The Alan Turing Institute

The Turing Way

Transparent research through the scientific lifecycle

Kirstie Whitaker
Pronouns: she/her

@TuringWay @kirstie_j
https://doi.org/10.5281/zenodo.4274313

The Turing Way is:

- a book
- a community
- a global collaboration
- a whole tonne of work

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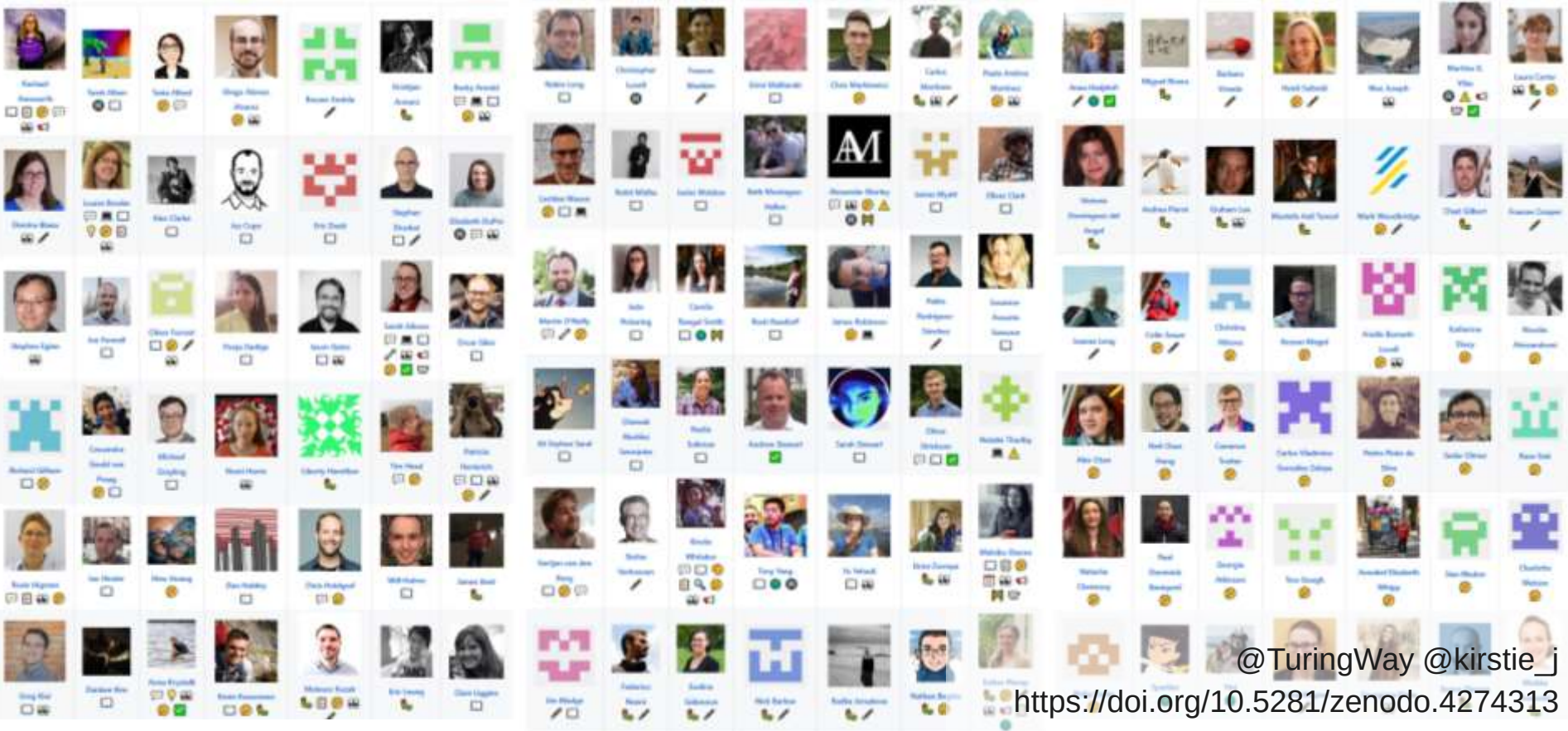
Thank you to our 200+ contributors



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An introduction to me

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Picture credit: Chris Gorgolewski
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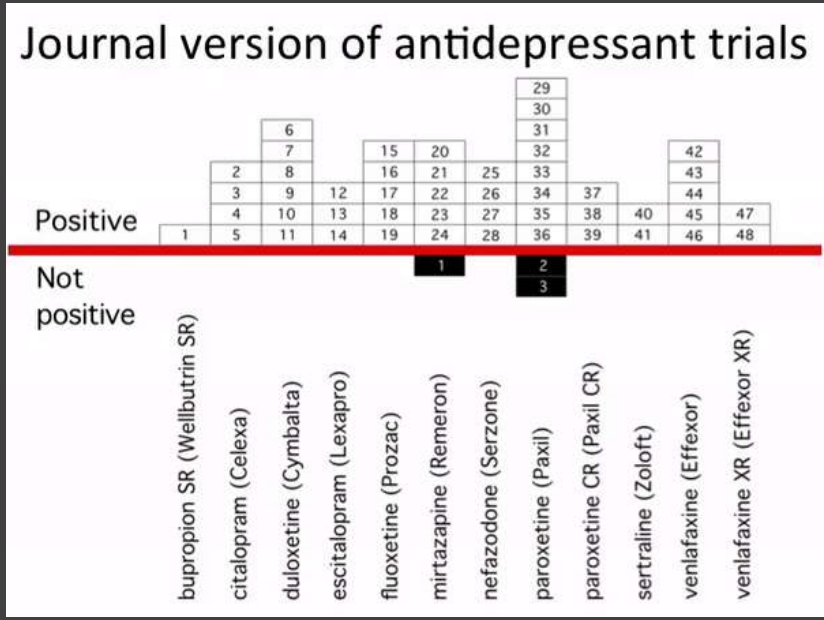
Research teams can change their analysis plans to deliver a result that they like.



