The Alan Turing Institute

The Turing Way

Empowering researchers in reproducible, ethical, inclusive and collaborative science

Kirstie Whitaker
Pronouns: she/her

@TuringWay @kirstie_j
https://doi.org/10.5281/zenodo.4944374

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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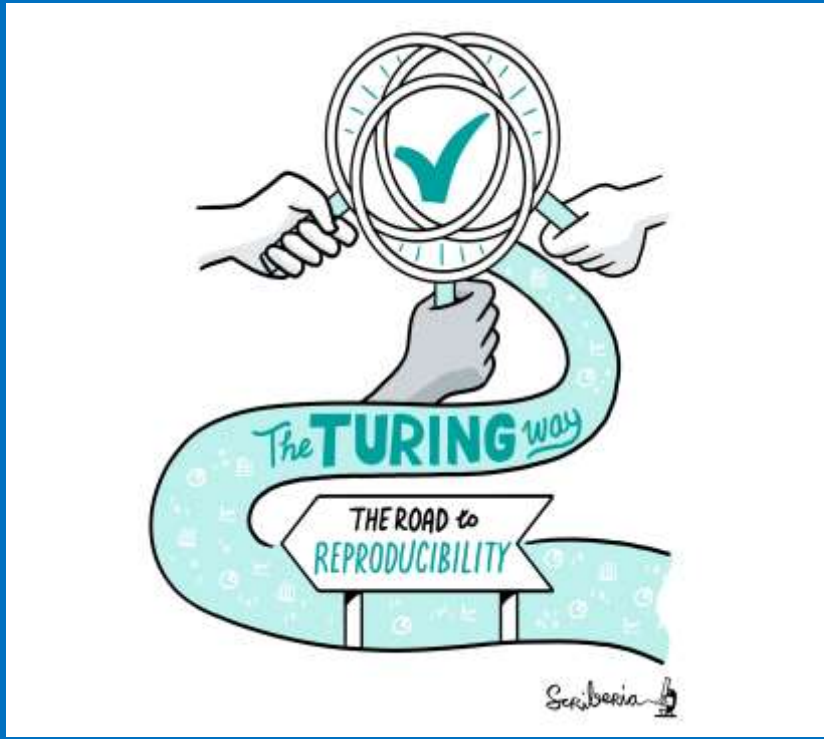
https://doi.org/10.5281/zenodo.4944374

The Turing Way is:

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



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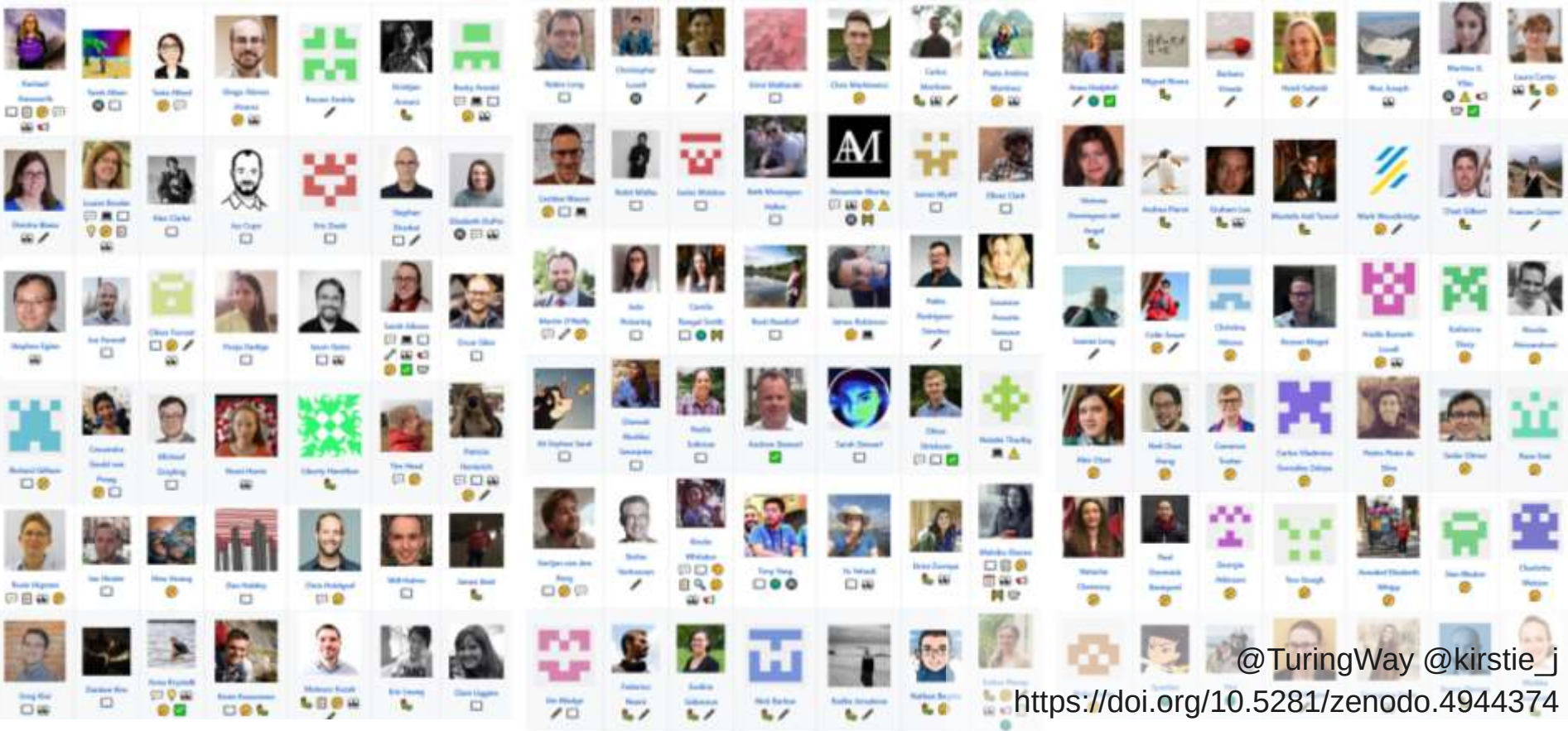
Thank you to our 250+ contributors



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Malvika Sharan

“No one can change research culture on their own. Scaling our community by empowering YOU to participate is how we will change the world.”

https://doi.org/10.5281/zenodo.4536335
https://foss-backstage.de/session/building-culture-collaboration-open-source-communities-turing-way

