FREQUENCY AND CAUSES OF MISCONDUCT

1) State of Research

The English-speaking world is a leader in the study of scientific and student misconduct. Several studies have been published in recent years (see, among others, McCabe 2001, Fanelli 2009).

The FAIRUSE study by Sattler/Diewald, conducted from 2009 to 2012, provides precise figures for the German research landscape, and we refer to its results in the following. The study focused on student misconduct.

→ For a list of further reading, see:
https://www.ub.uni-mainz.de/akademische-integritaet/bibliographie

2) Forms of Student Misconduct

The FAIRUSE study lists seven forms of student misconduct:

- plagiarism
- use of unauthorized aids in examinations
- taking unauthorized aids into examinations
- Copying in exams
- Use medical certificates and excuses to postpone exams or deadlines
- Copying work tasks
- Falsifying/modifying data

Source: SATTLER, SEBASTIAN / DIEWALD, MARTIN: FAIRUSE – Fehlverhalten und Betrug bei der Erbringung von Studienleistungen; Individuelle und organisatorisch-strukturelle Bedingungen. Bielefeld 2013, p. 18.

3) Frequencies of Student Misconduct

The FAIRUSE study asked students what misconduct they had committed at least once in a six-month period:

- **37%** have copied in someone else's answers in an exam
- **35%** have copied work tasks from fellow students
- **31%** have taken a cheat sheet to an exam and **17%** have also used it
- **24%** have falsified or modified data
- **18%** have plagiarized
- **15%** used unjustified medical certificates or excuses to postpone exams or deadlines

Source: SATTLER/DIEWALD p. 18-20.

4) Causes of Student Misconduct

The study also asked about causes and influencing factors for student misconduct. The strongest influences were:

- Low subject-specific and methodological competence
- Low motivation
- Performance and test anxiety
- Stress (triggered e.g. by time pressure, high workload, unclear performance expectations, financial problems, social pressure)

In addition, poor study conditions (e.g., too few/too large courses, inadequate supervision, etc.) can also foster student misconduct.

Source: SATTLER/DIEWALD p. 25-50.

5) Forms of Scientific Misconduct

In the course of dealing with scientific misconduct, the following rough subdivision has emerged (originally from the Code of Procedure (Verfahrensordnung) of the MPG 1997)

- False statements (e.g. inventing and falsifying data)
- Infringement of intellecutal property (plagiarism, theft of ideas, unfounded assumption of scientific (co-)authorship, falsification of content, unauthorized publication, claiming (co-)authorship without consent).
- Interference with the research activities of others

Source: 17. Ordnung zur Änderung der Grundordnung der JGU Mainz vom 15. Dezember 2011, Anlage 1.

6) Frequency of Scientific Misconduct

To date, there are only a few studies from the English-speaking world that deal quantitatively with scientific misconduct (the German research landscape has not yet been systematically studied in this respect). Depending on the approach (e.g. survey, evaluation of retracted or rejected publications), their results differ. However, many studies suspect there may be a high number of unreported cases.

Here are two examples of excerpts from studies:

Overall, 33% of the respondents said they had engaged in at least one of the top ten behaviours during the previous three years.

Source: MARTINSON / ANDERSON / DE VRIES: Scientists Behaving Badly. In: *Nature* Vol. 435/9, June 2005, p. 738.

→ [Survey of several thousand scientists in the U.S. funded by the National Health Institute. Counts of misconduct include falsification of data, withholding/deletion of data, relationships with subordinates/patients, plagiarism].

Continuation: Frequency of Scientific Misconduct

However, it is likely that, if on average 2% of scientists admit to have falsified research at least once and up to 34% admit other questionable research practices, the actual frequencies of misconduct could be higher than this.

Source: FANELLI, DANIELE: How Many Scientists Fabricate and Falsify Research? A Systematic Review and Meta-Analysis of Survey Data. In: *PloS One* 4(5), 2009, p. 10.

→ [Meta-analysis of various surveys and studies on scientific misconduct, mainly dealing with falsification of data.]

For the German-speaking area, there are results of a survey of doctoral students by M. Gommel, G. Sponholz and H. Nolte:

76 out of 387 doctoral students (= 19,6%) admitted to have been involved in at least one of six severe forms of scientific misconduct with consequences upon their work: plagiarism; data manipulation, fabrication or theft; honorary authorship; duplicate publication. Honorary authorship was by far the most prominent form, followed by data manipulation (see Table 3). One in four doctoral students admitted to have been involved in bad mentoring. More than half of the students (198 = 51,2%) experienced any kind of misconduct with consequences upon their work.

Source: GOMMEL / NOLTE / SPONHOLZ: Teaching Good Scientific Practice. Results from a Survey and Observations from Two Hundred Courses. In: *JunQ* Vol. 5/2 2015, p. 11-16.

→ [The authors give two-day workshops on Good Scientific Practice of PhD students throughout Germany and distributed questionnaires between November 2011 and December 2012 as part of this event, which were answered by 387 participants].