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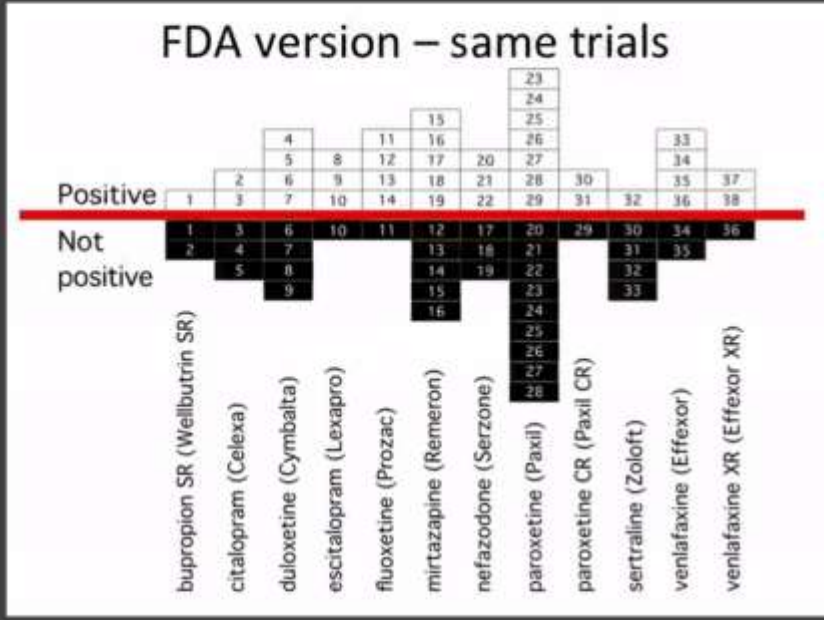

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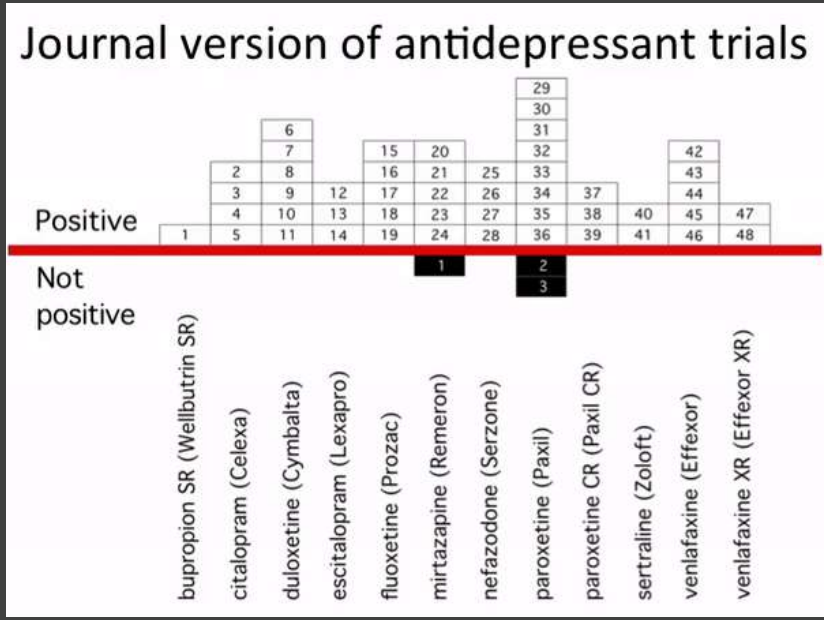

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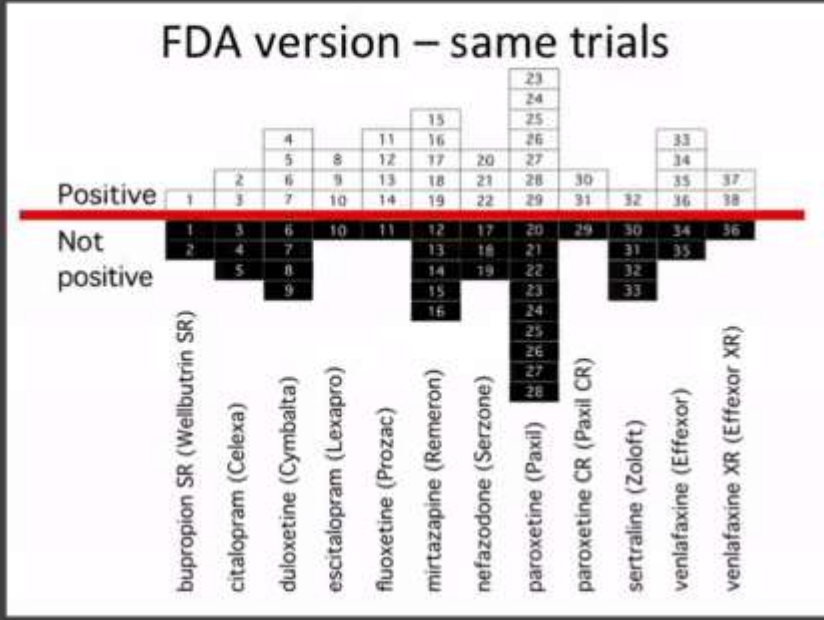

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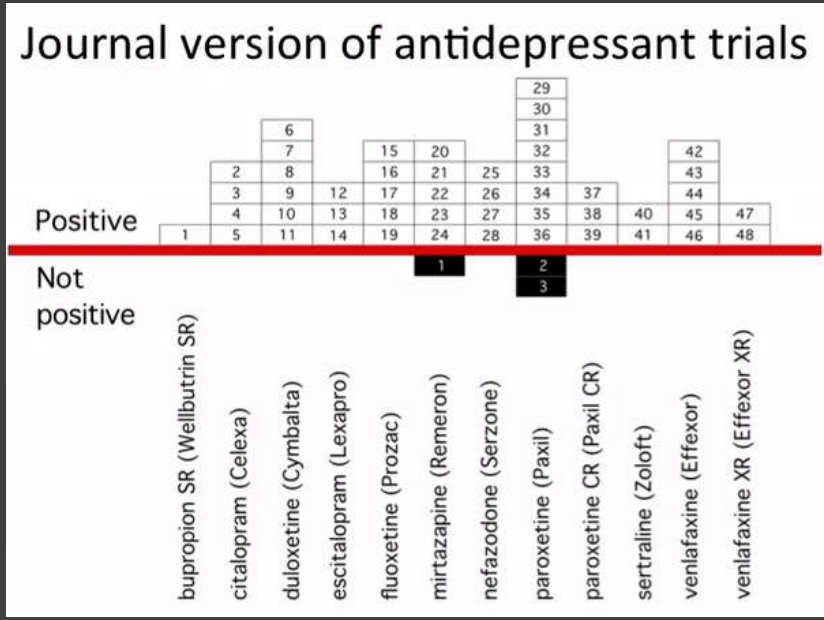
So how do we know which to rely on?!