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Picture credit: Chris Gorgolewski
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Our human needs are what makes reproducibility so challenging to implement

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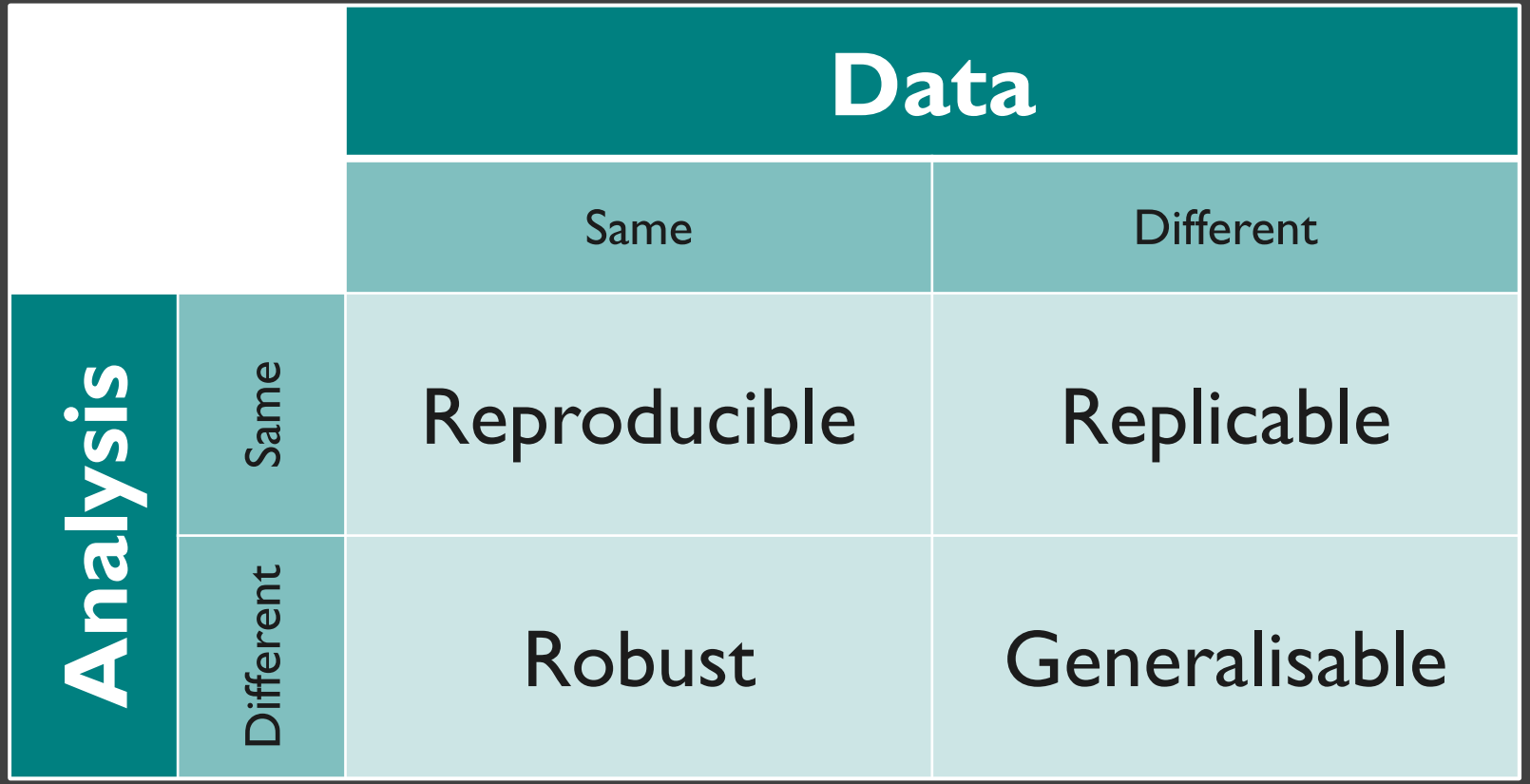

https://the-turing-way.netlify.app/reproducible-research/overview/overview-definitions.html

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Barriers to reproducible research

Held to higher standards than others

Is not considered for promotion

Publication bias towards novel findings

Requires additional skills and a change of mindset

Plead the 5th

Takes time

Support additional users

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

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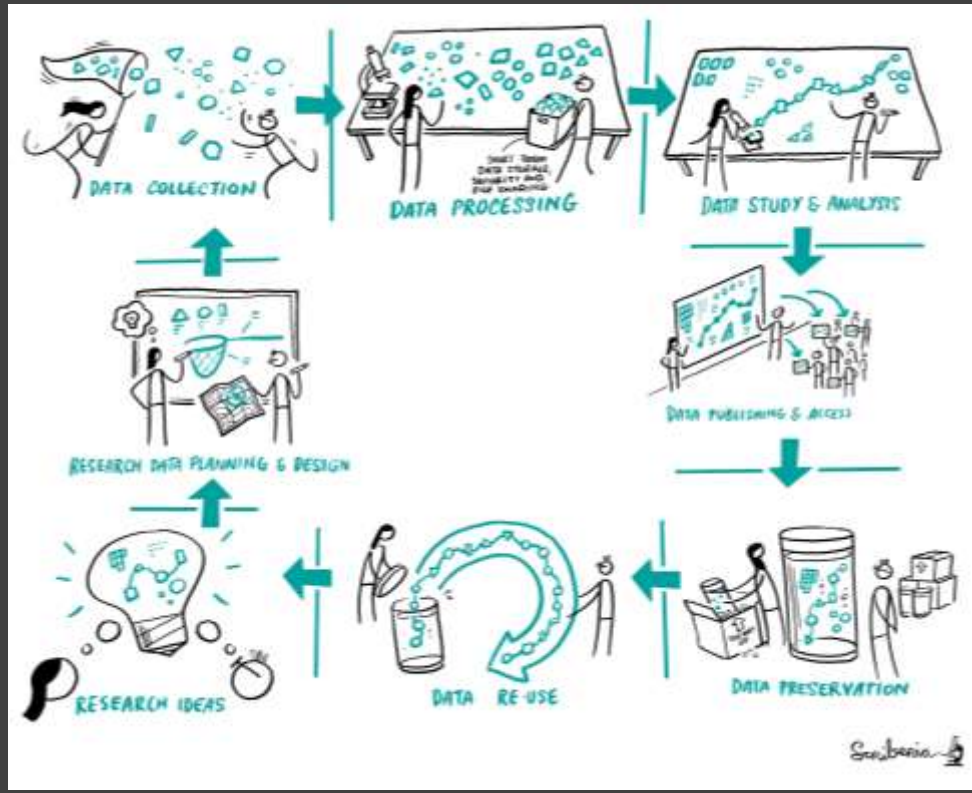
To be fully reproducible we have to cover all the steps of the research cycle

And that is super overwhelming…but we're here to help



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The Turing Way

Search this book...

