



UiT The Arctic University of Norway

Are we ready for Open Science?

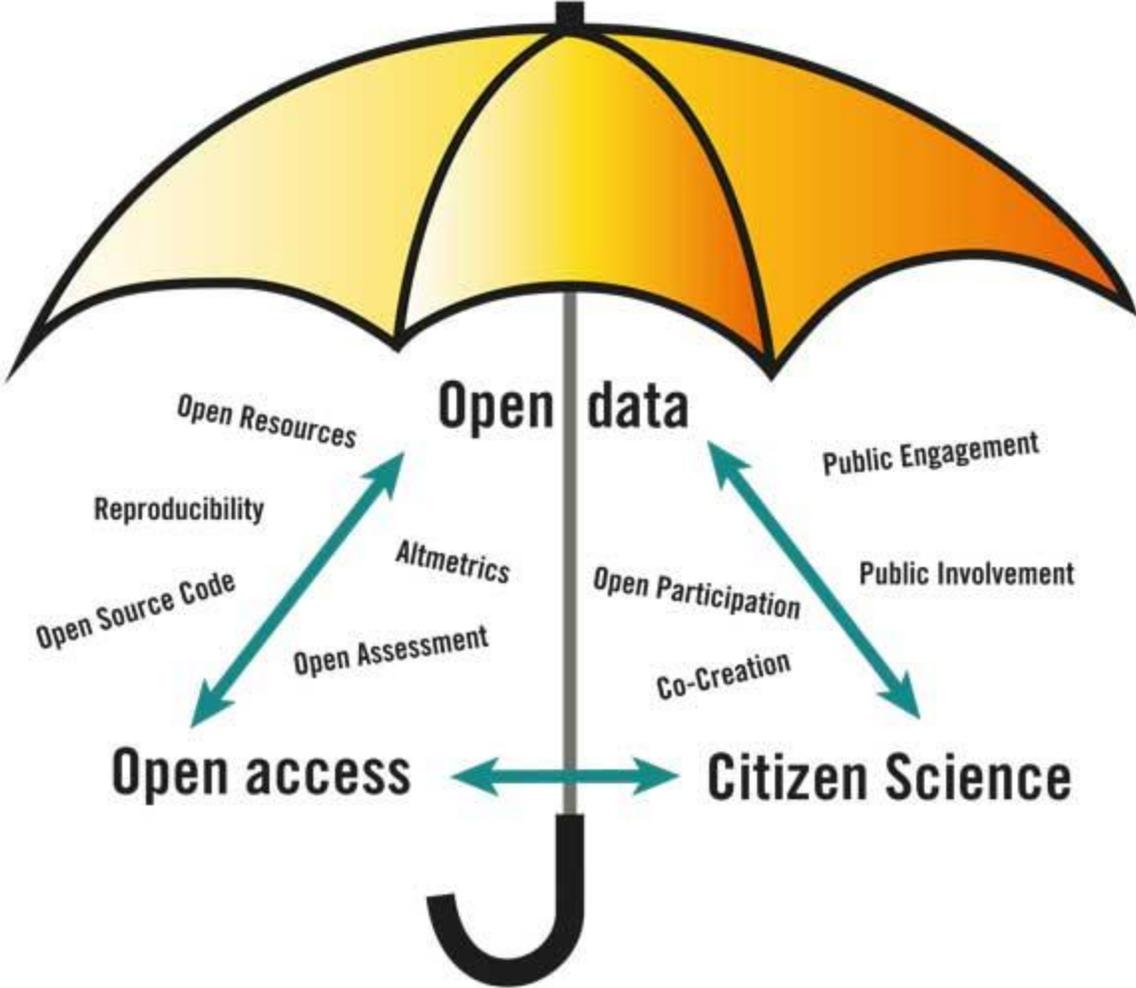
On the spirit is willing, the flesh is weak

