Question

Does changing reproducibility practices mean changing research culture?

❏ Yes

❏ No

Reproducibility

- <u>Proces</u>: being transparent about and accountable for your research; others should be able to reproduce your steps

- <u>Outcome</u>:
  - Replication: testing the reliability of a prior finding with different data
  - Reproducibility: testing the reliability of a prior finding using the same data and the same analysis strategy
  - Robustness: Robustness refers to testing the reliability of a prior finding using the same data and a different analysis strategy

Aspects of reproducibility in the proces of research

- Pre-registration
  - Supports replicability/reproducibility; prevents/limits publication bias and selective outcome reporting

- FAIR data

- FAIR software

- Reproducibility checks

- Protocol amendments with explanations

- Open Access publishing

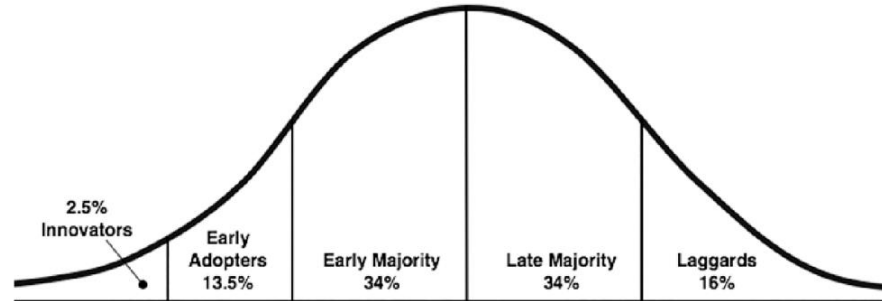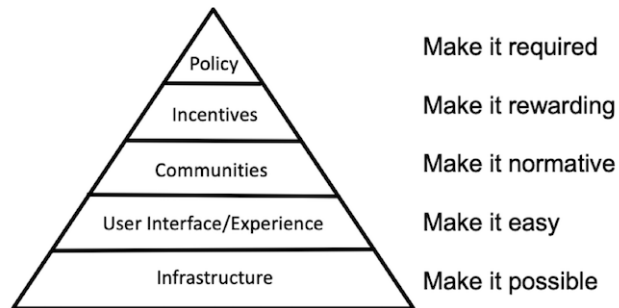# Aspects of reproducibility in the proces of research

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Culture change

Strategy for Culture Change

June 11th, 2019, Brian Nosek

Posted in: Reproducibility, Open Science, Culture Change, Behavior Change

Rogers E. Diffusion of Innovations: Free Press; 1983.