Welcome

Guide for Reproducible Research

Overview

Open Research

Version Control

Licensing

Research Data Management

Reproducible Environments

BinderHub

Code quality

Code Testing

Code Reviewing Process

Continuous Integration

Reproducible Research with Make

Research Compendia

Credit for Reproducible Research

Risk Assessment

Case Studies

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.

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Version control

Research data management

Reproducible environments

Code testing

Continuous integration

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Becky Arnold

“There are a lot of things you need to know before you can jump into continuous integration.

Version control is a prerequisite for pretty much everything.”

https://software.ac.uk/about/fellows/becky-arnold
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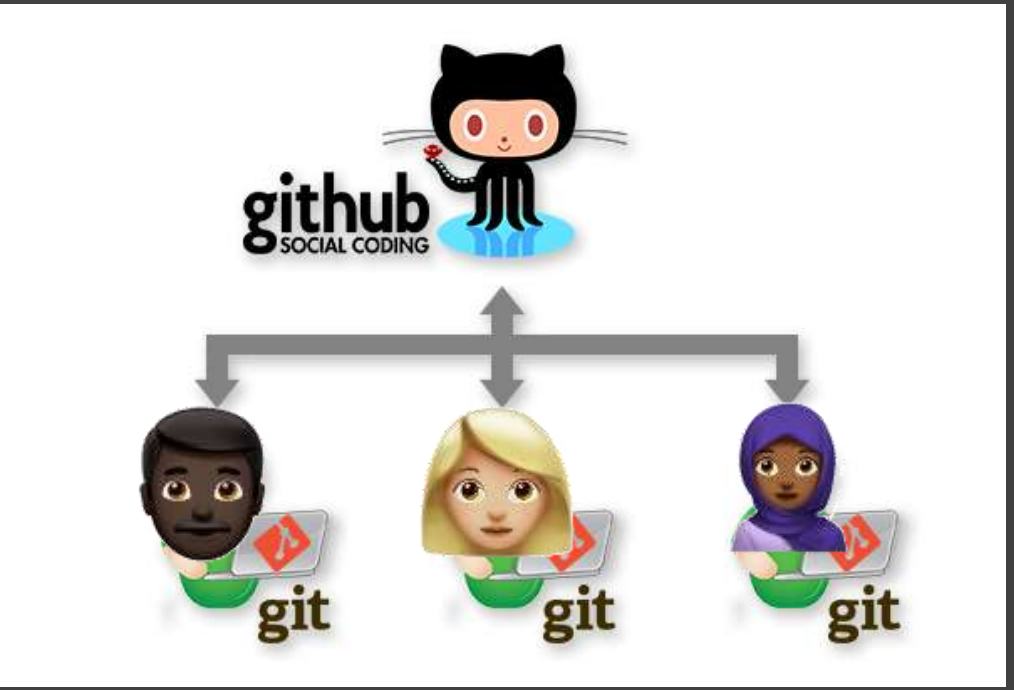

https://the-turing-way.netlify.app/collaboration/github-novice.html
https://the-turing-way.netlify.com/reproducible-research/vcs.html

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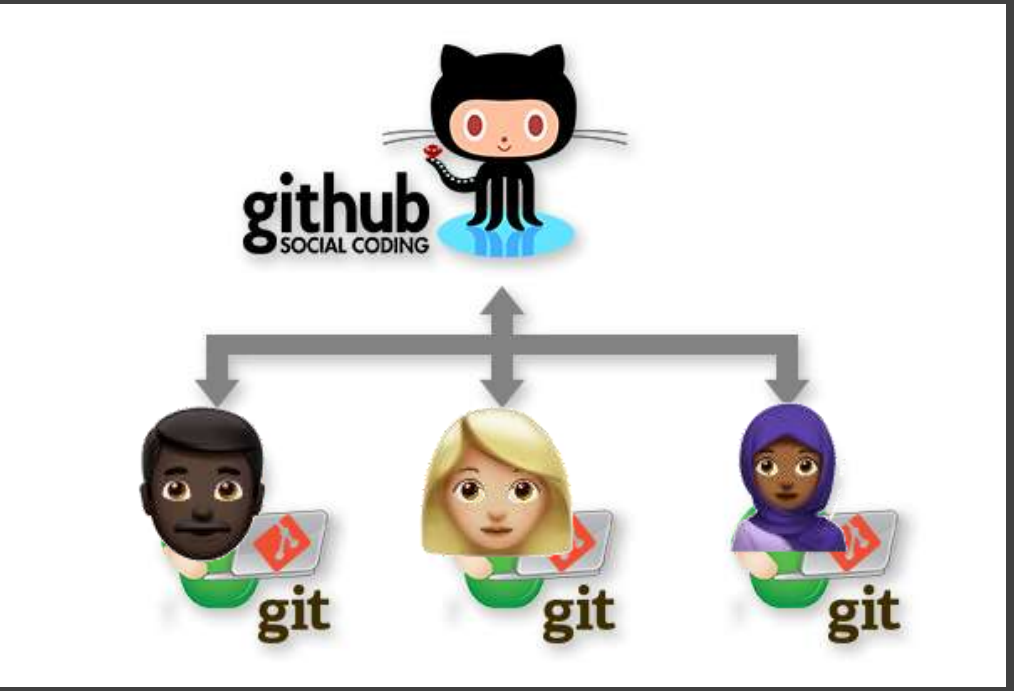

https://the-turing-way.netlify.app/collaboration/github-novice.html
https://the-turing-way.netlify.com/reproducible-research/vcs.html
https://neurohackademy.org

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Emma Karoune

“People who use GitHub regularly don’t realise how many words there are that people like me don’t know! It can be really demoralising.”

