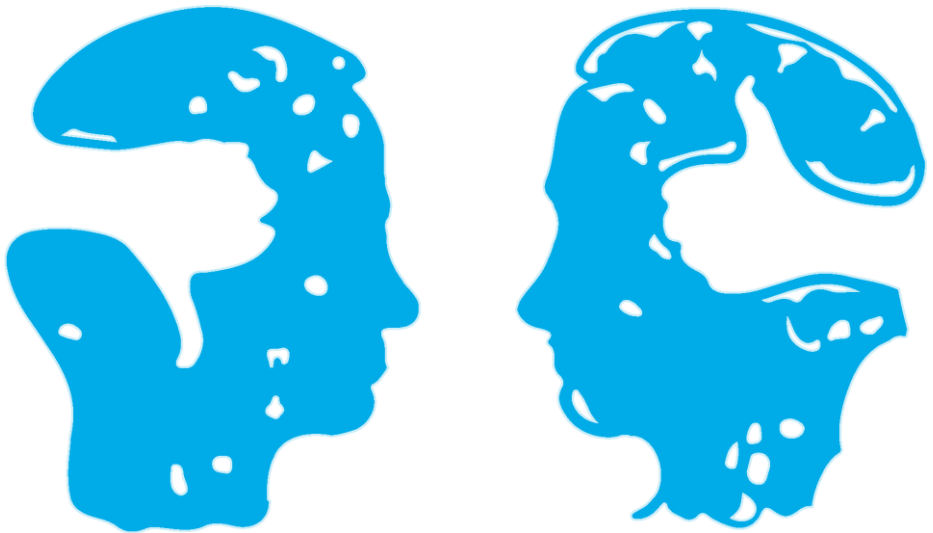


Gender Bias in Academia

**Research Findings and Recommendations for Gender Equality in
Research**



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Preamble

Even after thirty years of equal opportunity policies, the number of female professors at German universities remains comparatively low. One reason for this is an “unconscious gender bias”, i.e. gender-based actions, attitudes and perceptions that are unconscious and automatic. Our judgements are based on preconceptions (stereotypes, prejudices, experiences) that enable us to form on-the-spot opinions. However, in research such a bias can lead to undesirable consequences. Results of corresponding studies from various academic disciplines are cited in this brochure and described in some detail. Although they perform as well, female researchers are often considered as less qualified and/or less suited to a particular position than their male colleagues. Is gender bias one reason for the glass ceiling women tend to encounter at some point in their careers? Do recurrent patterns of scant regard for performance and potential also encourage self-selection among female junior researchers, for instance? It is our responsibility to break this vicious cycle wherever possible. To do so, we, as academics, must continuously reflect on our decisions and decision-making processes. At the University of Konstanz, we strive to minimise gender bias as best we can and, if possible, to eliminate it entirely. We seek to recruit tomorrow’s brightest and best in a climate that is free from prejudice and pre-conceived ideas about gender.

With this brochure, we hope to raise your awareness of gender bias and unconscious discrimination, seeking to actively combat both and to enable the fair evaluation, selection and support of outstanding individuals.

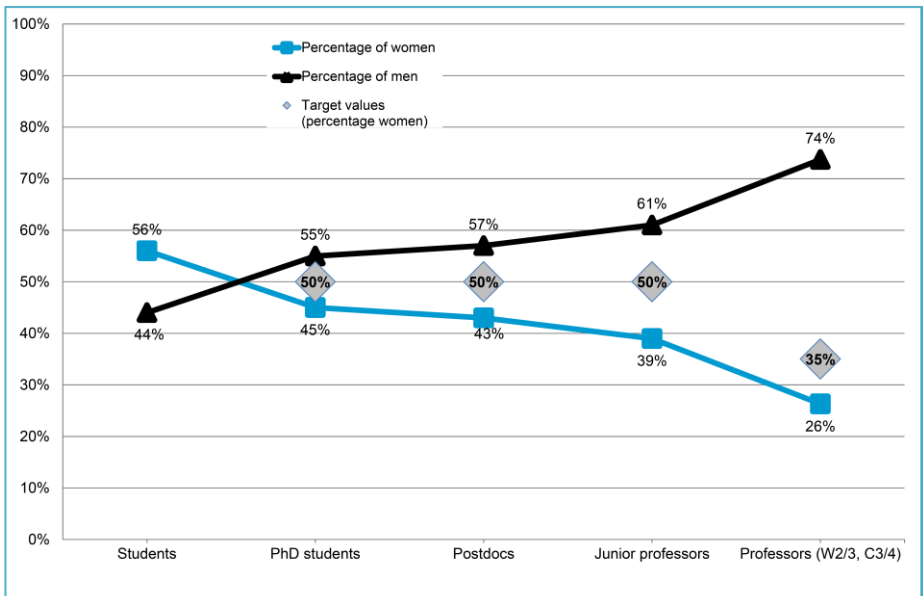
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Introduction

