



Students as Actors of the Open Science Movement

Open Science Day, University of Mannheim, 24.09.2024

Maximilian Frank^{1,2}

¹Open Science Working Group of the German Psychology Student Representation,

²Ludwig-Maximilians-Universität München

How are psychology
students in Germany
organised?

German Psychology Student Representation



- Students' interests at the university are represented by elected student councils ("Fachschaften")
- PsyFaKo serves as the federal representation for psychology students in Germany
- Resolution of position papers on the general meetings each semester
- Exchange with different stakeholders (ministries, members of parliament, academic societies, publishers)

Open Science Working Group of the PsyFaKo



- Foundation of the OS Working Group in 2018 by Johannes Brachem and Maximilian Frank
- Admission as a member of the GRN in 2021
- Membership in the Open Science Commission of the German Psychological Society (DGPs)
- Development of four position papers on:
 - Replication Crisis & Open Science [1]
 - Open Science & Open Access [2]
 - Support for the Petition “Stop Tracking Science” [3]
 - Authorship and promotion of ECRs [4]

Exemplary OS projects driven by students

Authorship of students and ways to promote transparency and responsibility in cooperation projects

Results from a Nationwide Survey amongst
German Psychology Students and Researchs

Raphael Merz^{1,3}, Bennet Strahmann^{1,3} & Maximilian Frank^{2,3}

(¹Ruhr-Universität Bochum, ²Ludwig-Maximilians-Universität München,

³Open Science Working Group of the German Psychology Student Representation)



Background & Motivation

- Anecdotal evidence from our own studies and increased discussion about incentive structures and abuse of power within psychology
- No empirical data on the allocation of authorships in collaborative scientific works between students and scientists
- Holistic view on the topic, gathering the perspectives of students as well as scientists from various career stages
- Cooperation between the Open Science Working Group of PsyFaKo and the DGPs Young Members' Representation for conducting this survey

Survey and Sample

Online survey from April 12 to July 12, 2021, advertised through the mailing lists of PsyFaKo and DGPs

557 Students:

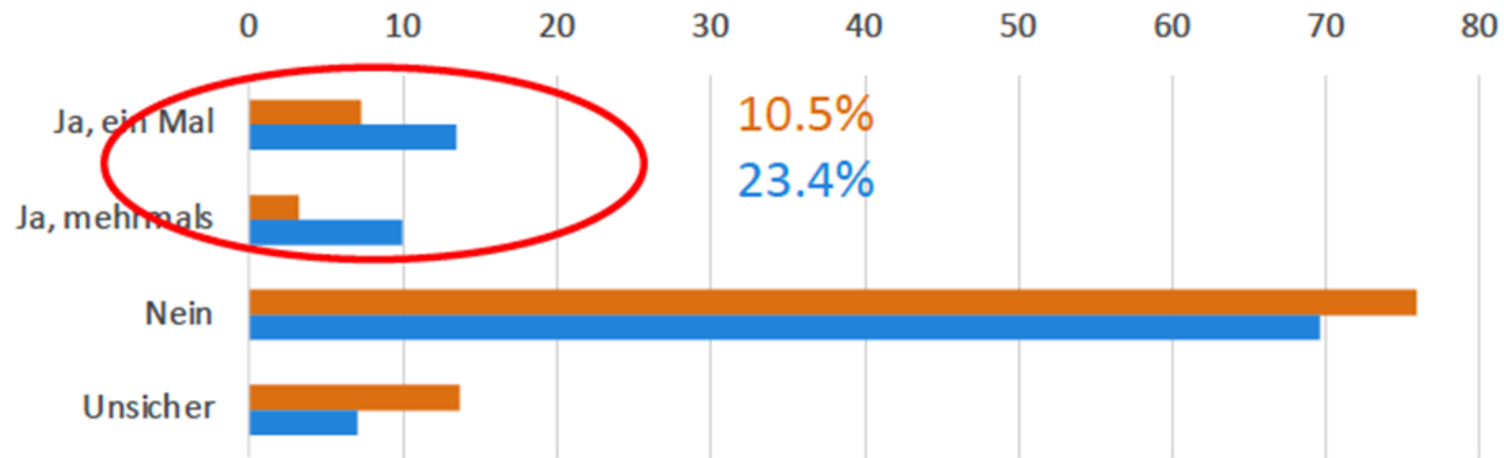
- 244 Bachelor, 252 Master, 13 Bachelor graduates, 48 Master graduates
- 85.2% female, 12.7% male, 1.4% diverse, 0.7% no information
- Average age 24.60 years (SD 4.41)
- Interest in publishing: strongly agree 38.20%, somewhat agree 34.30%, somewhat disagree 23.20%, strongly disagree 4.30%