Gerit Pfuhl

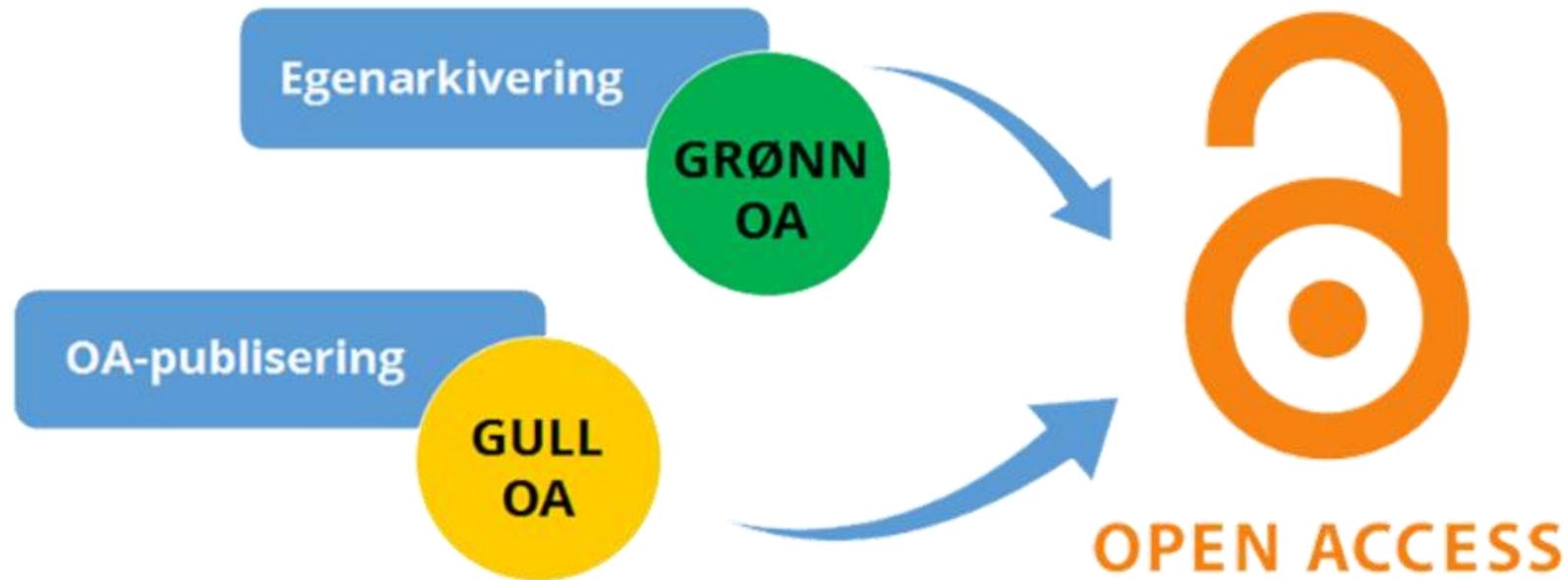
Twitter: [gerit_pfuhl](https://twitter.com/gerit_pfuhl)



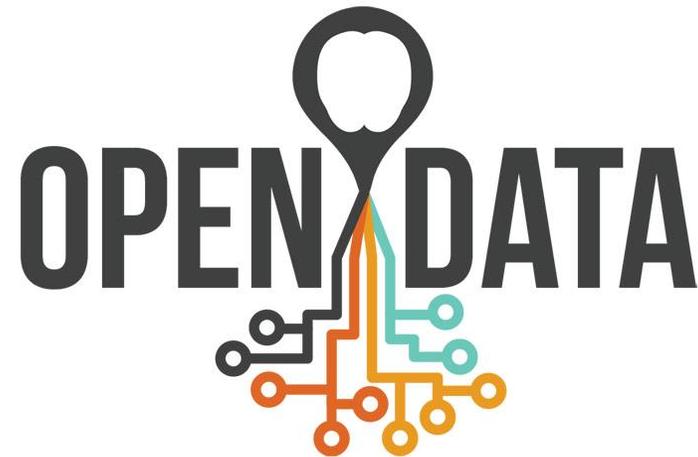
OPEN SCIENCE



OS: Access as in Publishing



OS: Access as in data & software

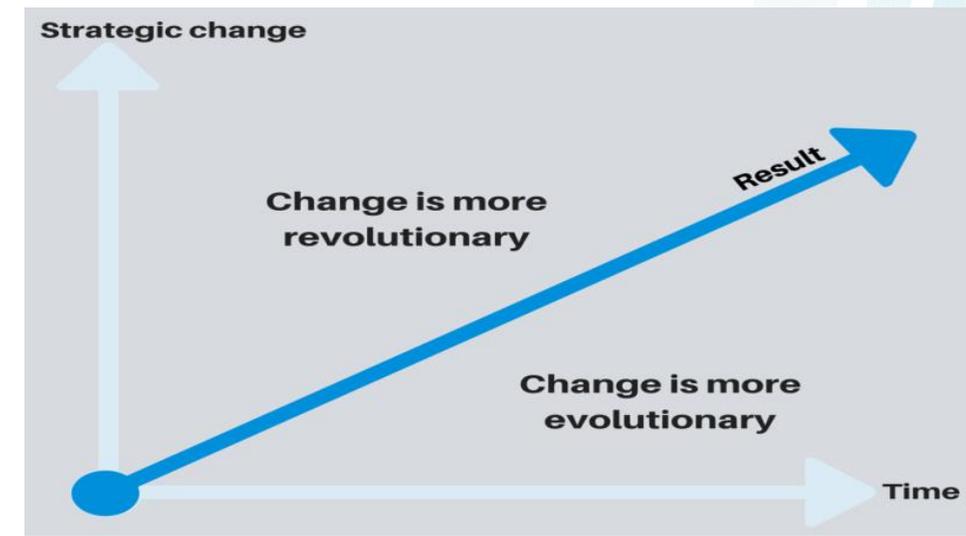
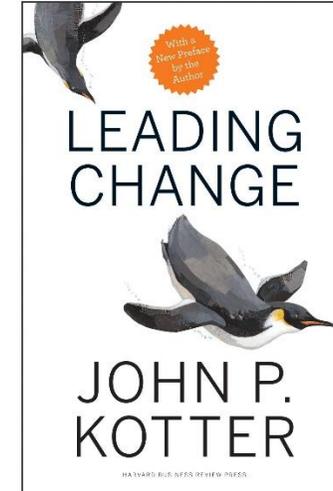