NLRN
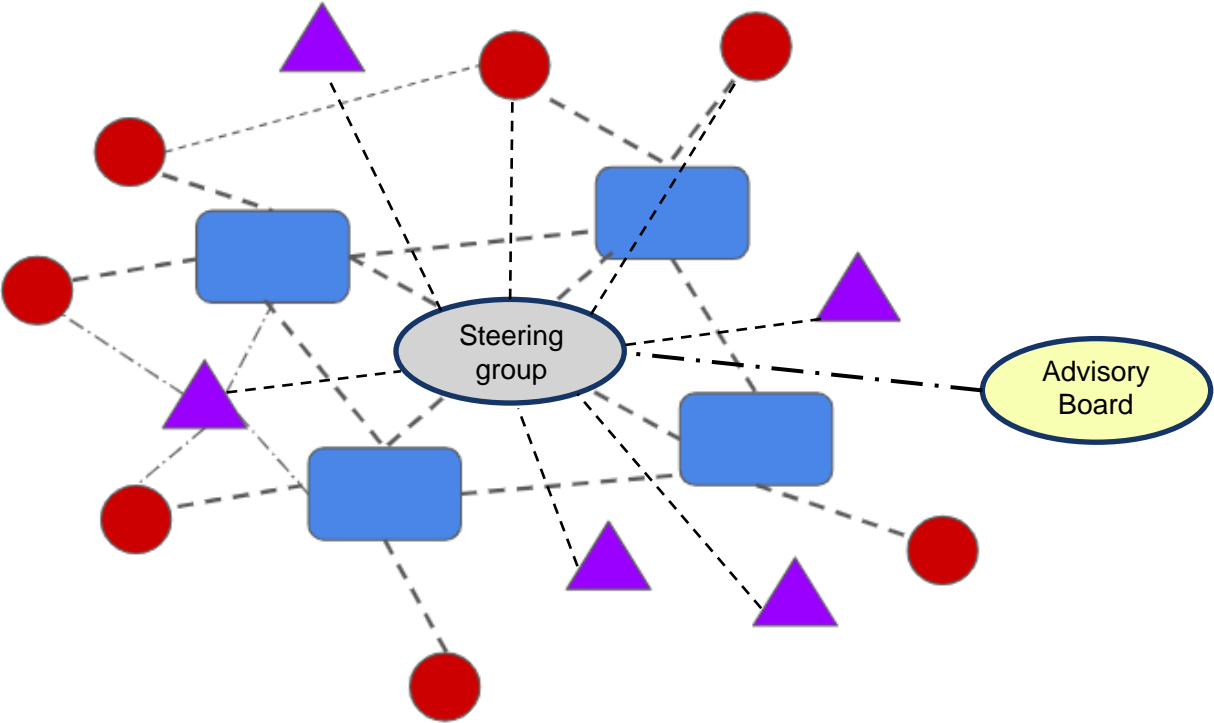
Members and allied initiatives

Scaling up reproducibility

- Knowledge Exchange report

- Aim: study to investigate how the practice of conducting research in a reproducible way can be scaled up from pioneers to the majority of researchers and research-adjacent data professionals
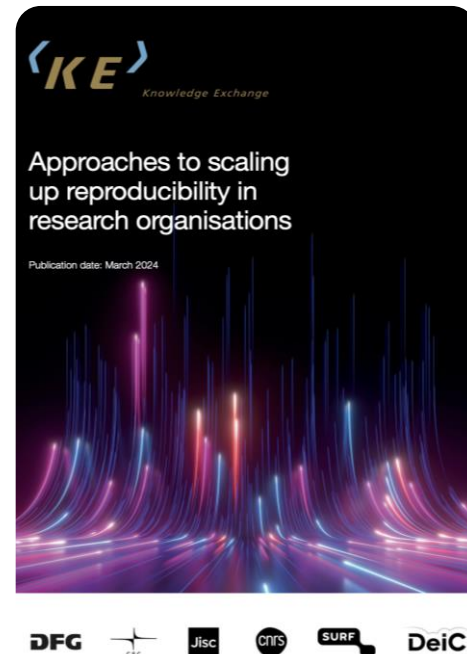
Levels in scaling up reproducibility

An organisation may function at more than one level at the same time.

Different levels may be seen as beneficial by different stakeholders (with differing goals).

Focused on internal aspects of the organisation (external factors can also be relevant).

Level 1: Pockets of excellence	Level 1: Pockets of excellence	Level 1: Pockets of excellence
Examples: Code repositories / version control, digital repositories, Octopus, ReproducibiliTea, champions	Level 2: Partially coordinated	Level 2: Partially coordinated
	Examples: Carpentries training, reproducibility topics taught as part of courses	Level 3: Organisational-level commitment
		Examples: Organizational policy data sharing, software licensing, national networks