603 Scientists:

- 130 PhD candidates, 252 Post-Docs, 37 Junior Professors, 113 Professors
- 60.7% female, 35.0% male, 0.7% diverse, 3.7% no information
- Average age 36.71 years (SD 12.00)

Conflicts regarding authorship

Wurde Ihnen aus Ihrer Sicht unverdient eine Ko-Autor:innenschaft verwehrt?



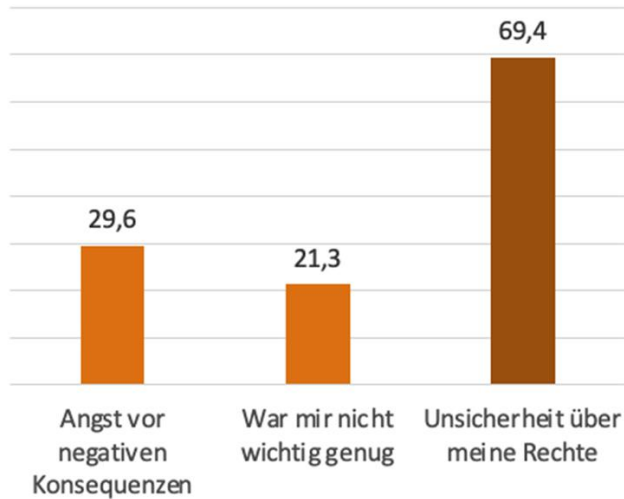
■ WissenschaftlerInnen
■ Studierende

Conflicts regarding authorship

Haben Sie sich im Konfliktfall Hilfe gesucht?