OS: illusory access = Openwashing



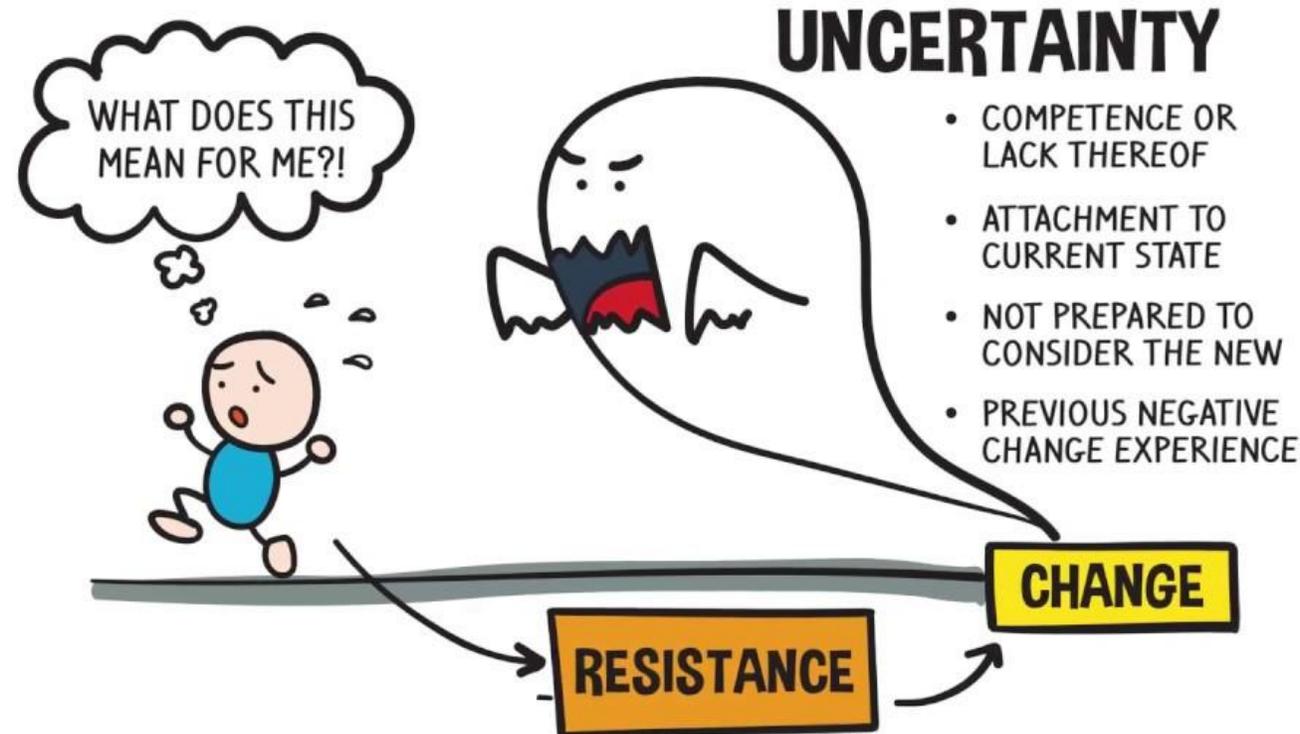
OS movement: evolution or revolution?

1. Create a Sense of Urgency
2. Build a Guiding Coalition
3. Form a strategic Vision & INITIATIVES
4. Enlist a Volunteer Army
5. Enable Action by Removing Barriers
6. Generate Short-Term Wins
7. Sustain Acceleration
8. Institute **Change**