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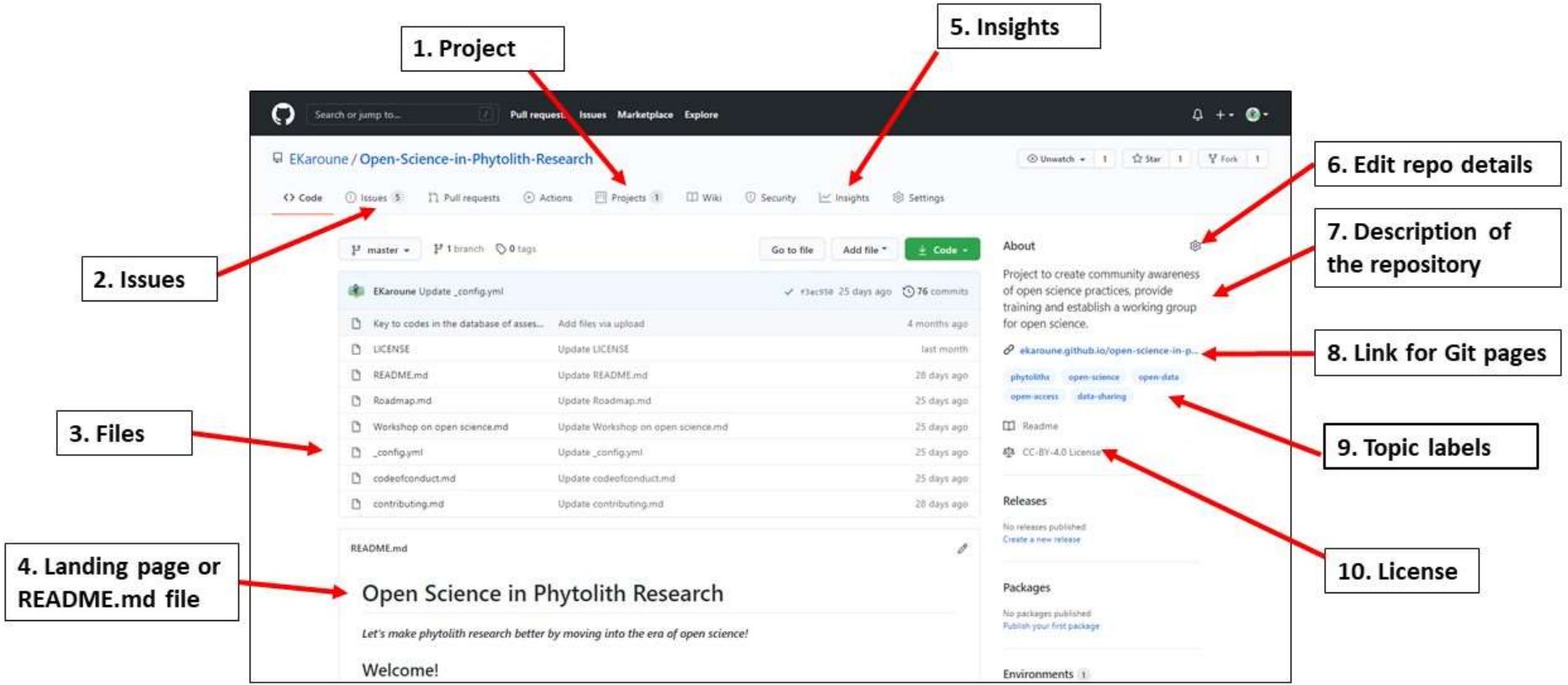

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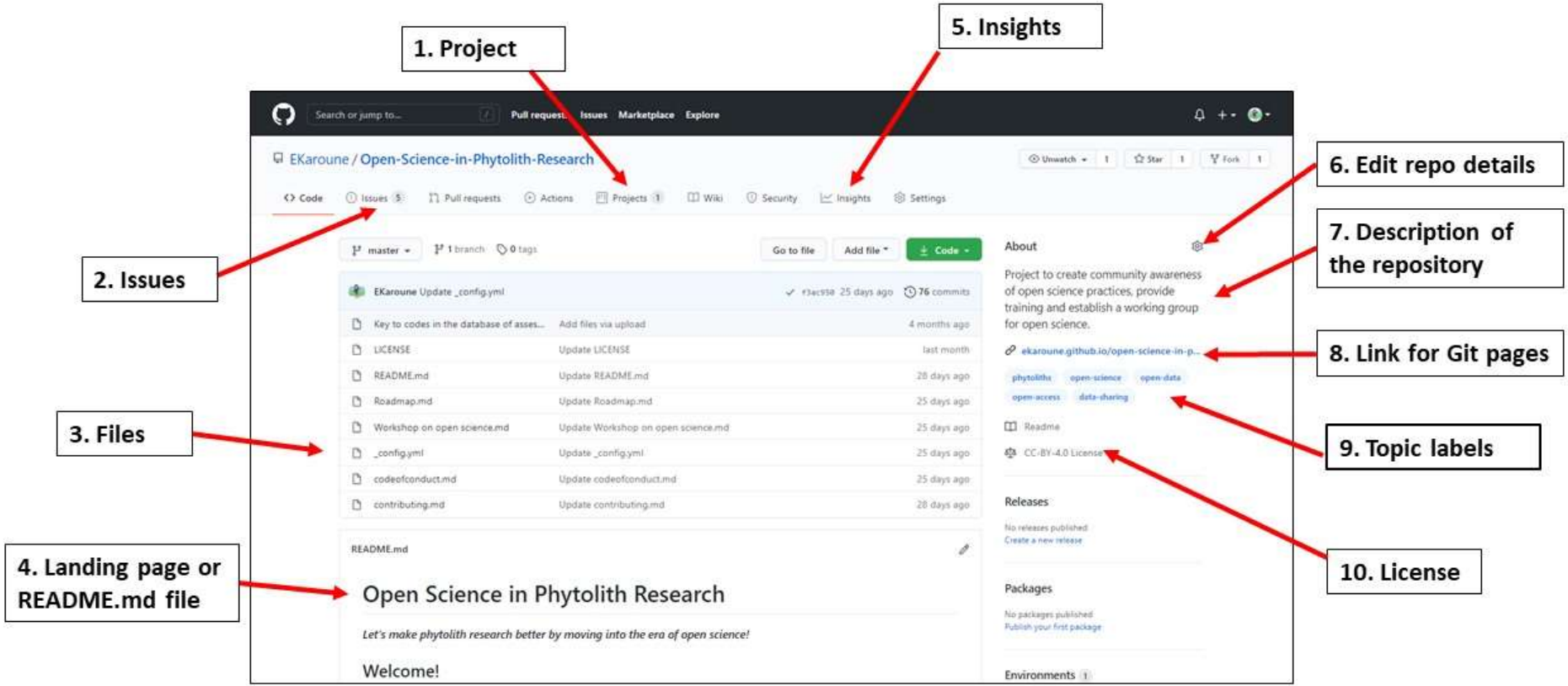