Enables an levels of progress in scaling up reproducibility

Table 5: Enablers of scaling up reproducibility

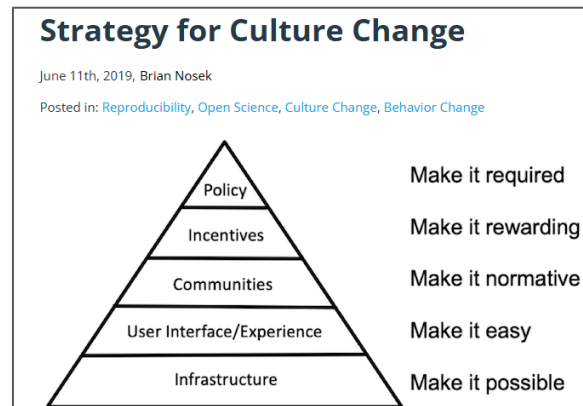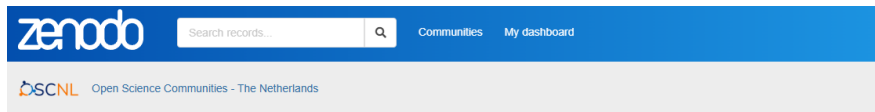|	Level 1: Pockets of excellence	Level 2: Partially coordinated	Level 3: Organisational-level commitment
Tools	Digital tools that support reproducibility are available internally, but the majority of researchers may struggle to understand which infrastructure to use, when and how.	Access to or development of some digital tools is supported by some teams, faculties and/or disciplines, and supported by some training.	Digital tools that support reproducibility are widely utilised, integrated with other organisational tools, highly accessible and user-friendly, and supported by programs and/or personnel that increase awareness and skills.
Education and training	Individuals take responsibility for their own education and training in reproducible practices, mostly from external sources.	Some training exists in certain faculties or across disciplines, but are not creditable or part of formal curricula.	Training is scalable to meet demand, tailored to different stakeholders, and is a creditable, compulsory part of curricula and/ or generally available to all.
Incentives	Individuals are intrinsically motivated to undertake reproducibility practices and promote the benefits to their peers/team.	Research leaders in some teams or faculties encourage reproducibility practices in line with their own values and practices, and/or those of their discipline.	Organisational cultures and values incorporate and value reproducibility practices, including research assessment, and hiring and promotion criteria.
Modelling and mentoring	Individuals model reproducibility supporting behaviours to their peers and/or teams.	Small internal communities that share best practice are built in some areas, such as across disciplines or teams in a faculty.	Internal communities are built and supported across the organisation to collaboratively implement reproducibility practices.
Review and feedback	Some research teams may have peer review processes that include reproducibility practices.	Some faculties or research leaders across disciplines may support review and feedback processes that facilitate reproducibility.	Organisational strategies and processes to support reproducibility incorporate review and feedback approaches.
Expert involvement and advice	Advice on reproducibility practices is usually provided by individuals for whom this is not part of their organisational role, but who may have personal expertise.	Some areas of the organisation may have access to dedicated roles that include supporting reproducibility, in research and/or centralised teams.	Staff in dedicated roles are supported by organisational strategy and centrally coordinated, with a clear mandate to lead across faculties to achieve scalability and sustainability.
Policies and procedures	Individuals may choose to adhere to disciplinary practices related to reproducibility.	Some policies and practices at faculty and/or discipline level set expectations and/ or requirements for staff on reproducibility practices.	Organisational policies and procedures set expectations and/ or requirements for staff, and evaluation of their efficacy occurs regularly.

Outcomes NLRN network node meeting

- Discrepancy:

    - Organisational policies in place, several networks have formed (a.o. NLRN) – level 3

    - Implementation at departmental or research group level depends strongly on motivation of individuals – level 1 (pockets of excellence) or 'level 0'.

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Policy	Make it required
Incentives	Make it rewarding
Communities	Make it normative
User Interface/Experience	Make it easy
Infrastructure	Make it possible

Statements

OSC-NL and NLRN team up to collaborate on Open and Reproducible Science in the Netherlands

Brinkman, Loek[1, 2]; Eerland, Anita[3, 2]; van 't Veer, Anna[4, 2]; Heininga, Vera[5, 2]; Ochi, Taichi[5, 2]; Fijten, Rianne[6, 2]; van Lissa, Caspar[7, 2]; Zurita-Milla, Raul[8, 2, 9]; Sarafoglou, Alexandra[10, 2, 9]; de Boer, Michiel[11, 9]; Scheel, Anne[9]; van Eyghen, Hans[7, 9]; Haven, Tamarinde[12, 7, 9]; Imming, Melanie[13]

Show affiliations

With the addition of NLRN to the Dutch academic landscape, it is relevant to indicate how and where OSC-NL and NLRN differ in their strategies and roles, and how they complement one another. To this extent, OSC-NL and NLRN have published this collective statement that explains where these initiatives overlap, and what sets them apart.

In short, OSC-NL is a national community of researchers and research supporters who make their OS practices visible and accessible to their peers, and provides input to policy, infrastructure and services to both local and national stakeholders. NLRN, on the other hand, is a network that brings togethers institutes, local initiatives and other stakeholders to increase the reproducibility of science, focussing on stakeholders alignment and agenda-setting.

OSC-NL and NLRN share many goals, as Open Science and Reproducibility are topics that go hand-in-hand. It is therefore natural for OSC-NL and NLRN to collaborate. In fact, many members of OSC-NL are already active in NLRN, either in the NLRN steering committee or advisory board. At the NLRN Launch Event, possibilities for future collaborations were explore, for example on joint efforts to stimulate and facilitate ReproHacks.

With OSC-NL and NLRN teaming-up, you can expect many new events and initiatives to stimulate Open and Reproducible Science!