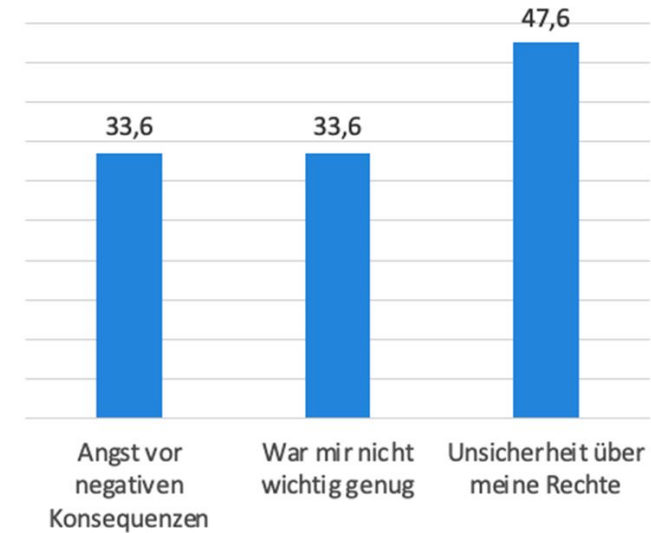
Ja: 3.57 %

Nein: 96.43 %



Ja: 7.74 %

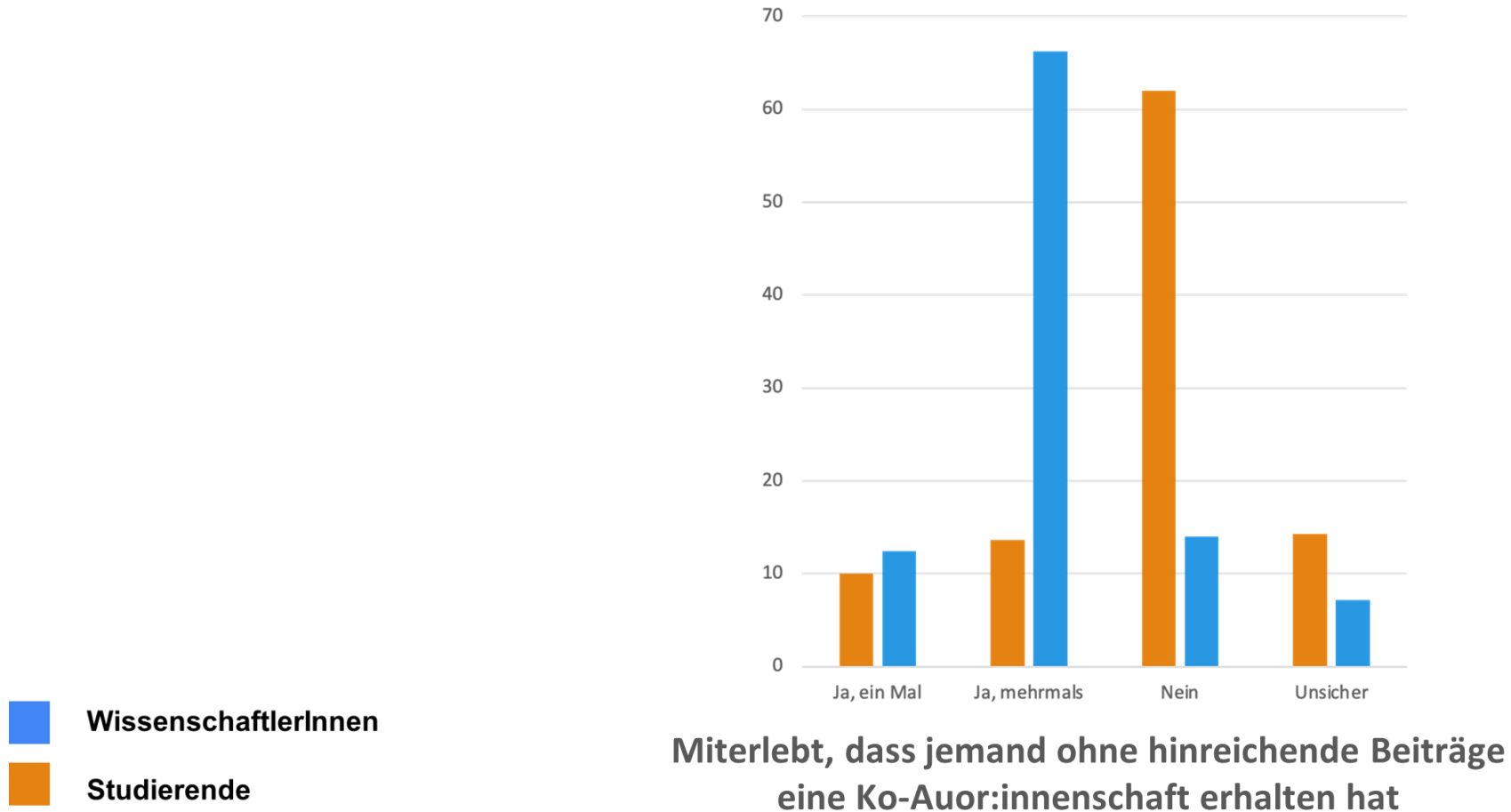
Nein: 92.26 %



■ WissenschaftlerInnen
■ Studierende

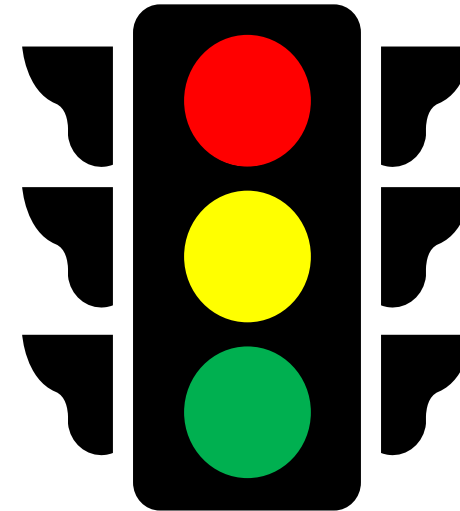
Gründe, warum kein Hilfe in Anspruch genommen wurde.