OS: resistance to change

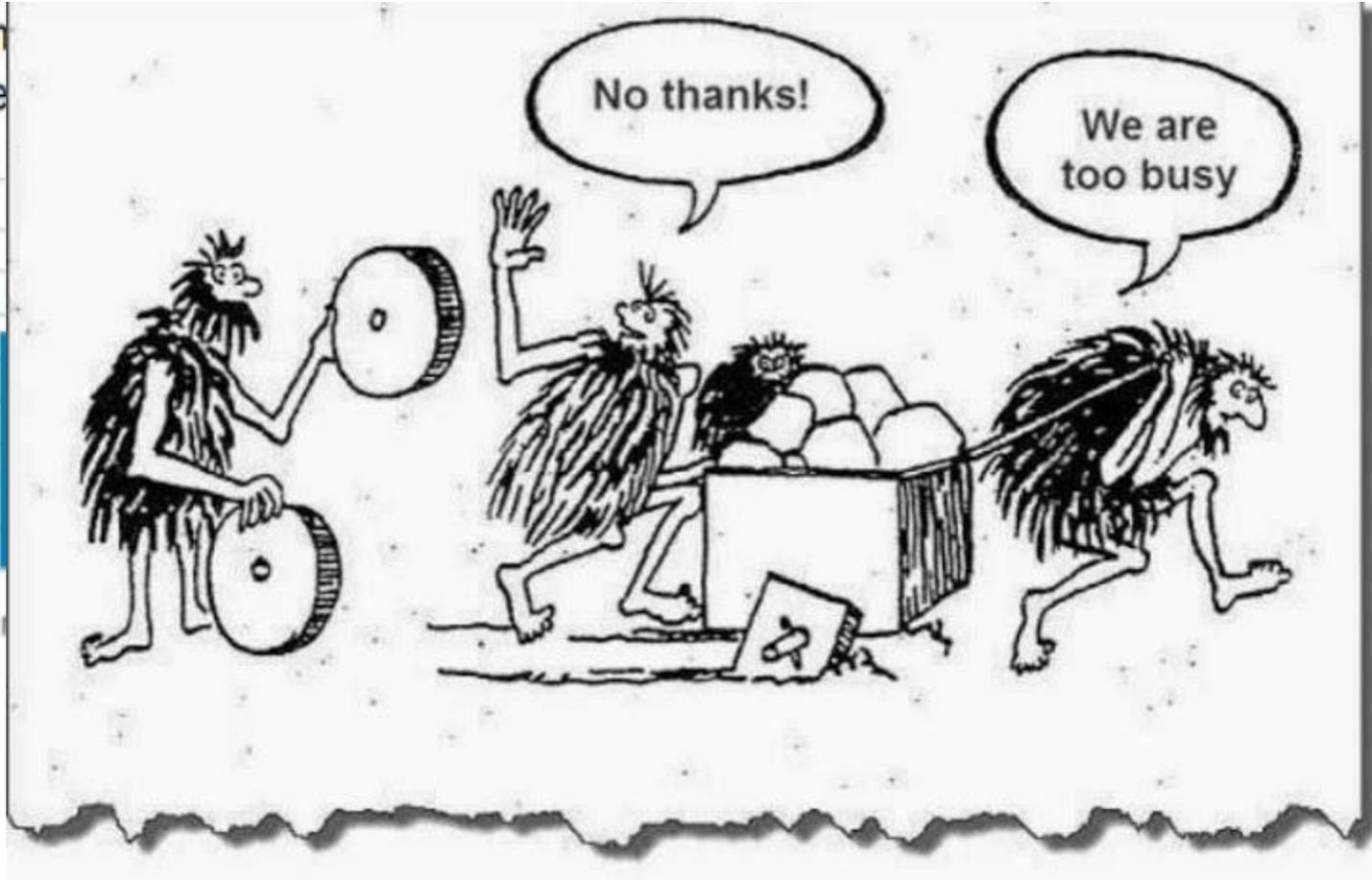
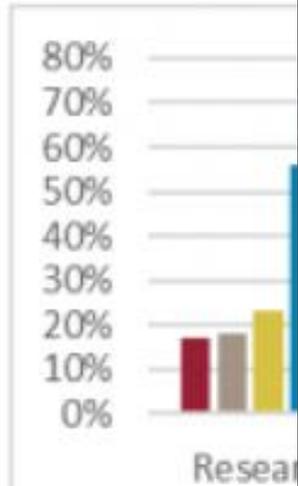
Three Categories
of Resistance



OS: resistance to change



Figure 1.2 Time
time (average



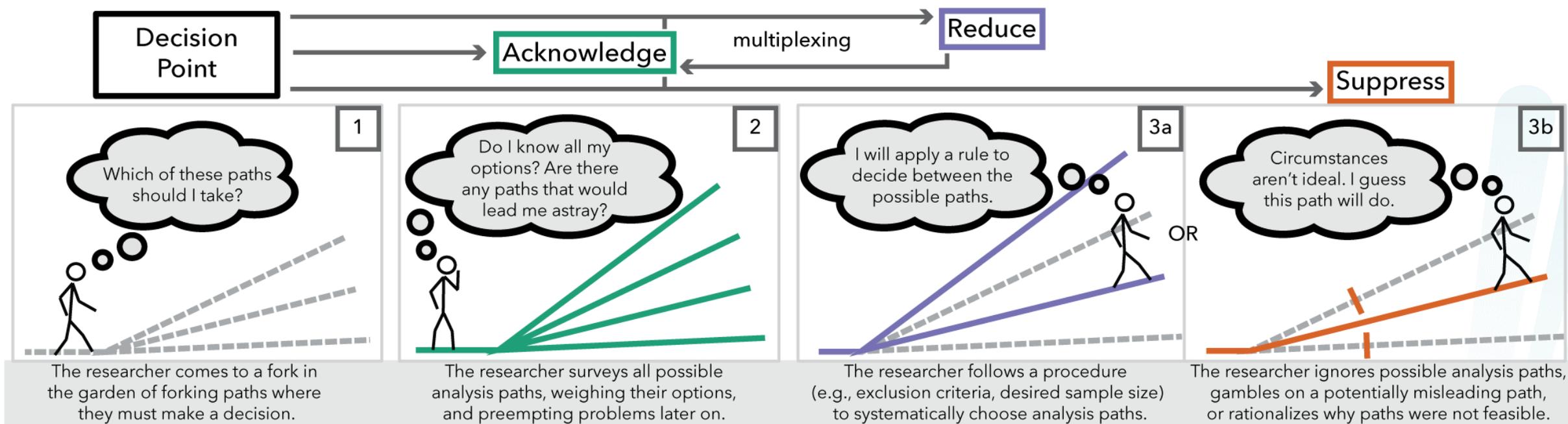
■ Postdoc/Researcher ■ Doctoral candidate

e (feeling):

