HOW EOSC CAN MAKE
A DIFFERENCE FOR THE ESFRI

10th April 2019

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ESFRI POSITION on EOSC

ESFRI and e-Infrastructures

The Forum ESFRI has been created by the European Council in 2002 to develop and **support a coherent and strategy-led approach to policy-making on RIs in Europe**. It consists of 28 MS and 12 AC delegations and the EC. It acts upon **mandates by the Council on** RIs of pan-European interest and on its own behalf. ESFRI elaborates Roadmaps of the RIs to be funded as new initiatives (ESFRI Projects) or as consolidated strategic undertakings (ESFRI Landmarks). It contributes to the ERA development and monitoring. It publishes opinions (ESFRI Scripta) and policy papers.

ESFRI position

- According **the EU Council of 29 May 2015 - ESFRI explores mechanisms for better coordination of Member States' investment strategies** in e-infrastructures, covering also HPC, distributed computing, scientific data infrastructures and networks.
- Seeks close and effective **interaction between EOSC and ESFRI** at all levels of implementation. ESFRI proposed a **Joint Strategy Board** comprised on equal footing by representatives of the Boards both of ESFRI (EB) and of EOSC (Governing structure).
- Created a **ESFRI taskforce** to follow-up EOSC development, build relationships with different EOSC bodies and coordinate ESFRI inputs to the activities related to EOSC.

- Based on the ESFRI workshop RIs and EOSC (London, 31 st Jan 2019) **ESFRI shall foster an open data policy** and support collaboration of ESFRI RIs with the EOSC related projects. ESFRI interact with EOSC EB and GB to explore synergies in helping EOSC implement its roadmap and deliver on the timeline.

ESFRI POSITION on EOSC

1. ESFRI shall become a STRATEGY HUB OF FUNDERS

The Forum ESFRI shall act based on the **mandate by the Council as STARTEGY HUB OF FUNDERS** of e-RIs of pan-European interest. It shall based on this mandate to "… *explore mechanisms of better coordination of Member States' investment strategies in e-Infrastructures, covering also HPC, distributed computing, scientific data and networks*".

In 2018 the Council confirmed with respect to EOSC governance the two stage process for the EOSC governance implementation, by which EOSC shall finally become stake-holder-driven „*RECOMMENDS that effective coordination is established with ESFRI*"

2. ESFRI (and other internationally open) RIs are unique in assuring a robust quality control on scientific data

ESFRI (and other internationally open) RIs are unique in assuring **a robust quality control on scientific data** to be opened also for EOSC. ESFRI Landmarks and Projects are RIs producing scientific data that are operated by highly competitive and broad research communities covering most areas of research. **ESFRI RIs are evaluated, selected, monitored and reviewed** with much emphasis on their e-Infrastructure as an element for **excellent science and excellent data** services to the broadest community. ESFRI RIs are amongst the research institutions that already perform **quality check on the open access data and have data management plans** agreed by the users.

3. EOSC should adopt a SUBSIDIARITY and PARTICIPATORY principle, where robust data management practices exist; it should NOT DELEGITIMATE, should not CREATE FUNDING PROBLEMS to well DMP-performing RIs

EOSC should recognize and fully benefit from **well performing data management plans (DMPs)** and practices as developed by RIs and avoid any direct or indirect negative impact on those RIs that are already performing at high level, rather it should help the full compliance of the existing DMPs with FAIR and Reproducibility of Data principles. **EOSC should favour the participation of the RIs to the elaboration of "Commons"** to serve as key elements of the EOSC.

The acronym should actually become, or be generally understood as, **European Open Science Commons.**

4. EOSC should FILL THE GAPS of unstructured areas

EOSC should concentrate in raising to **the most advanced level the science domains that have unsatisfied e-needs**. EOSC should transparently display which and where services already exist, and help to develop metadata standards for overall progressive alignment of different domains and their increasing integration.

5. EOSC should enable high level INTERDISCIPLINARITY

EOSC should concentrate to develop a robust environment to promote **INTERDISCIPLINARITY by favouring the exploitation of the most advanced and documented data sets** by advanced metadata and data analysis support services.

6. EOSC should make high level INTEROPERABILITY possible and workable

The great goal of **INTEROPERABILITY** is the most EOSC specific of all. RIs can contribute to make **Data Management Plans (DMPs) more homogeneous** in each domain and to address near-neighoubour domains,
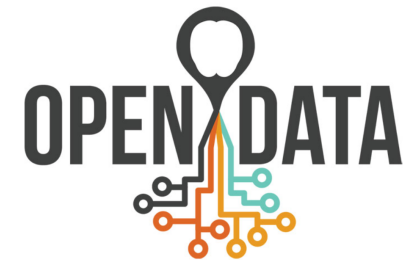
but the general picture of cross-domain interoperability needs the EOSC action at **European/international level.** This is **a long term goal** to which the existing sectorial best practises can contribute, but should not be perturbed as far as they are the operational best existing model and system.