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THERE'S MORE TO
COLLABORATION
THAN YOU MIGHT THINK!
DIFFERENT TEAMS
COMMON GOAL
EXCHANGE OF KNOWLEDGE
PRODUCTION
TREAT EACH OTHER KINDLY
BUILD DIVERSE TEAMS
CODE OF CONDUCT
INCLUSIVE WORKSPACE
EXPLICITELY OPEN FOR CONTRIBUTION
Scribberia

Every project has a culture

- Whose work is valued?
- Who is glue?
- Beware a tyranny of structurelessness

https://noidea.dog/glue
https://www.wired.com/story/silicon-valley-tyranny-of-structurelessness/
https://www.jofreeman.com/joreen/tyranny.htm

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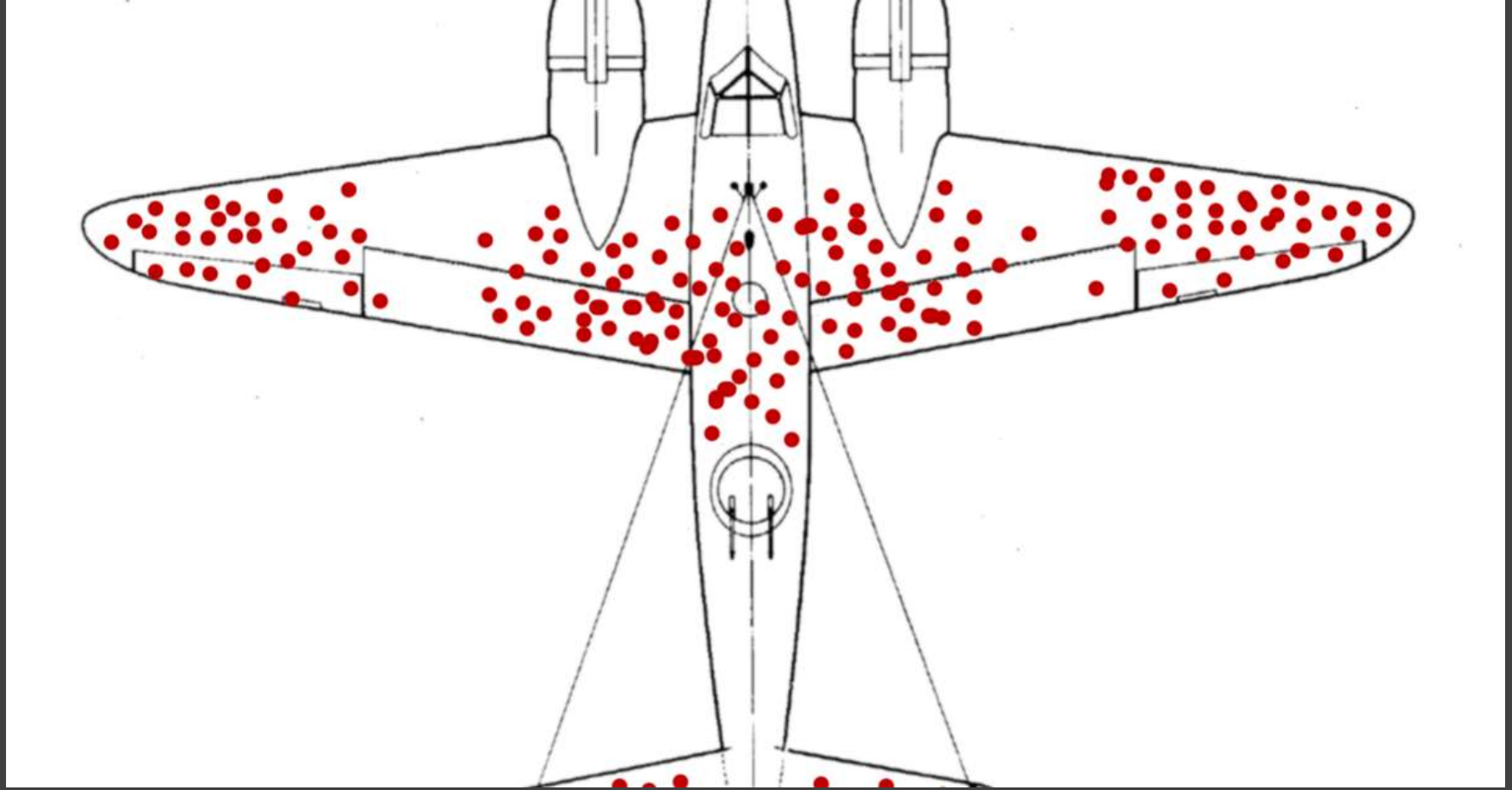

https://medium.com/@penguinpress/an-excerpt-from-how-not-to-be-wrong-by-jordan-ellenberg-664e708cfc3d

