

RI-issues in the Natural Sciences

Mads Goddixsen
Asst. Prof. IFRO, UCPH
mpg@ifro.ku.dk

UNIVERSITY OF COPENHAGEN

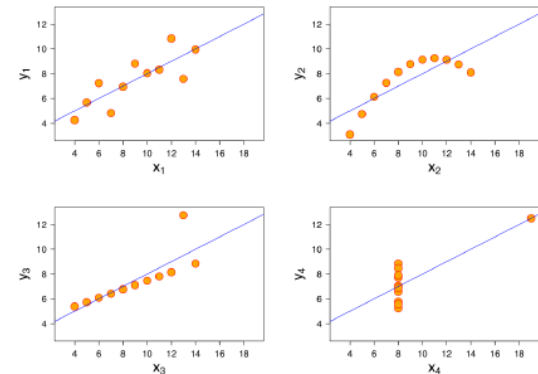


Experience base

- Multiple editions of the mandatory RCR course for Ph.D.-students at SCIENCE, UCPH.
- And as many editions of the same course at HEALTH.
- Including hundreds of exam essays where students describe issues they themselves have experienced/find likely they could experience.
- Preparing teaching material on RCR for BA science students.
- Together with Mikkel Willum Johansen

Videnskabelig redelighed

- En introduktion for bachelorstuderende



Af Mads P. Goddixsen & Mikkel Willum Johansen

KØBENHAVNS UNIVERSITET
INSTITUT FOR FØDEVARE- OG RESSOURCEØKONOMI



Available via:

<https://ifro.ku.dk/publikationer/undervisningsudgivelser/>

"Most prominent"?

- What are the "most prominent" RI-issues in the natural sciences today?

Two perspectives:

- Most common?
 - In what ways do researchers in the natural science most often deviate from good scientific practice (GSP)?
- Most harmful?
 - Which deviations from GSP are currently causing the most harm?

Most common: Authorship issues

- Length and strength of publication lists are routinely used to assess the quality of a researcher.
 - So, ideally they should reflect this quality *and only this*.
 - Often they do *not*.
- The vast majority of cases handled by the UCPH *Practice Committee* and real life cases described by students concern authorship issues.
- Gift authorships
 - To more or less absent supervisors
 - To those with the right facilities
 - To those who do routine work (?)
 - To those who do not contribute to writing/editing (?)
- More uncertainty on when authorship is deserved compared to the health sciences.

Most harmful?

- Harmful to *what*?
- To assess which deviations from GSP are most harmful to science we need to specify more specifically what is being harmed.
- GSP is not just an end in itself, but also a means to one or several other ends.
 - Something we tend to forget.
- What are these ends, and what deviations from GSP are the most harmful to our quest towards them?



Flourishing research

- Produces **reproducible reliable** results
 - (At least) some of which is **relevant** and valuable to the outside world
- Public **trust** in science is high.
- Research **progresses** as smoothly and quickly as possible.
- There is **fair competition** amongst researchers for positions and research grants.
- (Further details in my paper presentation tomorrow)

Current pressing RI-issues that harm the reliability of research in the natural sciences

Issues that harm reliability of results

- p-hacking

Issues that harm reproducibility

- Secrecy about raw data
 - A lot is currently being done here
- Secrecy about methods
 - Less is being done here (e.g. compared to the health sciences)

Thank you for your attention