OS: resistance to change

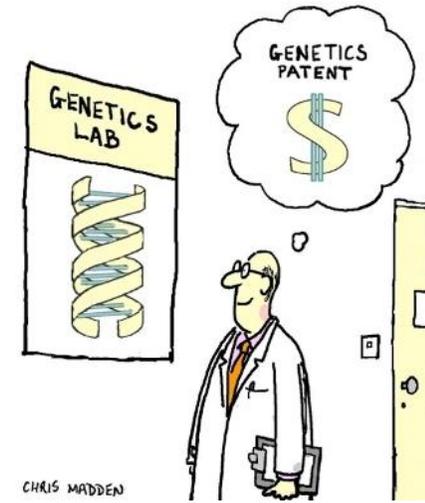


Researcher degree of freedom



OS: Confirmation bias

No culture of FAILURE



Publication bias & lack of data sharing
~92% positive & ~70% failure
Fanelli (2010); Wicherts et al. (2006)

Publish experiment

Specify hypotheses

Lack of replication
1 in 1000 papers
Makel et al. (2012)

HARKing
~50-90% prevalence
John et al. (2012); Kerr (1998)

Design study

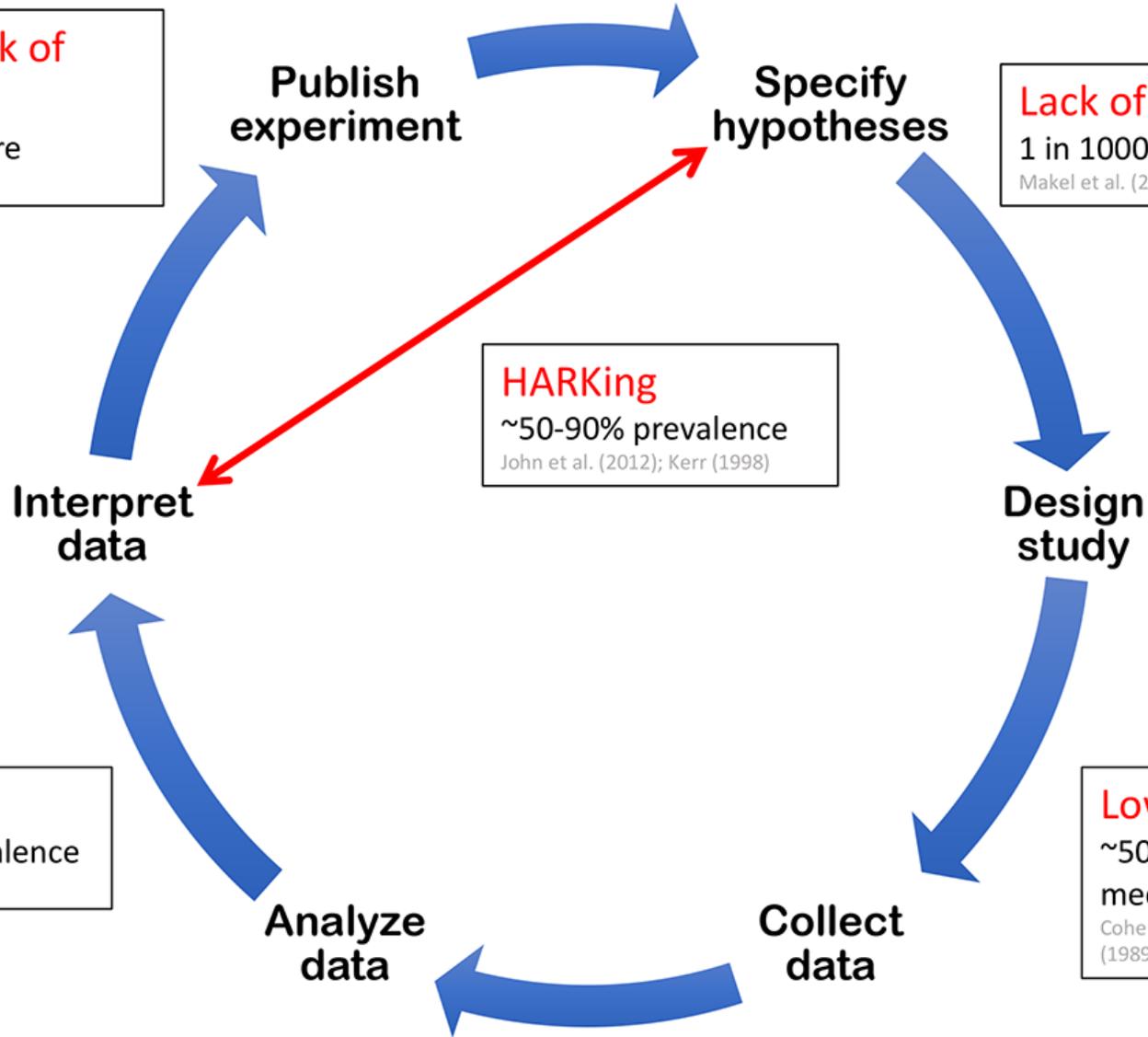
Interpret data

P-hacking
~50-100% prevalence
John et al. (2012)

Analyze data

Collect data

Low statistical power
~50% chance to detect medium effects
Cohen (1962); Sedlmeier & Gigerenzer (1989); Bezeau & Graves (2001)



