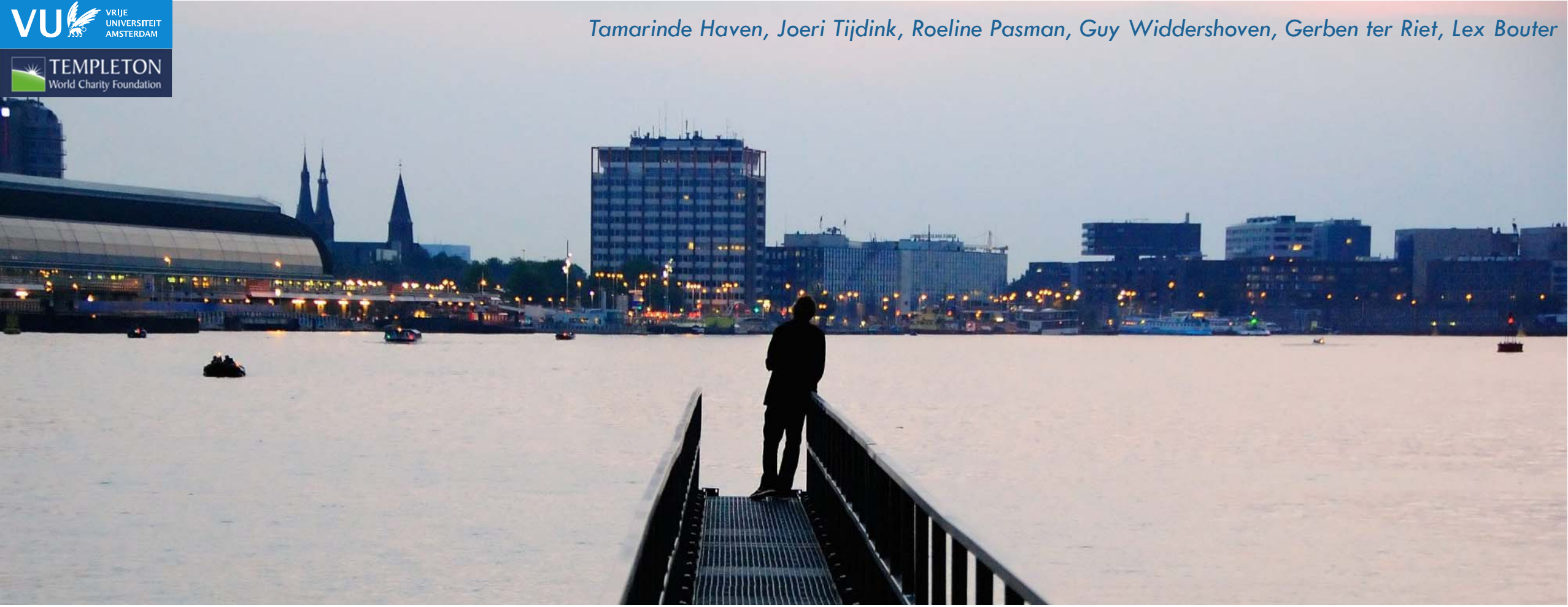
Tamarinde Haven, Joeri Tijdink, Roeline Pasman, Guy Widdershoven, Gerben ter Riet, Lex Bouter



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

60 major and minor research misbehaviors
- 20 randomly selected

N = 1073
- Biomedicine
- natural sciences
- social sciences and
- humanities

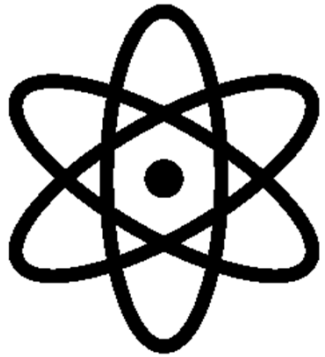
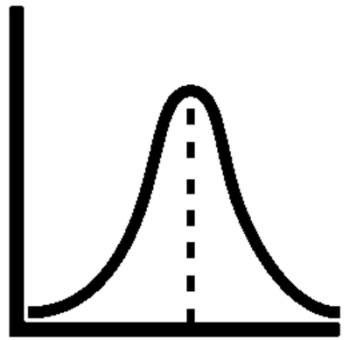
N = 56
- stratified per academic rank and disciplinary field

- 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”

