com/news/2019/03/19/0319-4>
19. <https://www.research.com/news/2019/03/19/0319-4>

Five design principles for institutions

1. Instill standard and structure into research assessment processes
2. Foster a sense of personal accountability
3. Prioritize equity and transparency of research assessment processes
4. Take a portfolio view toward researcher contributions
5. Refine research assessment processes through iterative feedback

We love



DORA

Change is happening: Funders

How we judge research outputs when making funding decisions

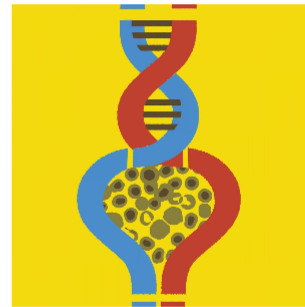


Published: 8 August 2018

Open access

Robert Kiley, Head of Open Research, and Jim Smith, Director of Science, discuss the steps Wellcome is taking to fulfil the principles of the San Francisco Declaration on Research Assessment (DORA).

When we published our [open access policy](#) over a decade ago, we made it clear that what counts when we make funding decisions is the intrinsic merit of the work and not the journal or publisher.



Credit: Science Photo Library

A researcher's skills, qualities and attitudes can never be expressed in a single metric.

Wellcome

London, United Kingdom

Application includes:

- List of research outputs
- Contributions to mentorship
- Output sharing plan to advance potential health benefits
- Plans for public engagement

Guidance provided to advisory panel members

We love



DORA

CANCER RESEARCH UK Together we will beat cancer Donate

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Home > Funding for researchers > Research features > Improving how we evaluate research: how we're implementing DORA

Improving how we evaluate research: how we're implementing DORA

Category: Research Feature 20 February 2018 Cancer Research UK

Cancer Research UK

London, UK

Application includes:

- List of research outputs
- Summary of 3-5 achievements
- Space to describe other measures of impact

Reminds peer reviewers and committee members of DORA principles throughout funding process

Change is happening: Research Institutes

How to Strengthen Hiring Practices at Academic Institutions: an Interview with Dr. Sandra Schmid

May 15, 2018



Join us as we discuss hiring decisions at research institutions

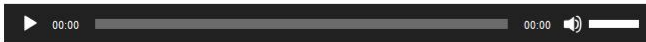
Live Monday, May 14 - 10:00 to 10:30 EDT #stDORA



Sandra Schmid, PhD
Ceall H. Green Distinguished
Professor in Cellular and Molecular
Biology, Chair Cell Biology
Department, UT Southwestern
Medical Center



Anna Hatch, PhD
DORA Community Manager



UT Southwestern Medical Center
Dallas, Texas

Candidates receive questions before Skype interviews, so they have time to reflect. The goal is to identify thoughtful individuals, in addition to candidates who process information quickly.



Topics

Main Focus: Science *

Main Focus: Applied

Main Focus: Clinic

Please describe in short what you believe is your scientific contribution in your scientific field.

scientific contribution

Remaining characters: 1000

What do you consider to be the 3 most important papers you have published? Please briefly justify this selection and mention your respective contribution. How were the works accepted in the scientific field, what impact did they have on the advancement of knowledge or the clinical practice (therapies, guidelines)?

Phrases (C) OR (DOI)

Description of first publication

Open share of the first publication

The Charité attaches great importance to transparent, replicable research and supports the objectives of Open Science (Open Access, Open Data). This includes the registration of studies in registries (clinicaltrials.gov, CRIS, etc.), the preregistration of studies, and the publication of negative and zero results. How have you been pursuing these goals so far and what are your plans for the future?

Remaining characters: 1000

Charité is interested in team science and collaborations. Please describe in short most important collaboration projects within recent five years.

Research team

Description

Please describe in short your interactions with relevant actors in biomedicine, e.g. industry, patient care, policy panel, etc.

Remaining characters: 1000

relevant persons

patient number

Description

Ulrich Dirnagl
@dirnagl

If you are applying for a professorship at the Charité you now need to tell us about your contributions to your scientific field, open science, team science, interactions with stakeholders. Past and future plans. As a structured narrative.

5:21 AM - Mar 4, 2018

70 47 people are talking about this

Charité University Hospital
Berlin, Germany

Application includes:

- Contribution to research field
- Open Science
- Team Science
- Interactions with stakeholders

Staff member sits on hiring deliberation meetings as a neutral party to promote balanced discussions

Change is happening: Publishers



PLOS About For Authors For Reviewers Blog Publications

PLOS and DORA

The San Francisco Declaration on Research Assessment (DORA) recognizes the need to improve the ways in which the outputs of scientific research are evaluated.

PLOS is a signatory of DORA and pledges to follow the five DORA guidelines for publishers:

PLOS
San Francisco, California

Dedicated page on website describing how its journals comply with DORA recommendations



Development

For advances in developmental biology and stem cells

Journal metrics

Signatory of



DORA

The Company of Biologists
Cambridge, UK

“Development uses a number of metrics that together provide a rich view of the journal’s performance”



EMBOpress

Impact Factor (2017): 10.6 (Thomson Reuters)
5-year Impact Factor (2016): 9.9 (Thomson Reuters)
Immediacy Index (2016): 2.9 (Thomson Reuters)
Eigenfactor (2017): 0.08 (eigenfactor.org)
Article Influence (2016): 5.2 (eigenfactor.org)
SJR (2016): 6.6 (JournalM3trics)
SNIP (2016): 1.5 (JournalM3trics)
h5 (2012-2016): 95 (Google Scholar)

EMBO Press

Heidelberg, Germany

- Acknowledges DORA signature
- Shows citation distributions for its journals
- Presents all available metrics side-by-side and rounded to single digits



Thank you!

Contact: ljiljana.lazarevic@f.bg.ac.rs

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[Dropbox folder with all the materials](#)

"Ova prezentacija je rezultat rada na projektu „Boosting EOSC readiness: Creating a scalable model for capacity building in RDM“, koji finansira Evropska unija u okviru projekta H2020-EU.1.4.1.1. EOSC Secretariat br. 831644."

"This presentation results from the project „Boosting EOSC readiness: Creating a scalable model for capacity building in RDM“, financed by the European Union, H2020-EU.1.4.1.1. EOSC Secretariat no. 831644."