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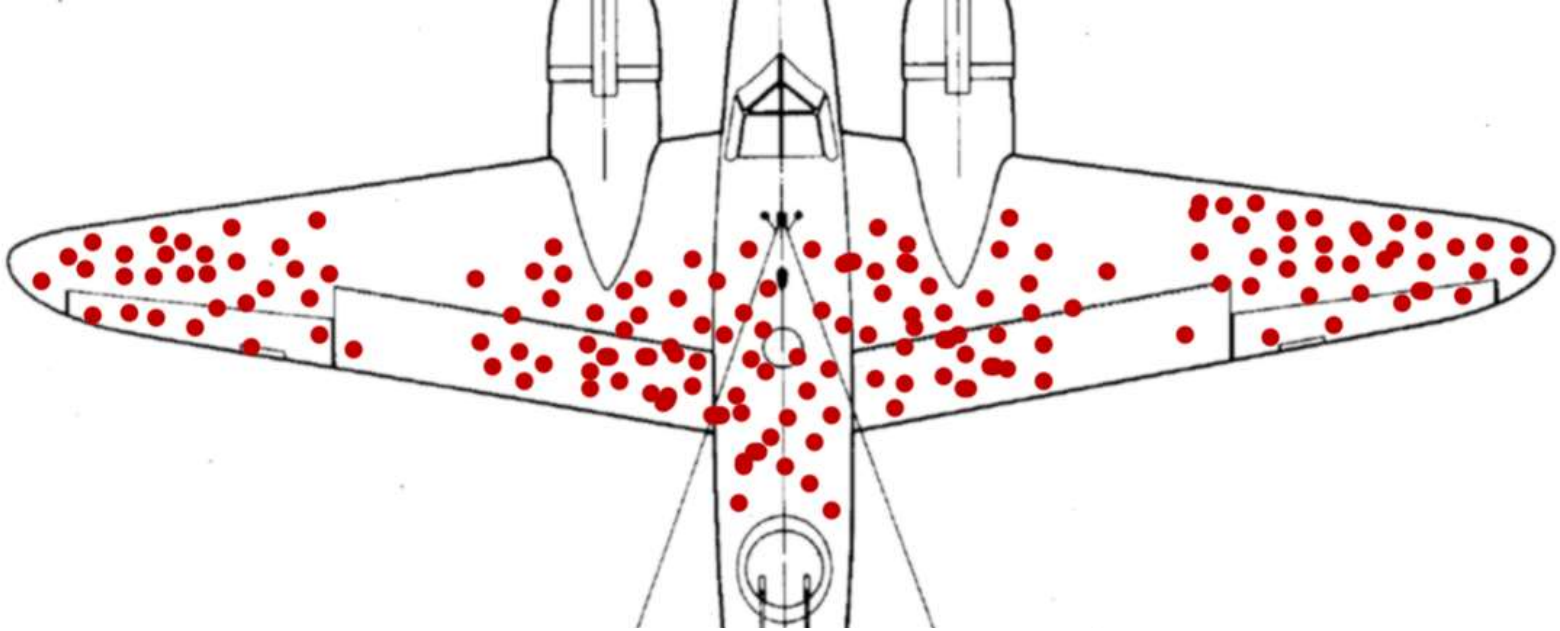
https://doi.org/10.5281/zenodo.4944374



The armor, said Wald, doesn't go where the bullet holes are. It goes where the bullet holes aren't: on the engines.

https://medium.com/@penguinpress/an-excerpt-from-how-not-to-be-wrong-by-jordan-ellenberg-664e708cfc3d

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https://doi.org/10.5281/zenodo.4944374

Whose voices are missing?

- In this room
- In your friend group
- At open source coding events

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

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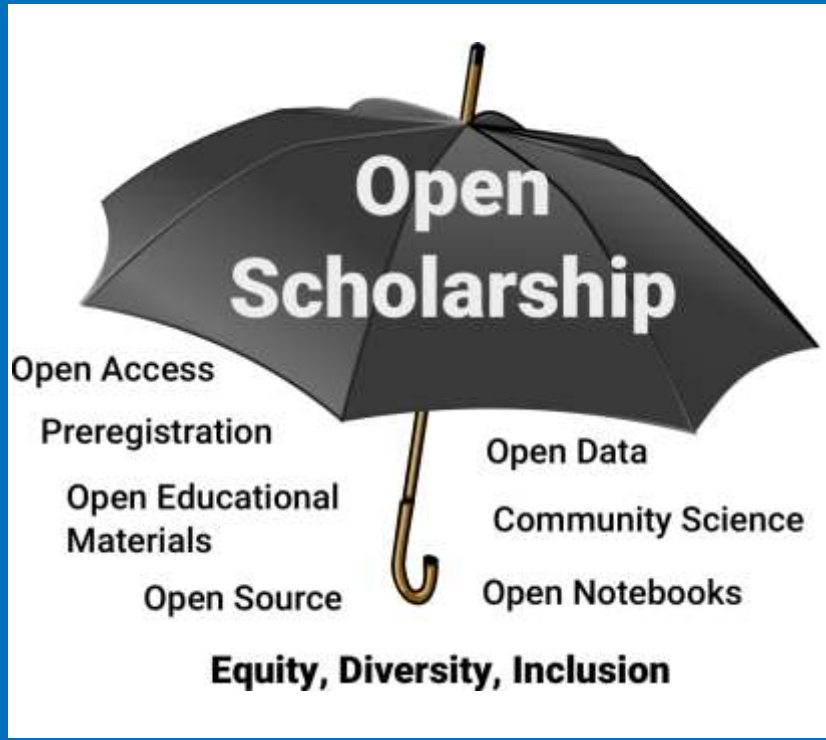
There are many different definitions of “open”.

The purpose of open should be built upon equity, diversity and inclusion.



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

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Our community management materials are all openly available:

- Code of conduct
- Style guide
- Acknowledging contributors
- Event templates

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

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Our community management materials are all openly available and always evolving:

- Pathways to getting involved
- Governance and decision making

https://github.com/alan-turing-institute/the-turing-way/issues/1732

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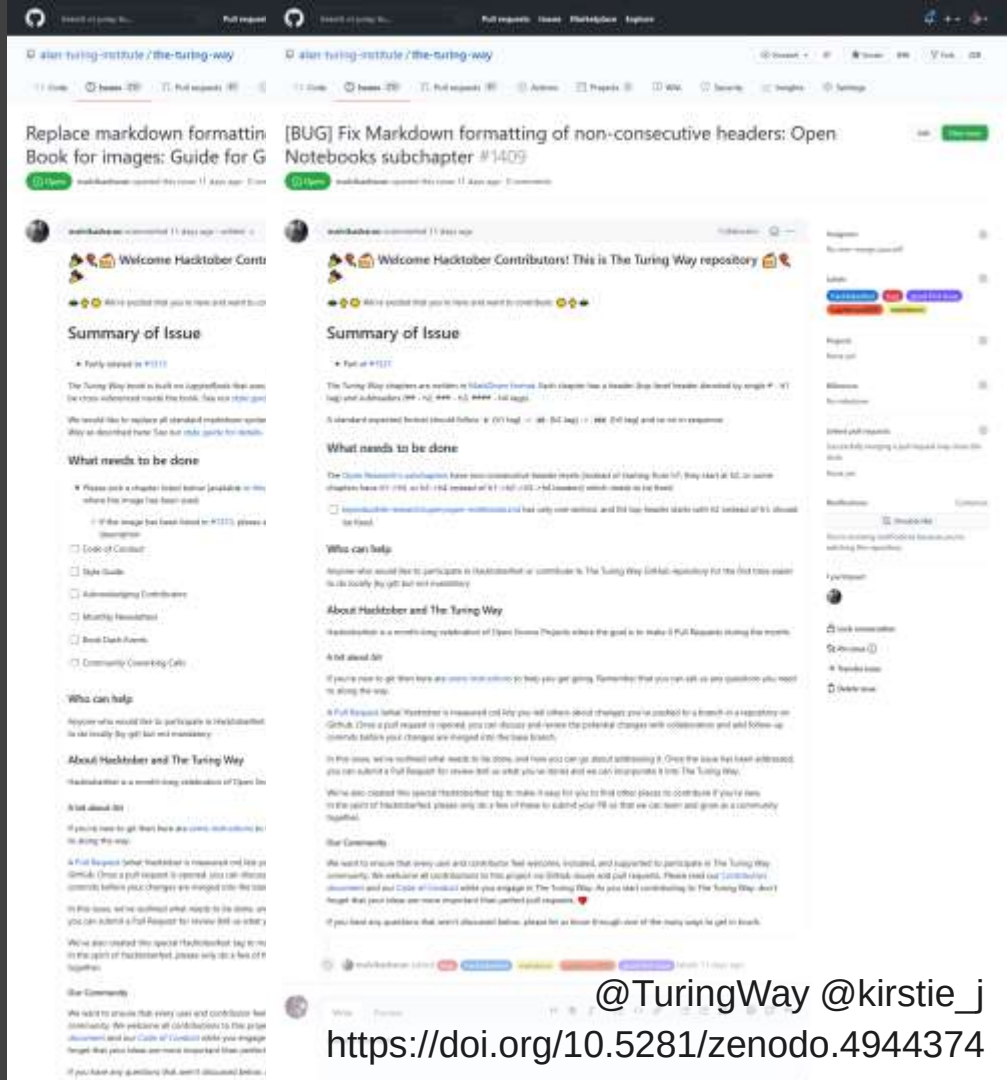
– A good first issue should take longer to write than it does to fix
– The goal is to welcome people more than “just” to fix the bug