National Reproducibility Networks: A strategy for a loose federation

December 2023

Introduction

This document outlines an agreed approach that the community of National RNs will adopt to facilitate supranational coordination. It has been discussed among the existing National RNs, and represents agreement on the best approach at this point in the development of the international community of National RNs, providing a framework that is lightweight, practical and flexible. In due course, this framework may change, for example become stronger. It will be kept under active review by the National RNs.

Background and issues

There are now nearly 20 national RNs, mainly in Europe but also in South and North America and Australia. The growth has been organic and relatively fast, given that the first National RN (the UK Reproducibility Network, UKRN) only launched in 2019. Such organic and rapid growth of similar bodies operating in rather different national research systems gives rise to both opportunities and challenges, for example:

1. The RN model has clearly proved attractive and successful at motivating people, and has been adapted to suit national contexts. However, we have not agreed what *constitutes* an RN, and what constitutes other kinds of body. Some similarity between RNs is important if we are to **work well together**, and if the model is to **retain its identity and coherence**.
2. The RNs meet informally every two months to share news and opportunities to collaborate, and they have an outline agreement on the use of the basic RN logo. However, there are certainly opportunities for **greater levels of coordination** between the RNs, and collective action by them, e.g., in the context of supranational and international bodies such as the EU or UNESCO.
3. External stakeholders, such as publishers, are often international bodies, who would not necessarily wish to have individual relations with each national RN separately. There are other examples of where **communication and engagement might be better done on an international, collective basis**.

Focus areas

- Inventory of materials, efforts and projects related to increasing reproducibility and replication

- Replication and Reproducibility in non-quantitative science and scholarship

- Connecting researchers and research support – facilitating communication and collaboration

- Further collaboration with meta scientists in the Netherlands and beyond

Activities

CODECHECK and TU Delft Hackathon

18 SEPTEMBER 2023 09:30 TILL 16:30 - LOCATION: ORANGE ROOM, TU DELFT LIBRARY & ONLINE | 📅 ADD TO MY CALENDAR

Register

Are you interested in reproducible code and Open Science? We have the perfect opportunity for you!

As part of a pilot project between TU Delft and CODECHECK, we are looking for researchers in Delft who would like their projects to be "codechecked" during a hackathon on 18th **September 2023**.

A codechecker will work with you during the session to check if your code and data can be run by others to generate similar results. On completion, you will receive a certificate that confirms that your results are reproducible!

You could submit (openly available) code and data associated with:

- A paper that you have recently published
- A preprint that is publicly available
- Code and results files that have been deposited in the 4TU.ResearchData repository, preferably using Git

Think this could be you? Contact s.sharma-10@tudelft.nl with a brief description of your project and links to your code and data by 31st **August 2023**. Selected papers/project will be notified in early September 2023.

See https://openpublishing.tudl.tudelft.nl/codecheck-and-tu-delft-hackathon/ for more information.

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Tamarinde Haven • 1.
Assistant professor at Tilburg University
3 Monate • 🌐

Last week, we* launched the Netherlands Reproducibility Network (NLRN). A big shout out to our amazing panellists and speakers (including Julia Menon, Charlotte Rulkens, Frank Ostermann, Egon Willighagen, Ludo Waltman, M ... mehr anzeigen

Übersetzung anzeigen

Nieuw netwerk wil toevalstreffers in de wetenschap voorkomen: 'Onderzoek moet herhaalbaar zijn' - Vox magazine

voxweb.nl • Lesedauer: 3 Min.

NLRN symposium 2024

December 6

Register now for the annual symposium of the Dutch Reproducibility Network on 6 December 2024 at UMC Groningen!

Under the theme of "The Future of Reproducibility", participants are invited to think about the role that reproducibility and replication will play in different fields of research and how a post- (reproducibility) crisis future might look like.

Meta scientist Tracey Weissgerber and historians Pim Huijnen and Pieter Huistra will give the keynote talks. In the afternoon, participants are invited to join workshops such as "Reproducibility in the Applied Science", "Reproducibility and Research Integrity" or "Analysis Blinding". The day will conclude with a panel discussion with career-young representatives from research, funding agencies, infrastructure and policy making to discuss their views on the future of reproducibility.

Registration is open: https://nlrn-symposium24.eventbrite.com

Question

Does changing reproducibility practices mean changing research culture?

❑ Yes

❑ No