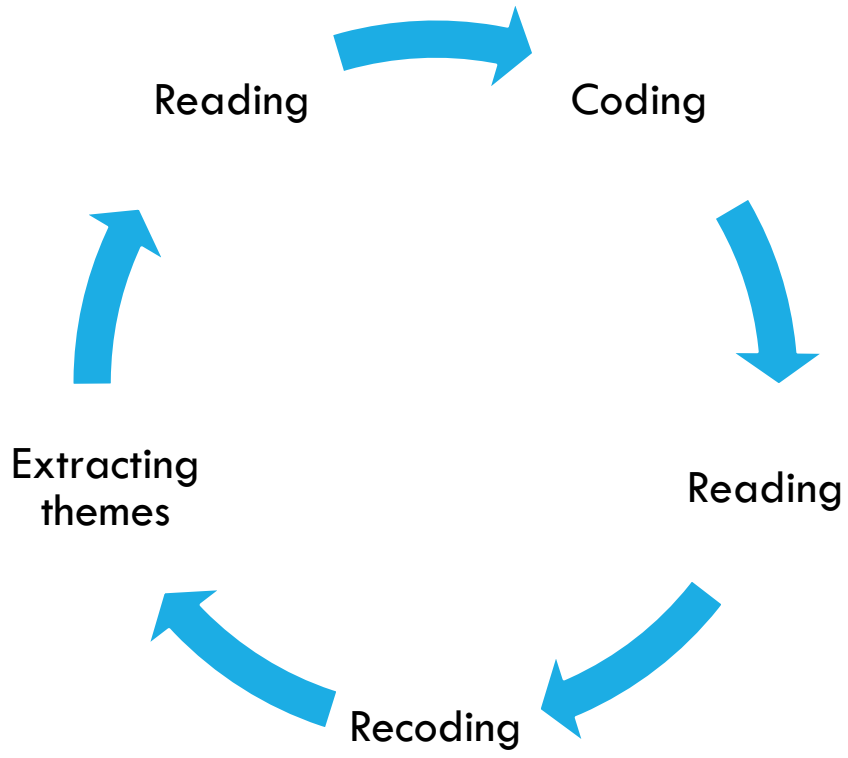



TOP 5 RESEARCH MISBEHAVIORS

Do researchers recognize these themes?

Biomedicine	N = 601	**Natural sciences**	N = 119	**Social sciences**	N = 241	**Humanities**	N = 109
Insufficiently supervise or mentor junior co-workers	7.02 (3.63)	Insufficiently supervise or mentor junior co-workers	7.72 (4.13)	Insufficiently supervise or mentor junior co-workers	6.95 (3.78)	Insufficiently supervise or mentor junior co-workers	6.76 (3.84)
Choose a clearly inadequate research design or using evidently unsuitable measurement instruments	6.04 (3.16)	Not report clearly relevant details of study methods	6.95 (3.43)	Not publish a valid 'negative' study	6.54 (3.98)	Use published ideas or phrases of others without referencing	6.69 (3.69)
Let own convictions influence the conclusions substantially	5.99 (3.17)	Insufficiently report study flaws and limitations	6.64 (3.41)	Let own convictions influence the conclusions substantially	5.86 (2.95)	Selectively cite to enhance own findings or convictions	6.17 (3.25)
Give insufficient attention to the equipment, skills or expertise which are essential to perform the study	5.64 (3.32)	Let own convictions influence the conclusions substantially	6.38 (3.27)	Choose a clearly inadequate research design or using evidently unsuitable measurement instruments	5.77 (3.38)	Choose a clearly inadequate research design or using evidently unsuitable measurement instruments	6.11 (3.37)
Keep inadequate notes of the research process	5.62 (2.96)	Give insufficient attention to the equipment, skills or expertise which are essential to perform the study	6.26 (3.48)	Give insufficient attention to the equipment, skills or expertise which are essential to perform the study	5.71 (3.3)	Unfairly review papers, grant applications or colleagues applying for promotion	6.03 (4.15)

INDUCTIVE CONTENT ANALYSIS



Supervisors setting unrealistic expectations

Wrong role models

Insufficient supervision

PhD reviewing without supervision

PhD candidates not allowed to go on vacation

Only reporting the most successful attempt

Sloppy reporting

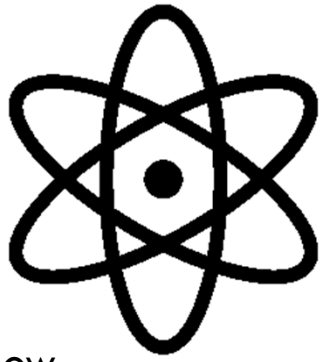
Little solid argumentation

Strong conclusions

Hard to publish counterargument

Delaying reviewers

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

Editors stealing ideas

Blocking competitor's publication

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*

Blocking competitor's publication

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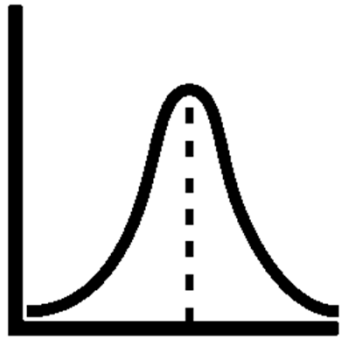