https://github.com/alan-turing-institute/the-turing-way/issues/1409 & issues/1414

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Paul Owoicho

“There are lots of distracting formatting inconsistencies in the book that I can turn into ‘good first issues’ for new community members.”

https://developers.google.com/season-of-docs

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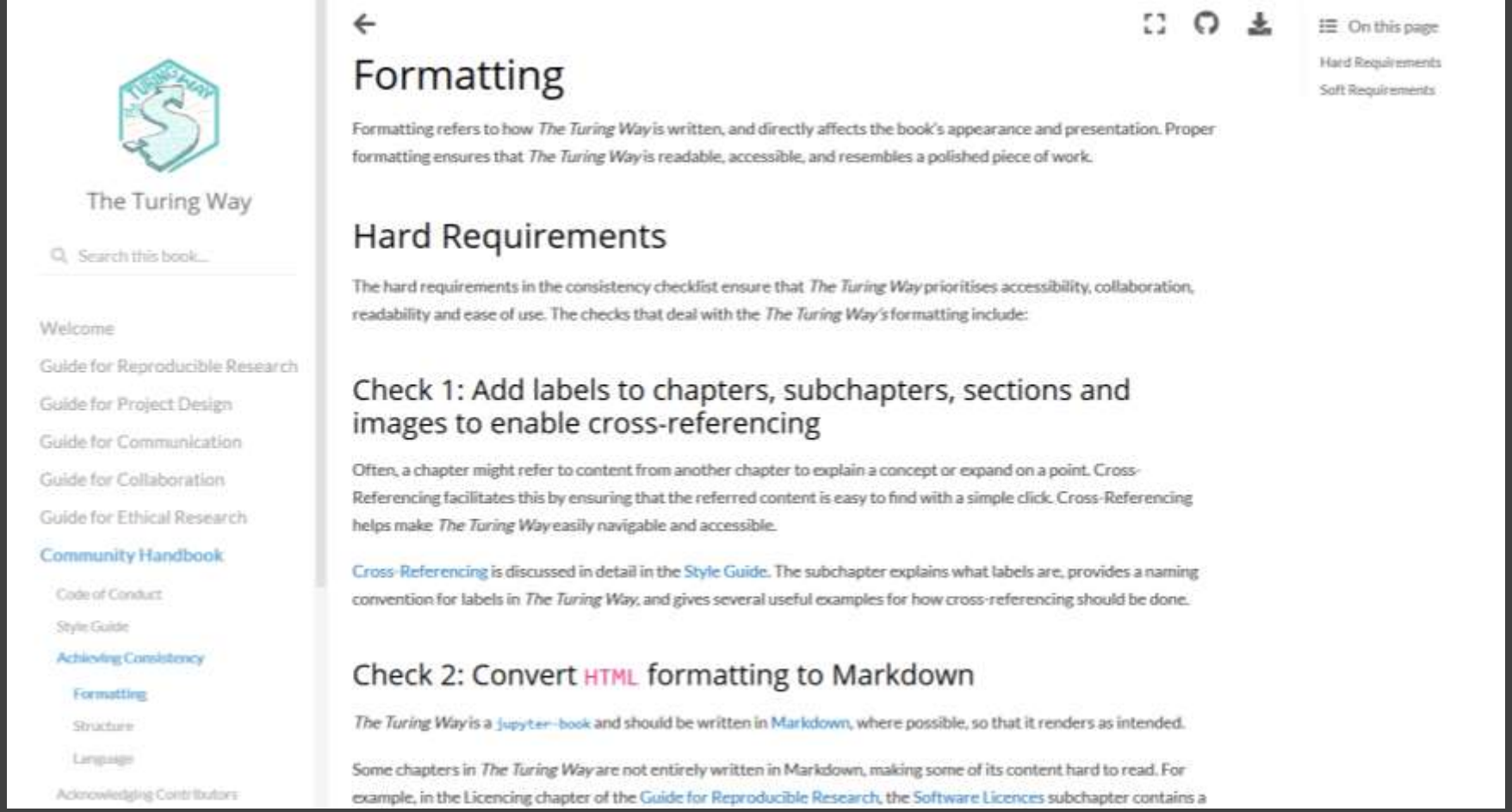

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https://github.com/alan-turing-institute/the-turing-way/pull/1459

https://doi.org/10.5281/zenodo.4944374

Collaboration cafes

- 1st and 3rd Wednesdays of each month
- All remote participation
  - Zoom call
  - Pomodoro technique
  - Breakout rooms for mentored contributions
- Everyone welcome

https://github.com/alan-turing-institute/the-turing-way/blob/master/project_management/online-collaboration-cafe.md

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https://doi.org/10.5281/zenodo.4944374