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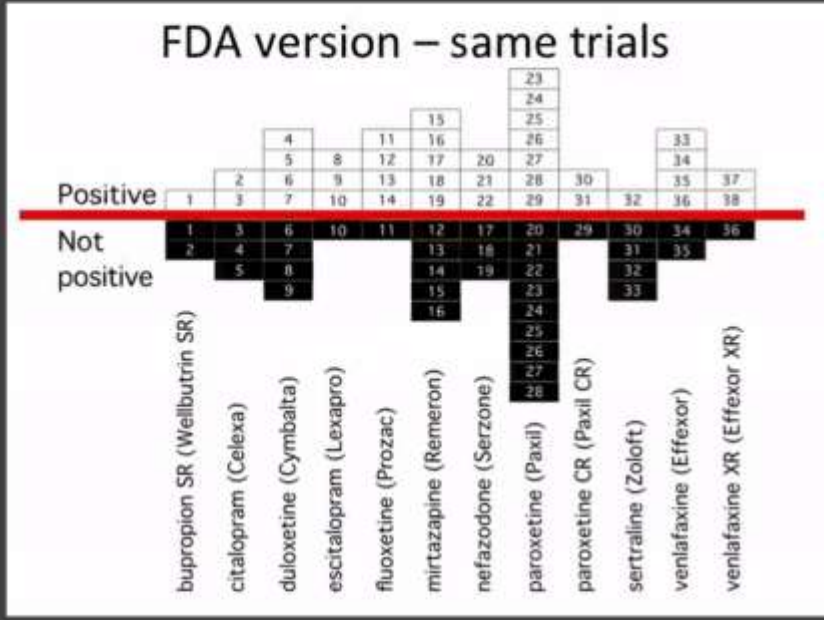

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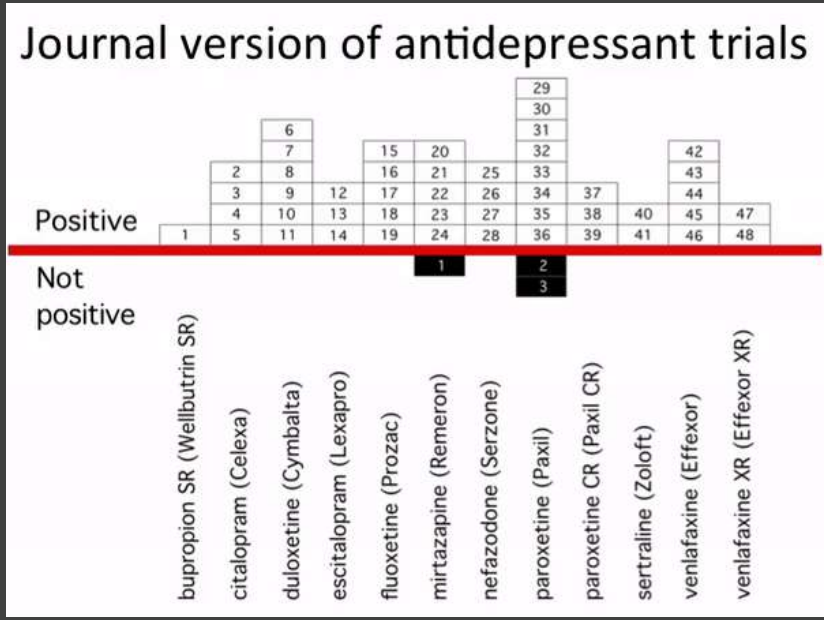

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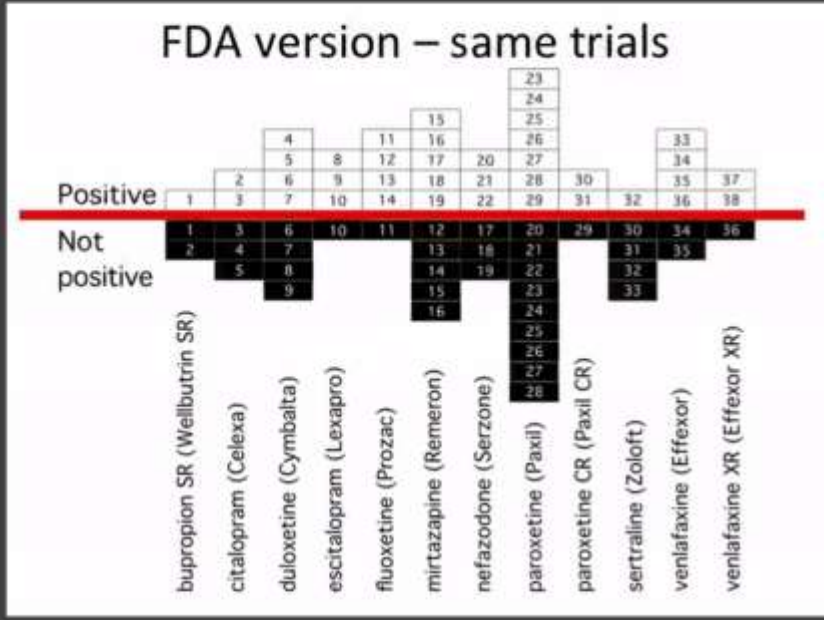

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Barriers to transparent research

Is not considered for promotion

Held to higher standards and/or hard to check

Publication bias towards novel & “significant” findings

Requires additional skills

Plead the 5th

Throw data at the wall and see what sticks

Takes time

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The Turing Way

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The Turing Way is an **open source book project** that involves and supports a **diverse research community** in ensuring that reproducible and ethical **data science** is accessible and comprehensible **for everyone.**