The fact that numerous female researchers at all career levels choose to quit their academic careers comes with a devastating loss of talent and potential for innovation throughout academia. One reason women quit is what's been termed **implicit gender bias**. Unconscious (**implicit**) evaluations are based on past experiences, cultural patterns of thought and social assumptions, all of which can lead to distorted perceptions (**bias**) and decisions. Such an evaluation is invariably based on unconscious assumptions about and attributions of biological and social **gender**, rather than on information about the individual person.

Representation of women at various career levels at the University of Konstanz (as of: 01.01.2018, including targets for 2025)



Implicit gender bias works subtly but can have grave consequences for the career development of women (Martell et al. 1996) and men. Numerous studies show that, in many situations throughout their academic careers, women are confronted with gender bias. Female researchers tend to be evaluated more harshly, receive fewer awards and smaller research grants. They are also deemed to have less research potential. Because of this, women in academia are often less visible and thought to be less suited to a career in research and science than their male colleagues.

Research is presumed to be as rather self-referential due to the peer review system. This is why it is so important to grapple with gender bias and stereotypes in academic environments and to develop strategies for supporting outstanding individuals irrespective of gender. A study has demonstrated that gender bias is more likely to occur in male experts (and, to a lesser extent, in female experts) who are convinced that their decisions are wholly objective (Uhlmann & Cohen 2007). Based on scientific research, this brochure seeks to provide further information and issue recommendations to help you avoid discrimination when you evaluate, review, hire, appoint and support others.

Proven Gender Bias in Academic Qualifications

Why do women continue to be underrepresented in academia (Gibney 2016)? Why do women succeed to fewer leading positions, earn less and acquire less funding for their projects than men?

The following studies provide hints as to how gender bias influences various fields of action and how it impacts the academic careers of female researchers.

Evaluations

- Men are more likely to receive excellent evaluations, women are more likely to receive good evaluations (Ledin et al. 2007; Leslie et al. 2015); women are generally more likely to be underestimated (Valian 1998).
- Good performance is attributed to men more often than to women (Matilda effect; Rositer 1993; Stamhuis 1995).
- Students tend to evaluate female teaching staff significantly more harshly than male teaching staff (McNeill et al. 2014).
- Women receive fewer research awards but more recognition for their teaching and the services they provide than men (AWIS 2015).
- In letters of recommendation, a significantly higher number of standout adjectives are used to describe men than women (Schmader et al. 2007). Letters of recommendation for women contain fewer words that describe ability and more grindstone words. In addition, letters of recommendation for women tend to contain a significantly higher proportion of deprecating language, e.g. negative and unexplained statements, weak praise and doubt (Trix & Psenka 2003).

Publications

- In some disciplines, men dominate the prestigious positions of first and last author, although often the number of publications hardly differs between men and women. Furthermore, in the past 30 years only 26% of single-author publications were published by women (West et al. 2013).
- Publications written by teams comprised entirely of women are systematically less cited than those of men (Maliniak et al. 2013). At the same time, mixed-gender teams received 34% more citations for their publications than purely male teams (Campbell et al. 2013).
- Female researchers are less often contacted to submit invited articles to leading science journals than men (Conley & Stadmark 2012).
- In the natural sciences, 20% fewer women than men achieved a position as (junior) research group leader. Only 60% of this result was due to differences between the number of publications and citations. The remaining 40% can probably be explained by the fact that publications by women tend to be appraised less highly (Lerchenmueller & Sorenson 2018).

Networking and Conferences

- Women receive less instruction, support and chances for collaboration than men do, who generally receive more support (Ledin et al. 2007).
- In elite laboratories led by men, there are 10-40% fewer women than in less elite groups or in elite laboratories led by women (Sheltzer & Smith 2014).
- Conference abstracts written by women are regarded as less qualified than those submitted by men and women are thought of as less attractive potential collaboration partners (Knobloch-Westerwick et al. 2013).
- Male conference organisers and session chairs tend to accept fewer female speakers and/or extend fewer invitations to female scientists than would otherwise reflect the proportion of conference abstracts authored by women (Ford et al. 2018).