Failing to provide a safe learning climate

PhD candidates held responsible too early

Insufficient supervision

Supervisors exploiting PhD candidates

Demanding co-authorship

Post-hoc story telling

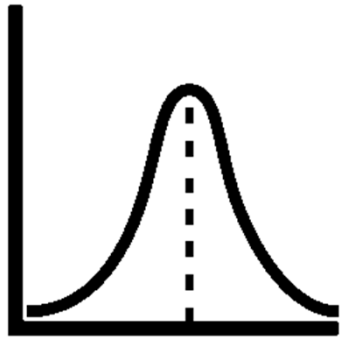
Underpowered study

Salami slicing

Sloppy methods & statistics

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*

Post-hoc story telling

Underpowered study

Salami slicing

Sloppy methods & statistics

P-hacking

Unsafe data storage

Depression among PhD candidates

Saving up questions for someone else than the supervisor

Lack of supervision

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

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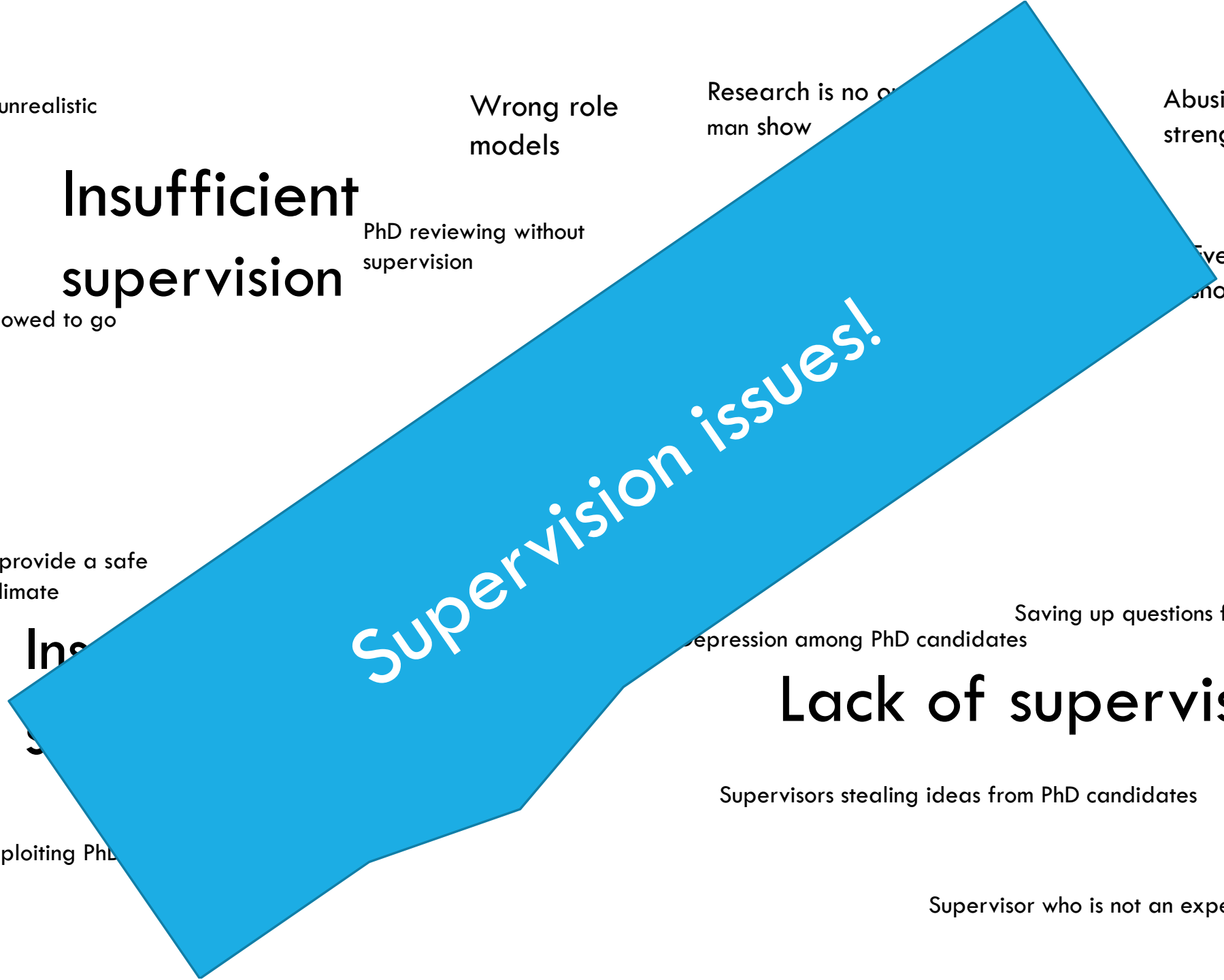