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The Turing Way

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Welcome

Guide for Reproducible Research

Overview

Open Research

Version Control

Licensing

Research Data Management

Reproducible Environments

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Code Testing

Code Reviewing Process

Continuous Integration

Reproducible Research with Make

Research Compendia

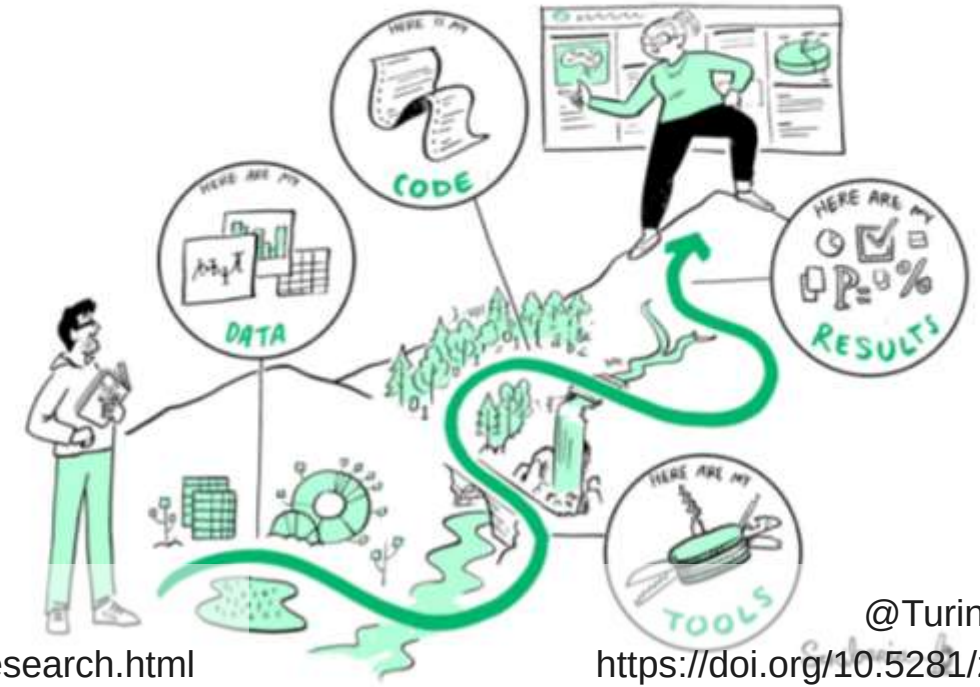
Credit for Reproducible Research

Guide for Reproducible Research

This guide covers topics related to skills, tools and best practices for research reproducibility.

The Turing Way defines reproducibility in data research as data and code being available to fully rerun the analysis.

There are several definitions of reproducibility in use, and we discuss these in more detail in the Definitions of Reproducibility section of this chapter. While it it absolutely fine for us each to use different words, it will be useful for you to know how *The Turing Way* defines *reproducibility* to avoid misunderstandings when reading the rest of the handbook.



https://the-turing-way.netlify.app/reproducible-research/reproducible-research.html

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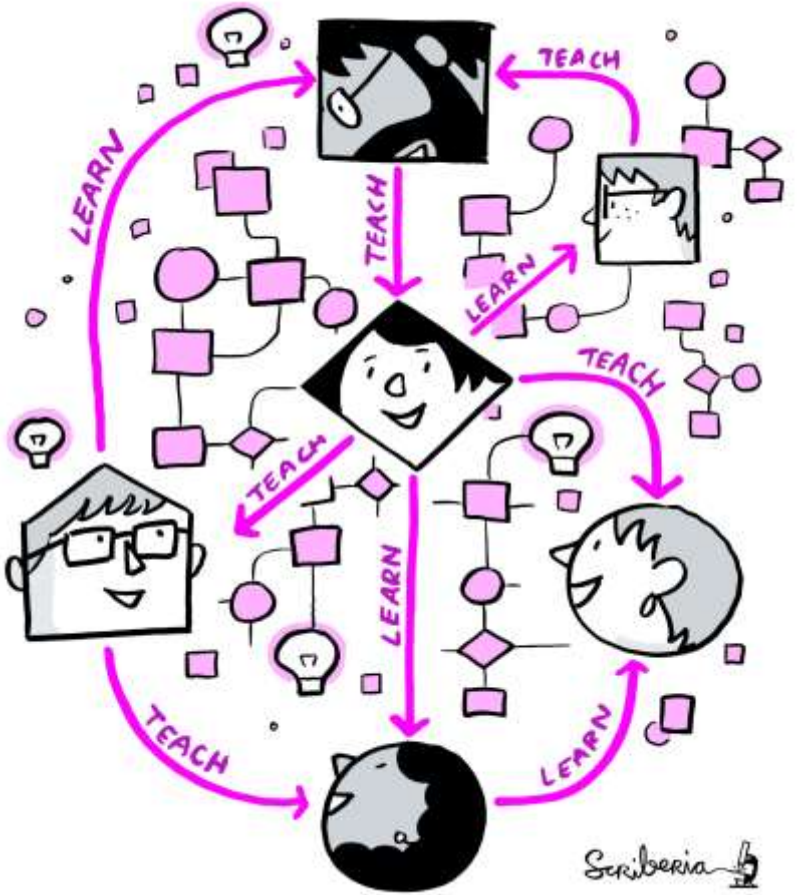

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https://the-turing-way.netlify.app/communication/communication.html

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Transparent, reliable, and open by design

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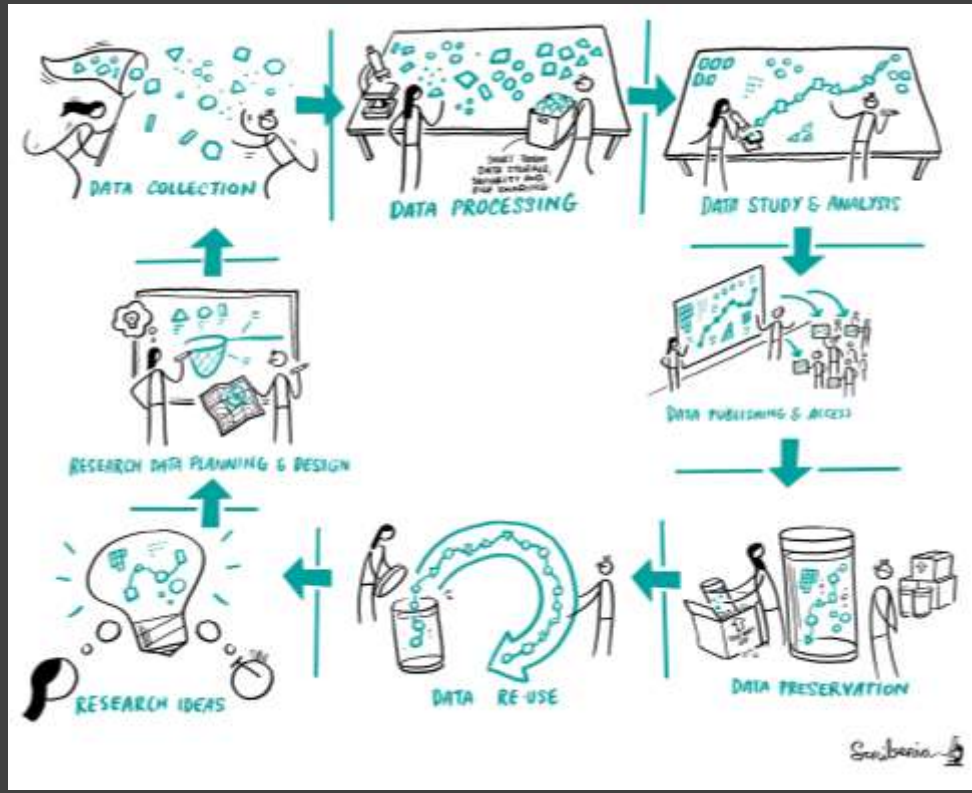
For research to be **reproducible**, **reliable** and **reusable** we have to cover all the steps of the research cycle