- **FAIR principles are an essential part of EOSC architecture** (core services, the EOSC portal components and federated catalogues of service offerings)
- EC and MS welcomed the **Implementation Roadmap and the federated model** for the EOSC.

FAIR PRINCIPLES-ESFRI RIs

- **ESFRI RIs are generators of FAIR and Reproducible data** which are FAIR-ready and accessible through their own portals (**Data Commons**)
- **RIs are evaluated, selected, monitored and reviewed** with much emphasis on their e-Infrastructure component.
- All ESFRI RIs operate **quality controlled Data Management Plans**
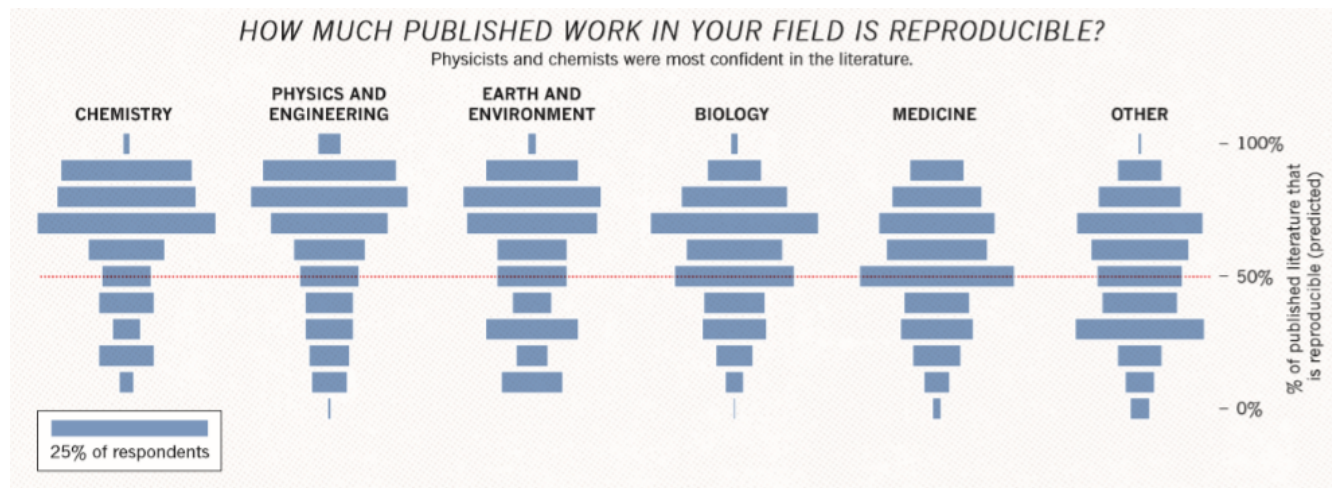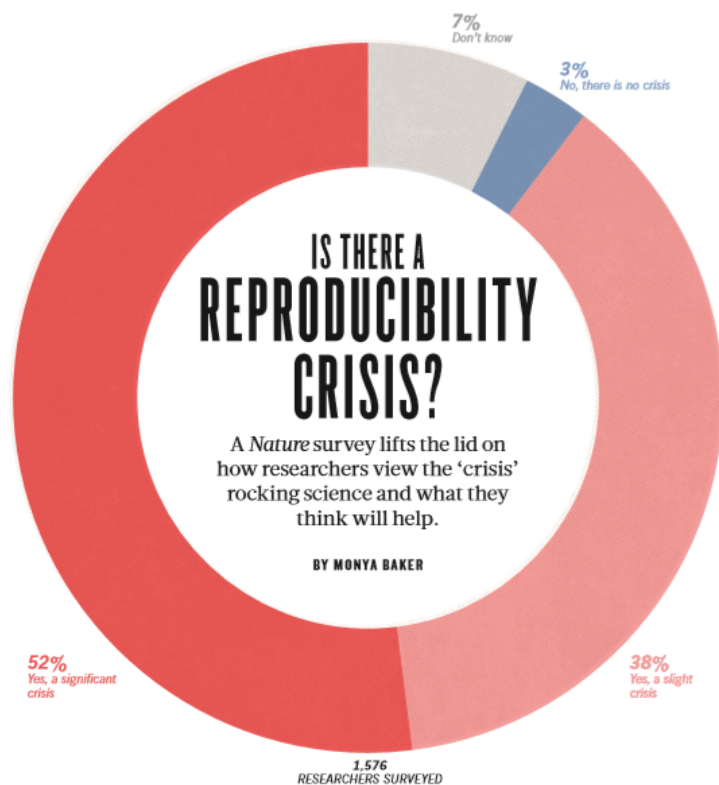
OPEN DATA

Findable 🔍

Accessible

Interoperable

Reusable ♻

JAN HRUŠÁK

REPRODUCIBILITY CRISIS?

