DO RESEARCH MISBEHAVIORS DIFFER BETWEEN DISCIPLINARY FIELDS?

A mixed methods study among academic researchers in Amsterdam
**DESIGN**

**Quantitative data collection**
- Survey among 4 academic institutes

**Quantitative data analysis**
- Ranking top 5 per disciplinary field

**Qualitative data collection**
- 12 Focus groups

**Qualitative data analysis**
- Inductive content analysis to get key themes

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60 major and minor research misbehaviors
- 20 randomly selected

N = 1073
- Biomedicine
- Natural sciences
- Social sciences and humanities

N = 56
- Stratified per academic rank and disciplinary field

- What is especially relevant for researchers of this field?
How often have you observed the behaviour in the last three years?

If you were to observe this behaviour, how large would its impact be on the validity of the findings of the study at issue?

“Report an incorrect downwardly rounded p-value”
<table>
<thead>
<tr>
<th>TOP 5 RESEARCH MISBEHAVIORS</th>
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<tbody>
<tr>
<td><strong>Biomedicine</strong></td>
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<tr>
<td>Insufficiently supervise or mentor junior co-workers</td>
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<tr>
<td>Choose a clearly inadequate research design or using evidently unsuitable measurement instruments</td>
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<tr>
<td>Let own convictions influence the conclusions substantially</td>
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<tr>
<td>Give insufficient attention to the equipment, skills or expertise which are essential to perform the study</td>
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<td>Keep inadequate notes of the research process</td>
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INDUCTIVE CONTENT ANALYSIS

- Reading
- Coding
- Extracting themes
- Recoding
Insufficient supervision

- PhD reviewing without supervision
- PhD candidates not allowed to go on vacation

Wrong role models

- Supervisors setting unrealistic expectations

Sloppy reporting

- Only reporting the most successful attempt
- Little solid argumentation
- Strong conclusions

Delaying reviewers

- Hard to publish counterargument
- Reviewers not accepting negative studies
Research is no one man show
Abusing power to strengthen own position

Team spirit?
Every contributor should get credits

Negative use of supervision time

Blocking competitor’s publication
Editors stealing ideas

Review misconduct

Competing reviewers stopping publication
Reviewers stealing ideas
“I had it once with a journal editor who was being really difficult about a publication of mine. And then he managed to get his own publication [with the same idea] in before mine.” – Full professor

Review misconduct

Blocking competitor’s publication
Editors stealing ideas
Competing reviewers stopping publication
Reviewers stealing ideas
Insufficient supervision

- Failing to provide a safe learning climate
- PhD candidates held responsible too early
- Supervisors exploiting PhD candidates
- Demanding co-authorship

Sloppy methods & statistics

- Post-hoc story telling
- Salami slicing
- Underpowered study
- P-hacking
- Unsafe data storage
“What is so horrible about these strategies is, post-hoc story telling, salami slicing, is how you win the game, this is how you become professor, this is what you should do. Some professors even tell you, like: this is what you should do.” – Postdoctoral researcher

Sloppy methods & statistics

- Post-hoc story telling
- Salami slicing
- Underpowered study
- P-hacking
- Unsafe data storage
Lack of supervision

- Depression among PhD candidates
- Saving up questions for someone else than the supervisor
- Supervisors stealing ideas from PhD candidates
- Supervisor who is not an expert gets credits
- Reviewing without feedback
- Accepting a paper based on authority

Uncritical reviewing

- Need to value peer review
- Reviewers that let hoaxes pass
**Insufficient supervision**
- PhD reviewing without supervision
- PhD candidates not allowed to go on vacation
- Insufficient supervision
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**Wrong role models**

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Supervision issues!
CONCLUSIONS

Recognized by researchers regardless of disciplinary field
- Supervision
- Sloppy science

More relevant for particular disciplinary fields
- Review misconduct
- Stealing of ideas
Development of programmes to incentivize and optimise supervision of junior co-workers should be prioritized in academia.

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QUESTIONS?

HOW YOU SEE YOURSELF:

COMPLEX
HUMAN BEING

HOPES

DREAMS

ASPIRATIONS

HOW MOST PROFESSORS SEE YOU:

BRAIN

STICK

SO, HOW'S
RESEARCH?

WWW.PHDCOMICS.COM
STRENGTHS & LIMITATIONS

**Strengths**
- First to include researchers from different ranks and fields
- Results largely confirm earlier results among WCRI participants

**Limitations**
- Amsterdam only
- Non-response