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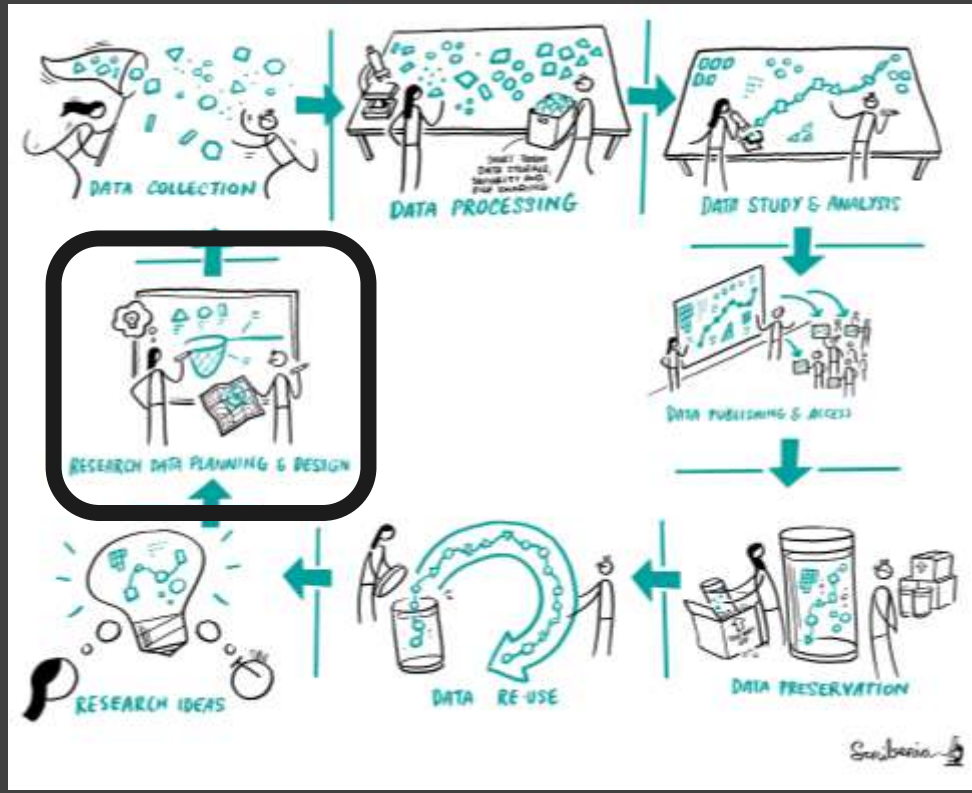

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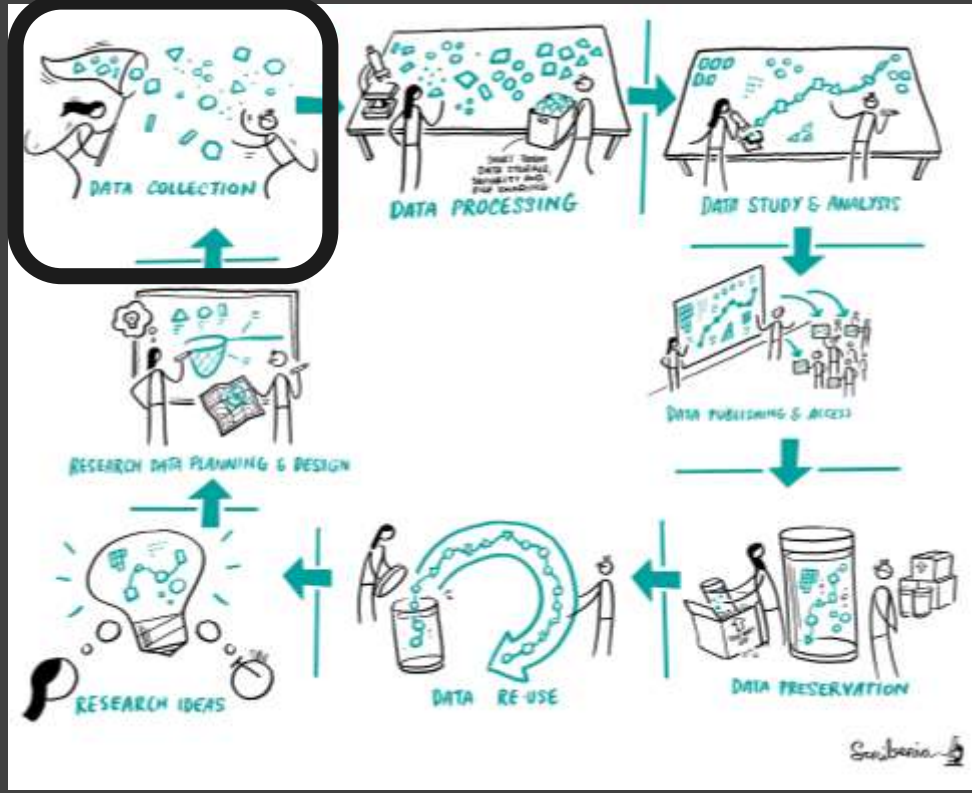