Baker M., 2016. Is there a reproducibility crisis? *Nature 533 (452-454)*

August 2005 | Volume 2 | Issue 8 | e124

7%
Don't know

0696

PLoS Medicine | www.plosmedicine.org

Essay

Why Most Published Research Findings Are False
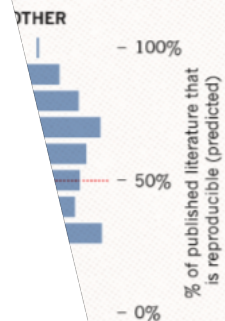
John P. A. Ioannidis

OTHER

Summary

There is increasing concern that most current published research findings are false. The probability that a research claim is true may depend on study power and bias, the number of other studies on the same question, and, importantly, the ratio of true to no relationships among the relationships probed in each scientific field. In this framework, a research finding

factors that influence this problem and some corollaries thereof.

Modeling the Framework for False Positive Findings

Several methodologists have pointed out [9–11] that the high rate of nonreplication (lack of confirmation) of research discoveries is a consequence of the convenient, yet ill-founded strategy of claiming

is characteristic of the field and can vary a lot depending on whether the field targets highly likely relationships or searches for only one or a few true relationships among thousands and millions of hypotheses that may be postulated. Let us also consider, for computational simplicity, circumscribed fields where either there is only one true relationship (among many that can be hypothesized) or

52%
Yes, a significant crisis

% of published literature that is reproducible (predicted)

- 100%
- 50%
- 0%

Baker M., 2016. Is there a reproducibility crisis? *Nature 533 (452-454)*

Open is not enough

Xiaoli Chen[1,2], Sünje Dallmeier-Tiessen[1]*, Robin Dasler[1,11], Sebastian Feger[1,3], Pamfilos Fokianos[1], Jose Benito Gonzalez[1], Harri Hirvonsalo[1,4,12], Dinos Kousidis[1], Artemis Lavasa[1], Salvatore Mele[1], Diego Rodriguez Rodriguez[1], Tibor Šimko[1]*, Tim Smith[1], Ana Trisovic[1,5]*, Anna Trzcinska[1], Ioannis Tsanaktsidis[1], Markus Zimmermann[1], Kyle Cranmer[6], Lukas Heinrich[6], Gordon Watts[7], Michael Hildreth[8], Lara Lloret Iglesias[9], Kati Lassila-Perini[4] and Sebastian Neubert[10]

The solutions adopted by the high-energy physics community to foster reproducible research are examples of best practices that could be embraced more widely. This first experience suggests that reproducibility requires going beyond openness.

O
pen science and reproducible research have become pervasive goals across research communities, political circles and funding bodies[1–3]. The understanding is that open and reproducible research practices enable scientific reuse, accelerating

flows for reproducible and reusable research more widely in other scientific disciplines.

Approaching reproducibility and reuse in HEP

ature 533 (452-454)

% of published literature that is reproducible (predicted)

- 100%

- 50%

- 0%

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...DUCIBILITY CRI...

nature
International journal of science

Subscribe

EDITORIAL
25 MAY 2016
Nature News

Reality check on reproducibility

A survey of *Nature* readers revealed a high level of concern about the problem of irreproducible results. Researchers, funders and journals need to work together to make research more reliable.
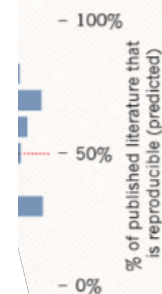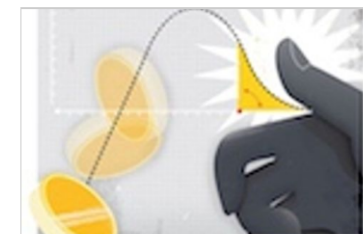
NEWS FEATURE
25 MAY 2016
Nature News

1,500 scientists lift the lid on reproducibility

Survey sheds light on the 'crisis' rocking research.

Monya Baker

COMMENT
3 FEB 2016
Nature News

Reproducibility: A tragedy of errors

Mistakes in peer-reviewed papers are easy to find but hard to fix, report David B. Allison and colleagues.

David B. Allison, Andrew W. Brown ⋯ Kathryn A. Kaiser

100%

50%

% of published literature that is reproducible (predicted)

0%

reprodu...
Yes, a ...
crisis

is true ... bias, the number ... scientific ... 8 is that open and ... reproducible and reusable research more widely in other same question, and, imp... reuse, accelerating scientific disciplines. of true to no relationships am... relationships probed in each scientifi... Approaching reproducibility and reuse in HEP field. In this framework, a research finding

...ness.

...ature 533 (452-454)

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THANK YOU FOR YOUR ATTENTION

EUROPEAN OPEN SCIENCE CLOUD

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