OS: Culture of Academia

Three Categories
of Resistance

Cultural

Won't work here

Personal

Don't see what's in it for me

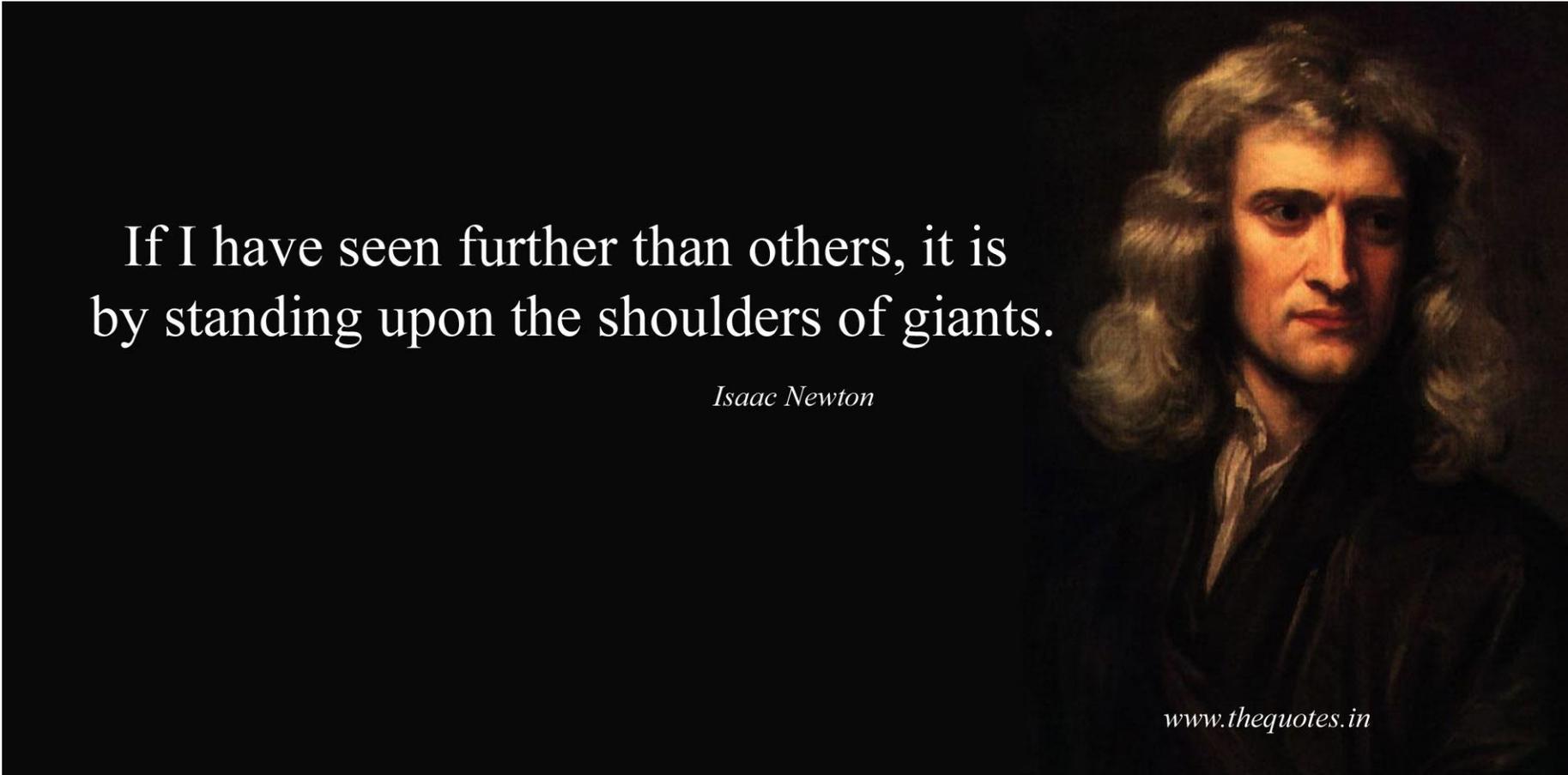
Intellectual

Don't get it

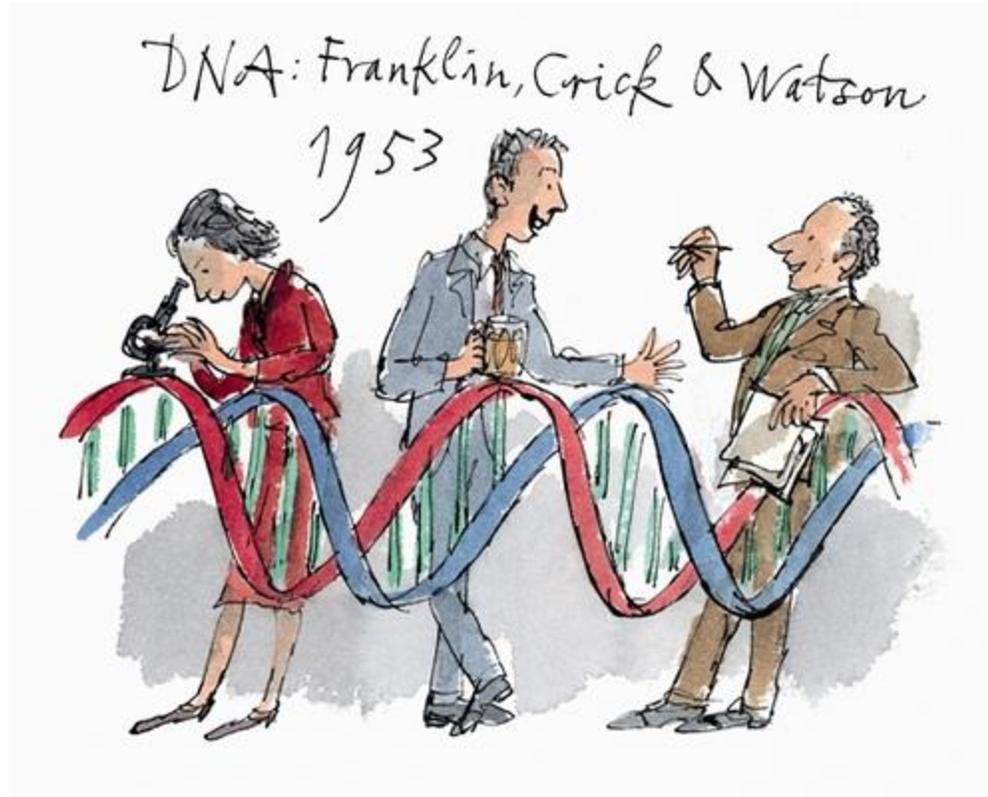
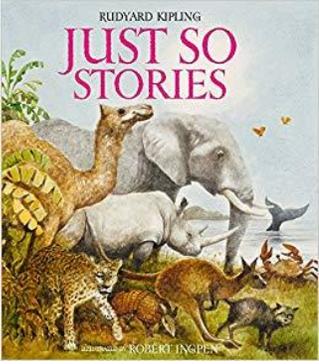
If I have seen further than others, it is
by standing upon the shoulders of giants.