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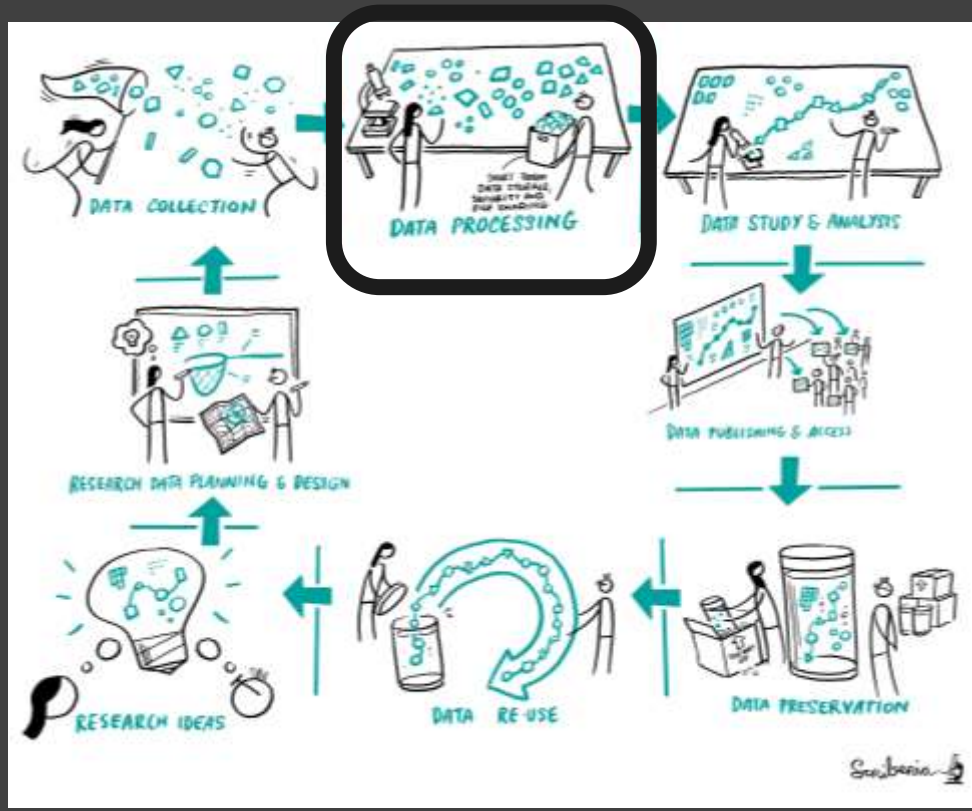

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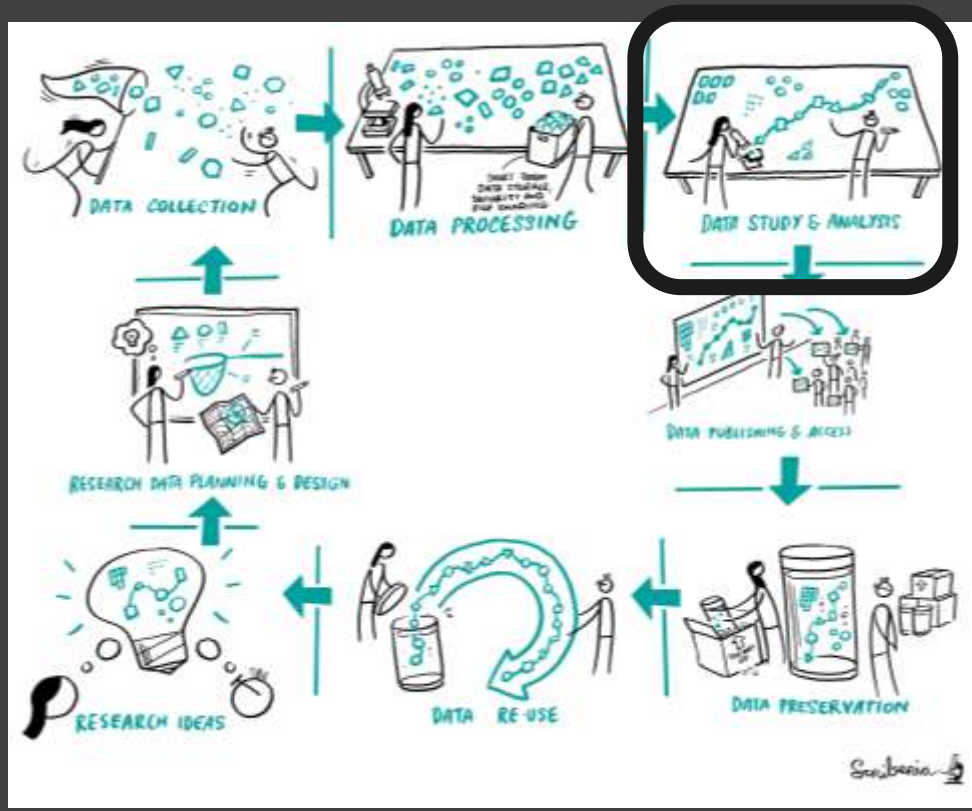

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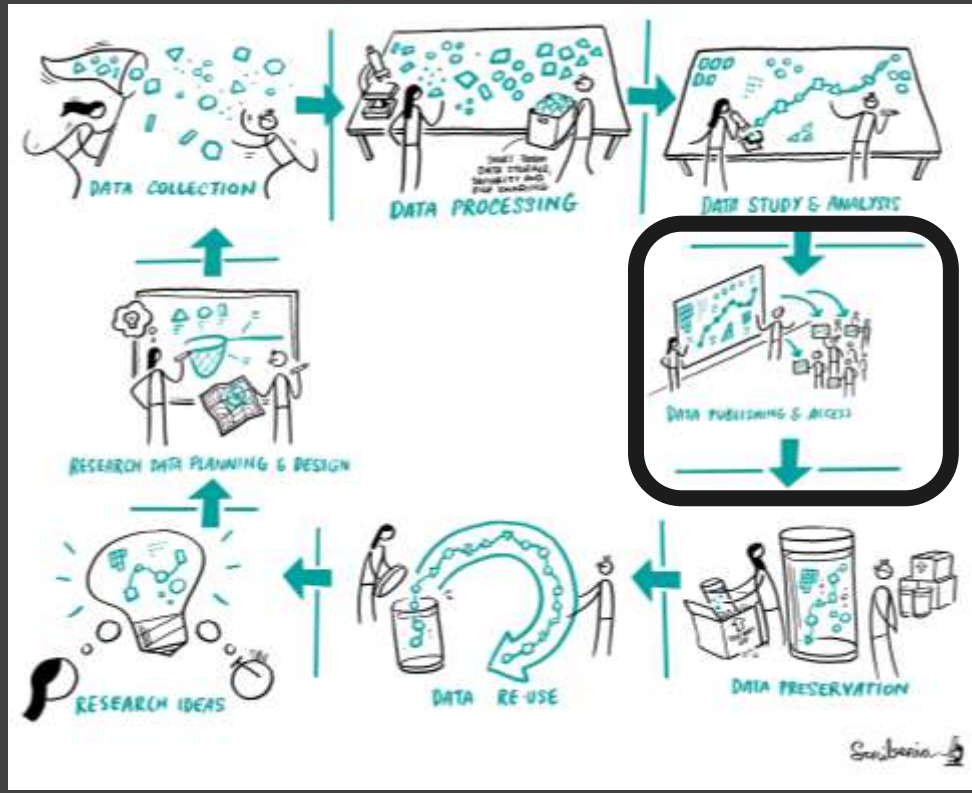