Conflicts regarding authorship



Authorship Traffic Light @ University Bochum

- Specification of minimum requirements for when authorship is appropriate or needs to be discussed
- Linked to specific (number of) CRediT criteria
- No quantitative reference sizes ("How many hours worked on XY")
- Resolution of disagreements: conversation with the affected parties, as well as an uninvolved representative from the student council and the scientific staff



Supervision Agreement @ University Bochum

- Supervision agreement on the collection and use of empirical data in theses
- Distinction based on the origin of the project:
 1. Independent research question + research design as well as independent data collection
 2. Data collection within the framework of a research project at a department, for which no data is yet available
 3. Data collection within the framework of a research project of the department, for which data is already available
 4. Work with existing data from a research project, which is used for a new research question

Questionable Research Practices and Open Science in Undergraduate Empirical Projects

Results from a Nationwide Survey amongst
German Psychology Students

Johannes Brachem, Maximilian Frank, Tatiana Kvetnaya, Leonhard Schramm,
Leonhard Volz, Open Science Working Group of the PsyFaKo
(German Psychology Student Representation)

Background & Motivation

- How prevalent are questionable research practices (QRPs) amongst psychology students?
 - nine QRPs and two ORPs (open/positive research practices) in accordance with John et al. (2012)
- To what extent are the replication crisis, QRPs and Open Science covered in curricula at German universities?
 - Differentiated between general and specific lectures
- Are students aware of / interested in the topic area?
 - perceived importance, interest and informedness
- Assumption: Connection between the prevalence of QRPs among students and the quality of academic teaching in psychology

Survey and Sample

- Sample of N = 1,398 psychology students and recent graduates (<2 years ago) from 47 German universities
- We conducted an online survey from 22.11.2018 - 28.02.2019 using formR
- Demographic data:
 - 78.2 % women and 20.5% men (other: 1.3%) with a mean age of 22.93 years (SD = 3,94 years)
 - 63.7% Bachelor, 32.6 % Master, 3.1%, Alumni
- Advertised via newsletters and mails using the psychology student representations as multipliers

Teaching Coverage

“Have you heard about the replication crisis during courses at your current university?”



75.4% of participants have heard about the replication crisis in courses
(Bachelor: 75.3%, Master: 77.6%)



20.6% of participants have not heard about it

Why do we need students
as actors of the Open
Science Movement?

Students as Actors of the Open Science Movement



Students are directly affected by the replication crisis if shaky knowledge is taught



Promotion of young researchers:
Students as the scientists of tomorrow



Equality:
The university is a place that should be shaped by everyone involved



Join Forces:
Students can support a cultural change towards Open Science

Sources Position Paper (in German)

[1] Position Paper **Replikationskrise und Open Science in der Psychologie**

<https://psyfako.org/wp-content/uploads/27-PsyFaKo-PP-Open-Science-Replikationskrise-und-Open-Science-in-der-Psychologie.pdf>

[2] Position Paper **Open Science und Open Access als Lösungsstrategien**

<https://psyfako.org/wp-content/uploads/30-PsyFaKo-STN-Open-Science-Kulturwandel-zu-einer-offenen-Wissenschaft.pdf>

[3] Position Paper **gegen die Überwachung von Forscher*innen im Wissenschaftssystem**

<https://psyfako.org/wp-content/uploads/34-PsyFaKo-PP-Open-Science-Gegen-die-Ueberwachung-von-Forscherinnen-im-Wissenschaftssystem.pdf>

[4] Position Paper **Autor*innenschaft und Förderung des wissenschaftlichen Nachwuchses**

<https://psyfako.org/wp-content/uploads/35-PsyFaKo-PP-Open-Science-AutorInnenschaft-transparentere-Vergabe.pdf>

Sources QRP Study

- Brachem, J., Frank, M., Kvetnaya, T., Schramm, L. F. F. & Volz, L. (2022). Replikationskrise, p-hacking und Open Science. Eine Umfrage zu fragwürdigen Forschungspraktiken in studentischen Projekten und Impulse für die Lehre. Psychologische Rundschau, 73, 1-17. <https://doi.org/10.1026/0033-3042/a000562>
- Frank, M., Schramm, L. F., Volz, L., Brachem, J., & Kvetnaya, T. (2022). Open Science in der Lehre – ein Kulturwandel mit systemimmanenten Hürden. Psychologische Rundschau, 73, 18–52. <https://doi.org/10.1026/0033-3042/a000578>
- OSF-Project-Page: <https://osf.io/t3mak/>

Sources Authorship

- Frank, M., Katzinger, E., & Bössel, N. (2023, May 26). Credit where...but where is credit due? An exploration of students' contributions to psychological research and its recognition through co-authorship practices in Germany. <https://doi.org/10.31234/osf.io/x9wfs>
- OSF-Project-Page: <https://osf.io/w38sg/>
- Authorship Traffic Light: <https://osf.io/wq6v9>
- Supervision Agreement: <https://osf.io/nemzp>