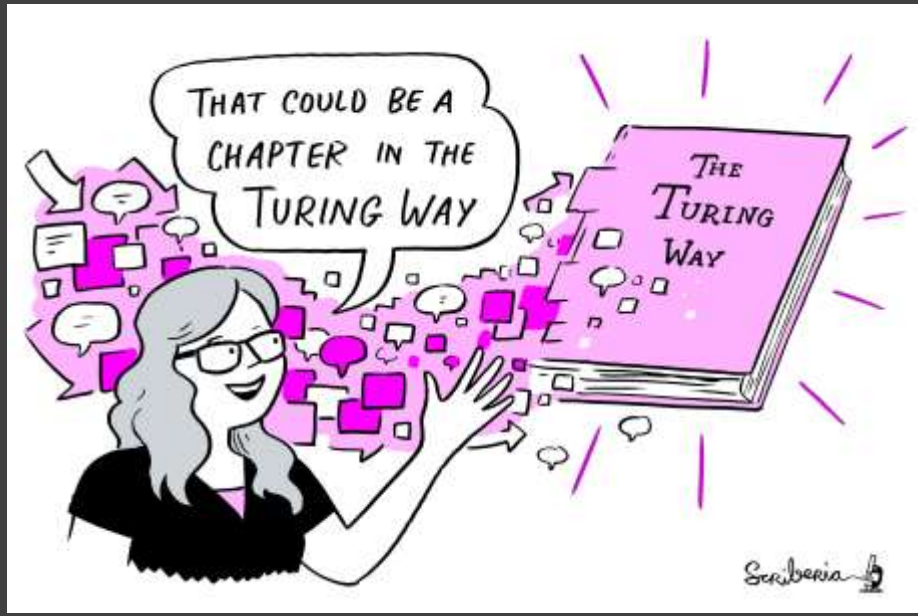
Martina Vilas

“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://doi.org/10.5281/zenodo.4944374

Join us!

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



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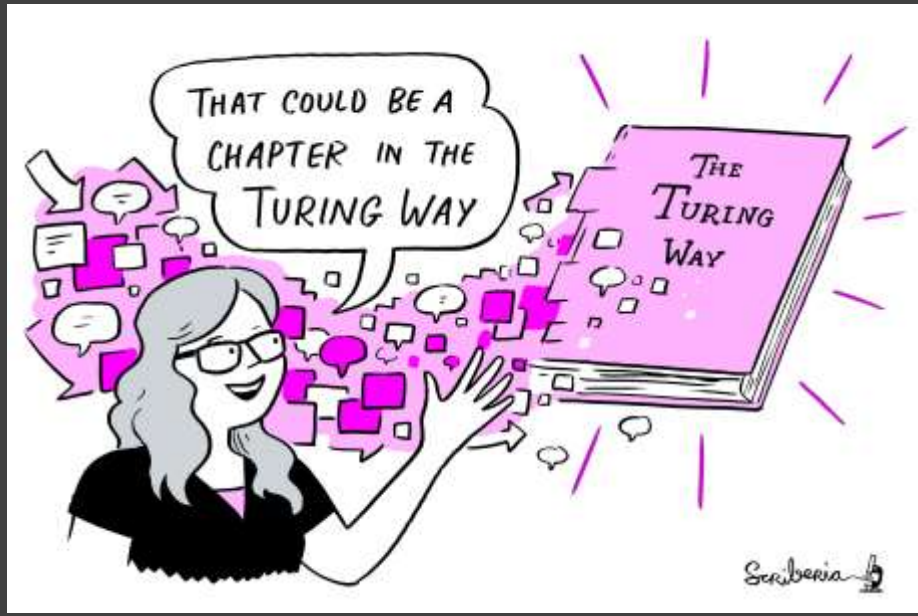
https://github.com/alan-turing-institute/the-turing-way/issues/1712

https://doi.org/10.5281/zenodo.4944374

Join us!

- You can help in so many ways!
- Collaboration cafés twice per month, co-working sessions every week



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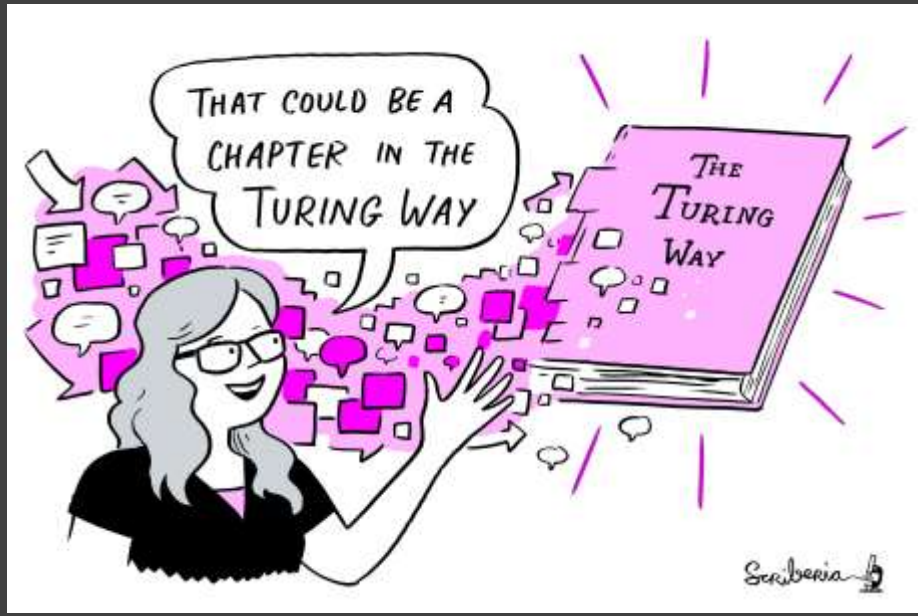
Join us!

- You can help in so many ways!
- Collaboration cafés twice per month, co-working sessions every week
- Use any of these skills. Do high quality work. You are changing the world with every bug fix.



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- If you are not kind to yourself, you can not be kind to others
- And if you are not kind, none of the other stuff matters

#GrootGif
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Spectacular card from Elizabeth DuPre

Thank you

The Alan Turing Institute

- Book: https://the-turing-way.netlify.com
- Newsletter: https://tinyletter.com/TuringWay
- GitHub: https://github.com/alan-turing-institute/the-turing-way
- Slack: https://tinyurl.com/jointuringwayslack
- Next Collaboration Café: 16 June at 3pm UK, 10am EST
- Original artwork by Scriberia: https://doi.org/10.5281/zenodo.3332807
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