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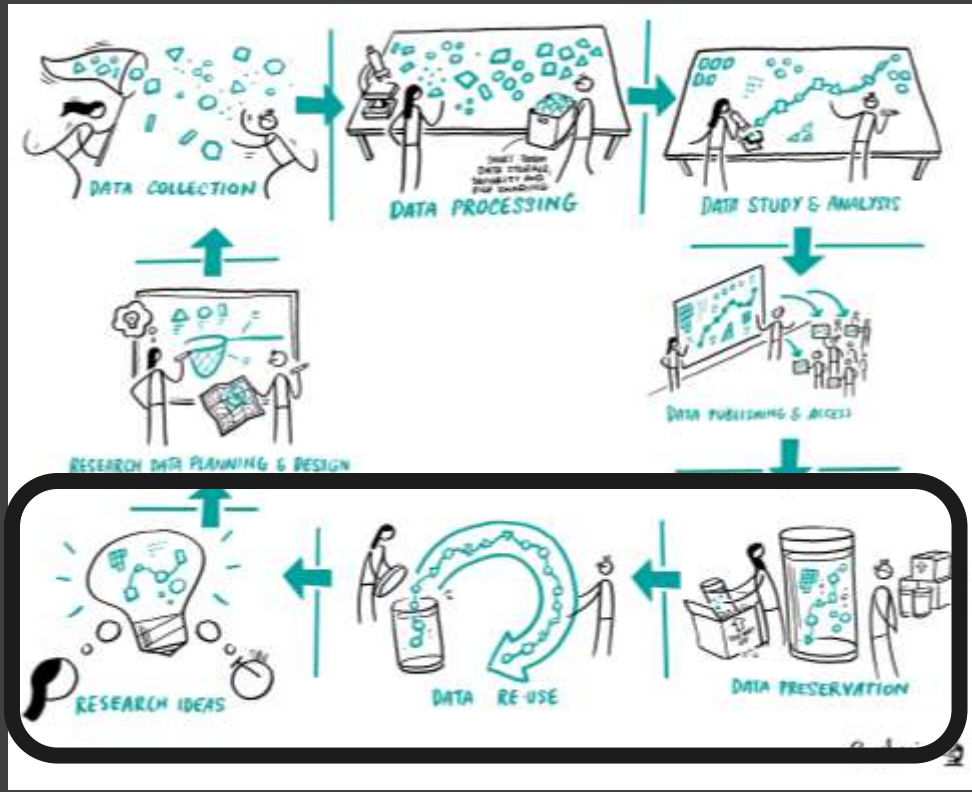

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Embrace diversity

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Thought experiment

What will you do if your model isn’t exactly what you’ve preregistered?

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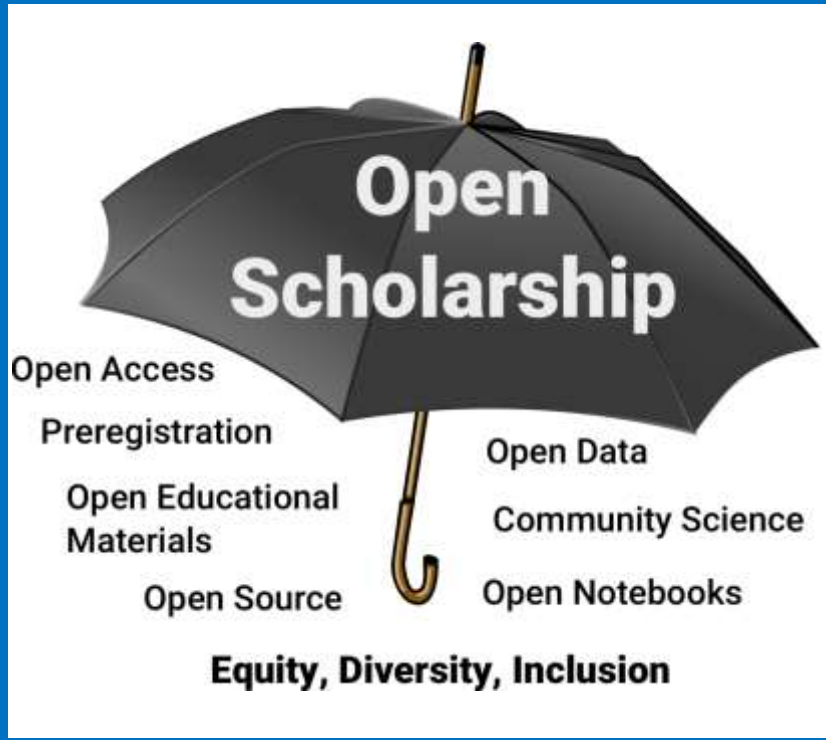
Preregistration is one of the ways we can improve research transparency and validity.



Whitaker & Guest, 2020; derived from Robinson, 2018, Itself adapted from Berlin Open Science Meetup.
https://osaos.codeforscience.org/what-is-open

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Whose voices are missing?

- In this workshop
- In your lab or friend group
- At open science events

https://thepsychologist.bps.org.uk/volume-33/november-2020/bropenscience-broken-science

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Thank you Berna, Danielle, Iris, and Olivia

- Devezer, B, Navarro, DJ, Vandekerckhove, J, & Buzbas, EO (2020). The case for formal methodology in scientific reform. BioRxiv. https://doi.org/10.1101/2020.04.26.048306
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- Guest, O, & Martin, AE (2020). How computational modeling can force theory building in psychological science. https://doi.org/10.31234/osf.io/rybh9
- Cooper, RP, & Guest, O (2014). Implementations are not specifications: Specification, replication and experimentation in computational cognitive modeling. Cognitive Systems Research, 27, 42–49. https://doi.org/10.1016/j.cogsys.2013.05.001

@djnavarro @IrisVanRooij @zerdeve @o_guest @TuringWay @kirstie_j

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Travelling together

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Martina Vilas

“The co-working hours are friendly for introverts who might be intimidated working with new people. These personal interactions are also crucial for staying motivated!”