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CONCLUSIONS

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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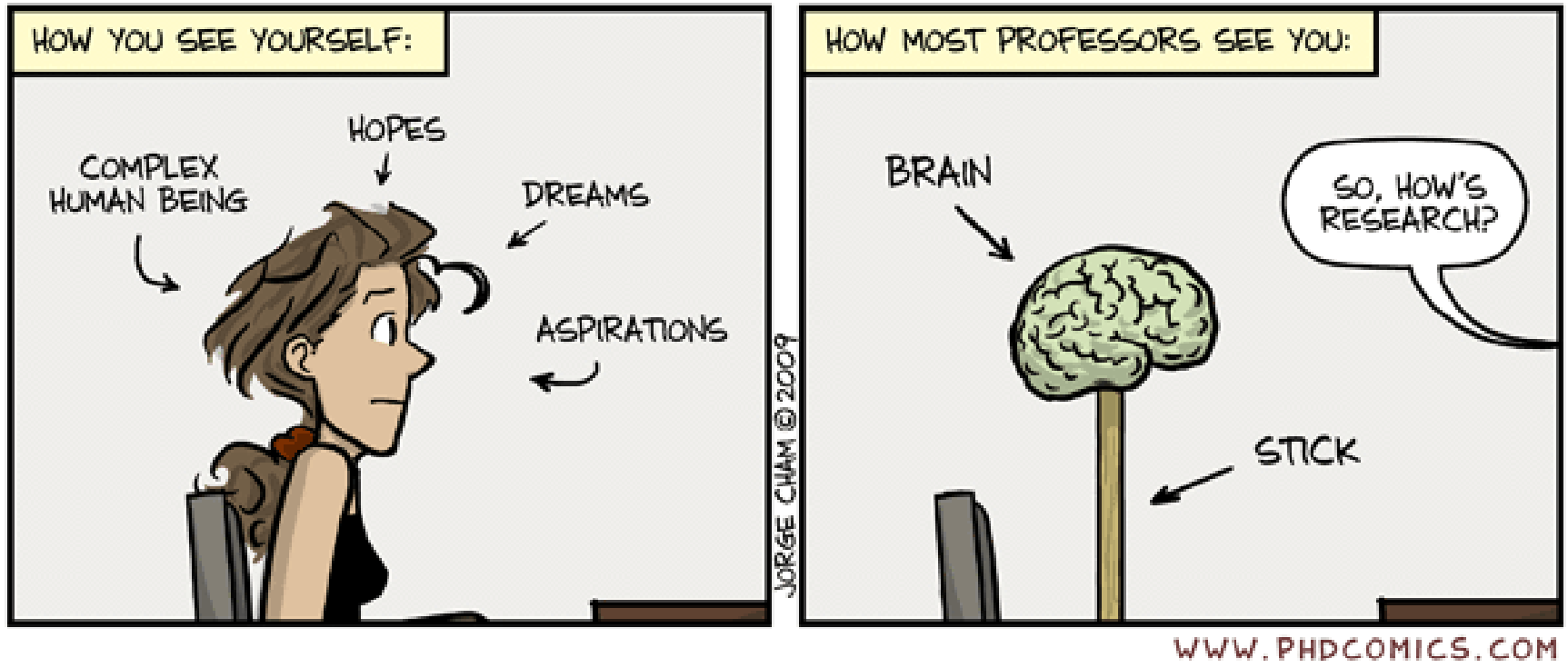
QUESTIONS?


HOW YOU SEE YOURSELF:
COMPLEX HUMAN BEING
HOPES
DREAMS
ASPIRATIONS
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HOW MOST PROFESSORS SEE YOU:
BRAIN
SO, HOW'S RESEARCH?
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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