Isaac Newton

www.thequotes.in



OS: Culture of Academia



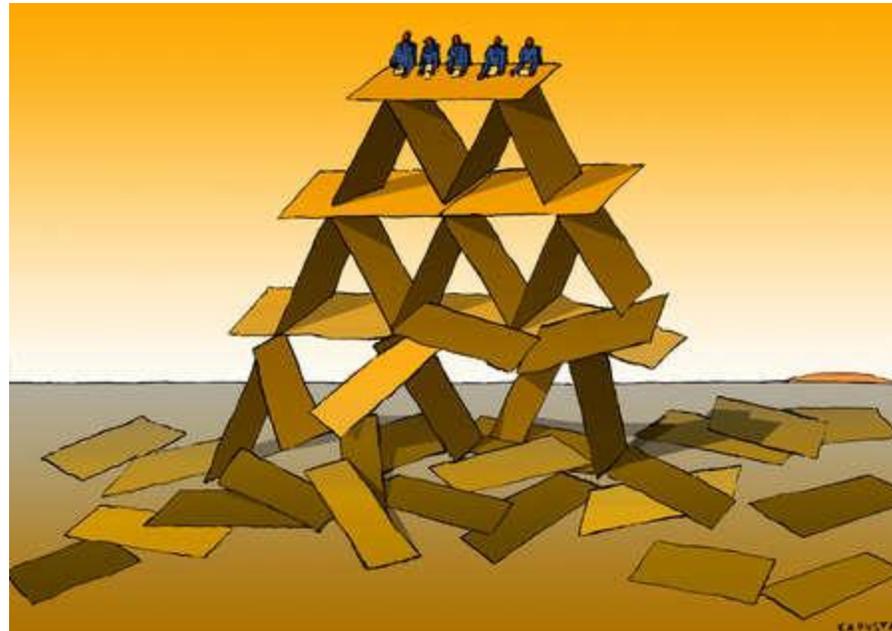
OS: anti-OS incentives



Quality vs. Quantity

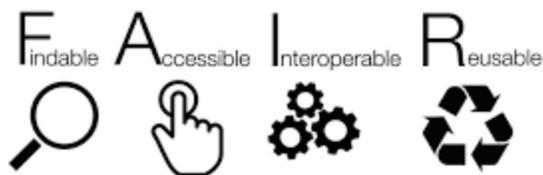


OS: no sense of urgency



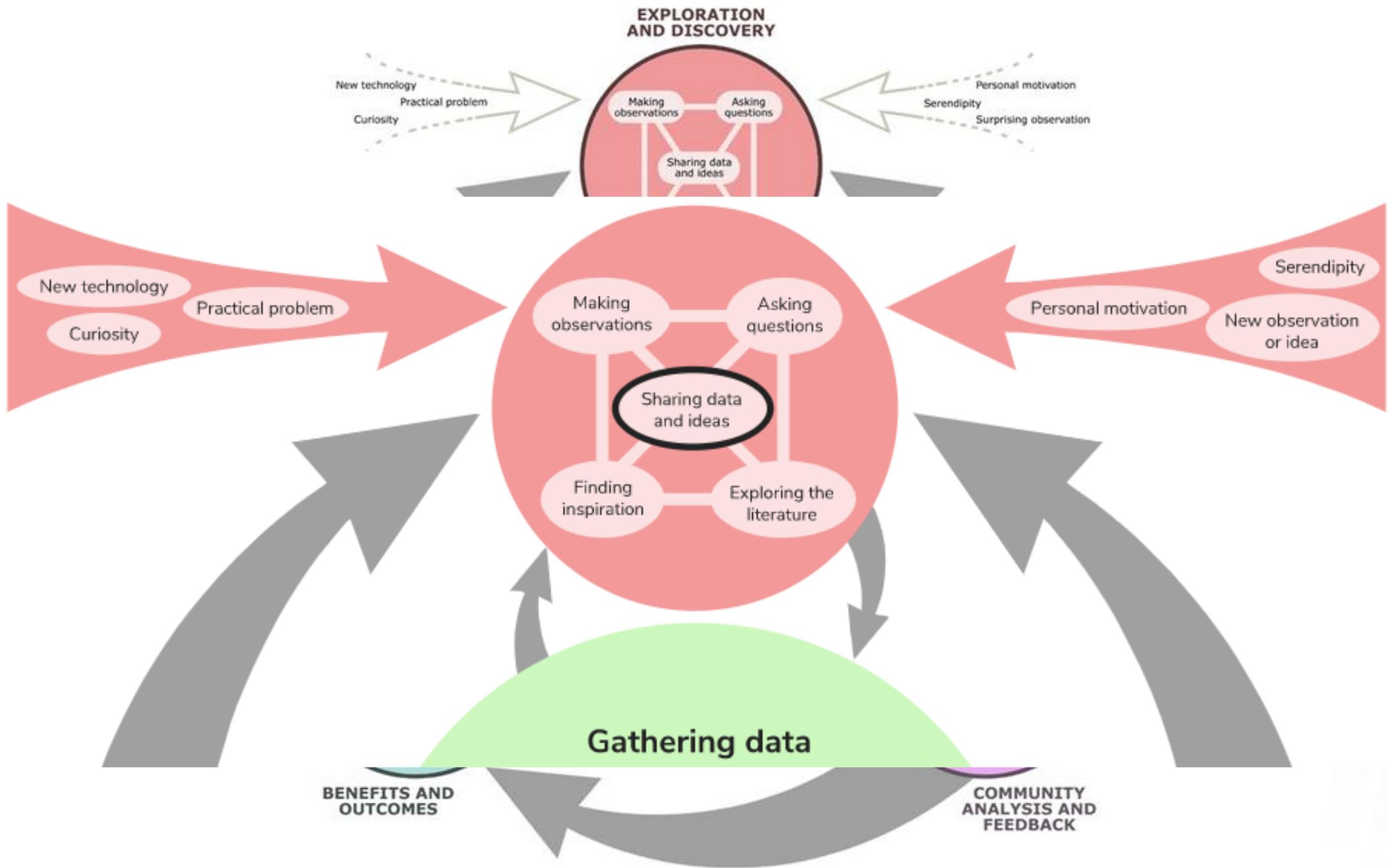
Nudging and boosting Open Science

- FAIR



- CRediT – 14 contributor roles incl data curation, software!
- Be Bayesian – transparently update your decisions





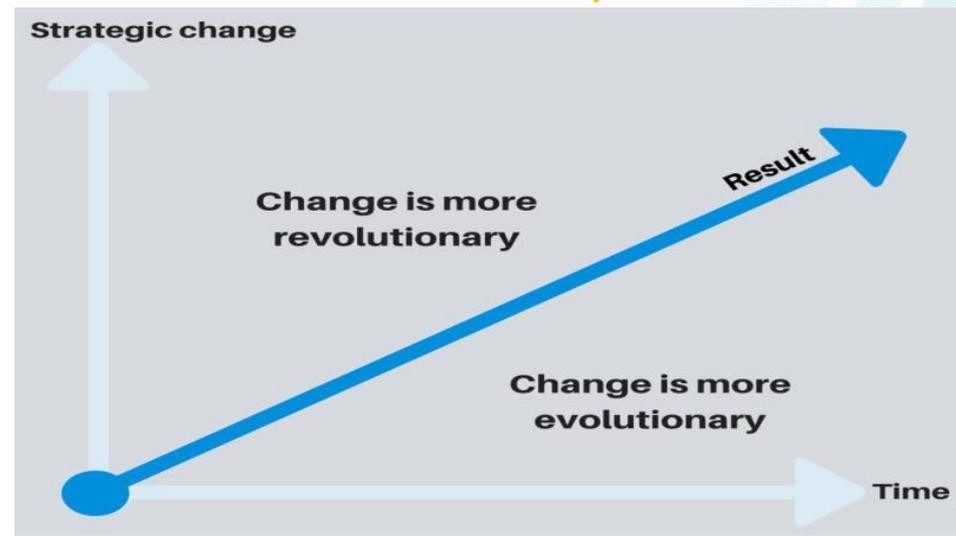
OS movement: evolution!





OS movement: evolution!

1. Create a Sense of Urgency
2. Build a Guiding Coalition
3. Form a strategic Vision & INITIATIVES (Plan S)
4. Enlist a Volunteer Army (eg replication crisis, SIPS)
5. Enable Action by Removing Barriers (OSF, Dataverse, ...)
6. Generate Short-Term Wins
7. Sustain Acceleration
8. Institute **Change**



Happy to take your questions



How to write a detailed (and replicable) method section: <https://www.youtube.com/watch?v=Ct-100UqmyY>