https://martinagvilas.github.io
@TuringWay @kirstie_j

https://the-turing-way.netlify.app/community-handbook/coworking.html

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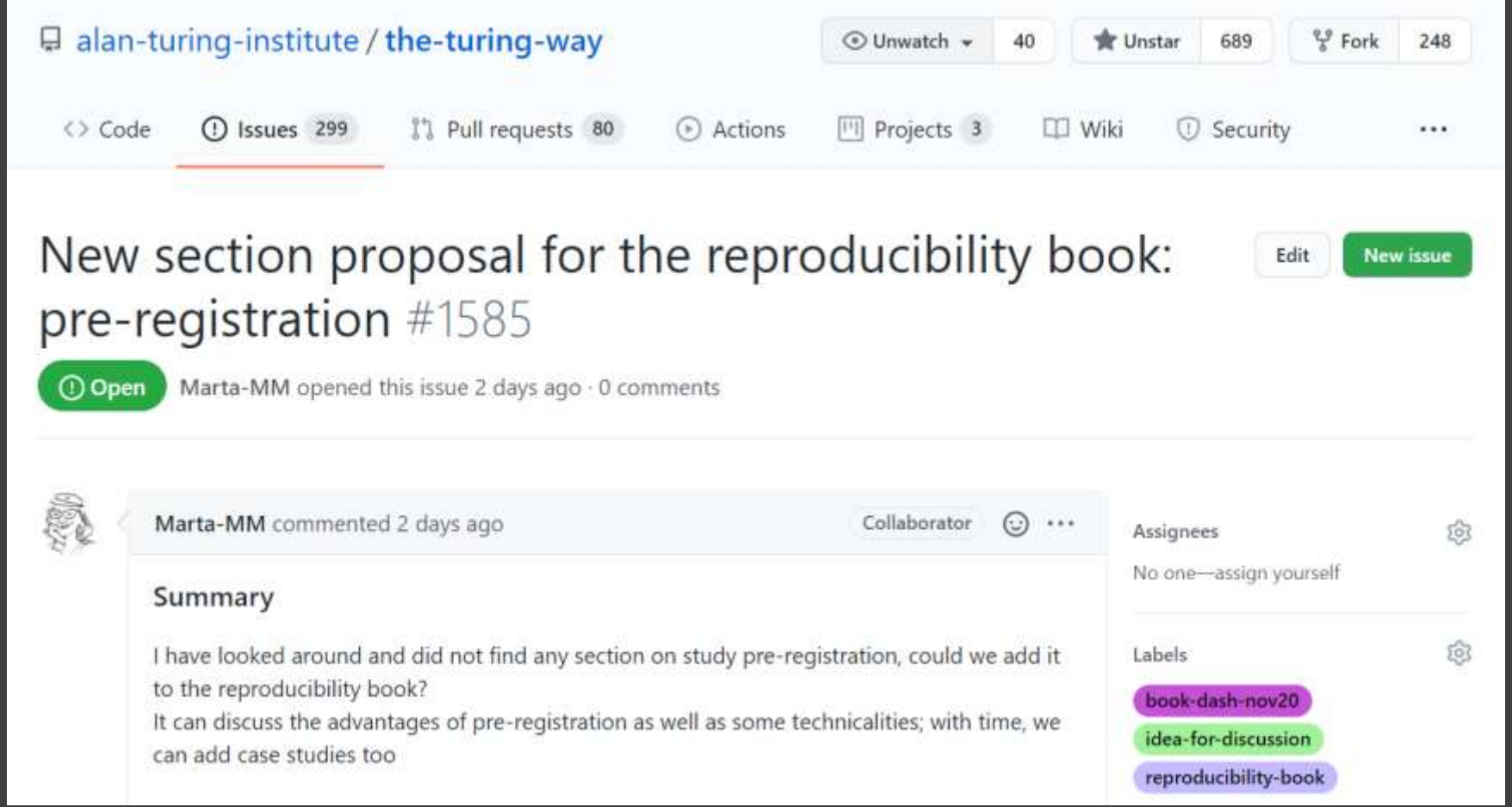

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https://github.com/alan-turing-institute/the-turing-way/issues/1585

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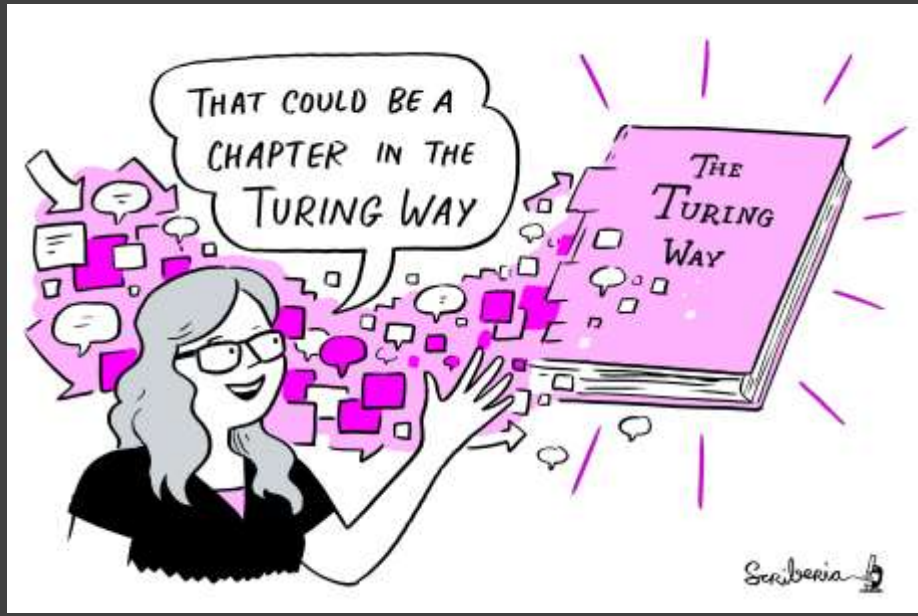
Join us!

- You can help in so many ways!
  - Editing
  - Writing
  - Linking
  - Automating
  - Curating
  - Translating
  - Promoting



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Thank you

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- Newsletter: https://tinyletter.com/TuringWay
- GitHub: https://github.com/alan-turing-institute/the-turing-way
- Slack: https://tinyurl.com/jointuringwayslack
- Next Collaboration Café: 20 January at 3pm UK, 4pm CET
- This work was supported by The UKRI Strategic Priorities Fund under the EPSRC Grant EP/T001569/1, particularly the "Tools, Practices and Systems" theme within that grant, and by The Alan Turing Institute under the EPSRC grant EP/N510129/1. Unsplash photos by Adolfo Felix,Daniil Silantev, James Pond, Kinson Leung, Mateo Vrbnjak, Toa Heftiba, Thomas Q, Waldemar Brandt. Noun Project icons by Aybige, Luis Prado, Edward Boatman, Becris, Rose Alice Design, Hyemm.work. Original artwork by Scriberia: https://doi.org/10.5281/zenodo.3332807

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