Third Party Funding

- On average, women receive 7% fewer research grants (Bornmann et al. 2007).
- Between 2007 and 2016, a proportionally smaller number of ERC Grants was awarded to women than men. Especially in terms of entry-level grants, there were marked differences between the number of female applicants and the proportion of female grant holders.
- As regards external funding, the differences between men and women tend to be small, but they invariably favour men. Women also tend to receive significantly less financial support for projects that have already been approved (Pohlhaus et al. 2011; Head et al. 2013). This means that women have to make do with worse working conditions, e.g. smaller laboratories and fewer resources (Ceci & Williams 2010).

Professional Situation and Hiring Processes

- A significantly higher number of women are in part-time employment than men. This is only partially due to parenthood. The number of women in part-time employment has increased over the past few years (Selent et al. 2011). More women are in unstable employment relationships than men (European Commission 2015).
- Female researchers earn significantly less than their male colleagues (Shen 2013; European Commission 2015).
- Faculty members believe male applicants to be more competent and suitable for positions than female applicants. Also, male applicants were offered a higher entry-level salary and more career support/mentoring than female applicants (Moss-Racusin et al. 2012).
- Men were twice as likely to be selected for a job demanding mathematics skills than women, although the required maths problem was solved equally well by both genders. In subsequent self-evaluations, the men presented themselves in a more favourable light than the women did (Reuben et al. 2014).
- Women in IT are more likely to hold junior positions and for a longer period of time than their male peers (Hacker/Rank 2018).
- Carli et al. (2016) were able to show that the stereotypical scientist is considered to be male (especially in traditionally male disciplines). Men and male scientists were thought of as extremely action-oriented, while women were more likely to be thought of as social. At the same time, however, social character traits correlated with negative hiring decisions in academia (Madera et al. 2009).
- Without systematic measures and education about gender bias it will take at least a few decades to reach a balanced ratio of men and women (Holman et al. 2018).

Our Strategies and Recommendations

Based on the cascade model, the University of Konstanz's equal opportunity strategy aims to appoint more women to posts at all academic qualification levels, professorships and leading positions. In this context, it seems interesting that mixed-gender research teams produce more interdisciplinary publications and achieve higher citation rates than single-gender teams (Elsevier 2015). Mixed-gender teams seem to have a higher potential regarding the quality of research, since they benefit from more varied perspectives, approaches and experiences.

Since most researchers are involved in selection processes, status talks, professional evaluations, reviews and career recommendations, the research results alluded to in this brochure should be circulated widely to enable researchers to actively avoid gender bias, including, for instance, in the classroom. The key is to identify bias and to minimise its impact on personal and professional evaluations.

On the following page, you will find a brief checklist that can help you avoid gender-biased distortions when evaluating an academic CV as well as a candidate's potential for an academic career. The checklist has been optimised for use in consultations, supervision and staff feedback talks and for writing and evaluating reviews.

For guidance on academic staff selection procedures, please also read the "Guide for gender-equitable hiring processes" (available only in German yet), s.p. 12.

Checklist for Counselling and Letters of Recommendation

Points to Consider	OK
Are you well-informed about gender bias and stereotyping and have you raised your employee's and research team's level of awareness on this topic?	<input type="checkbox"/>
Do you make sure that you address all genders and that your statements are as free from stereotypes as possible? Do you keep your staff members informed about funding opportunities and professional networks and do you actively support their participation?	<input type="checkbox"/>
Do you make sure that the conduct within your area of responsibility is fair and collaborative?	<input type="checkbox"/>
Do you use the same evaluation criteria for all genders and are you making sure that authorships are awarded fairly and in accordance with individual performance?	<input type="checkbox"/>
Besides quantitative (e.g. number of publications) and qualitative criteria (e.g. interdisciplinarity, innovation, creativity, originality), do you also take transferable skills into account (e.g. teaching competencies, capacity for communication and teamwork, leadership skills)?	<input type="checkbox"/>
Do you take individual and varied living conditions (e.g. children, relatives in need of care, chronic illnesses) and academic age into account? Are you open for less "traditional" academic biographies?	<input type="checkbox"/>

Implicit Gender Bias Self-Test

The Implicit Association Test (IAT) was developed in Harvard to identify and reflect on unconscious attitudes. The brief self-test is based on the observation that people react more quickly to two concepts (e.g. “woman” and “physics”) that they associate closely than to concepts that they do not associate closely. To take the test, please visit: <https://implicit.harvard.edu/implicit/takeatest.html>

Online Tutorials and Links

- University of Zurich, Faculty of Science, Recruiting for Excellence, as of April 2017: https://www.mnf.uzh.ch/dam/jcr:b13591f5-cc5f-4d55-8388-84b6a95735e0/genderLineDiagram23Juni_webSeite.pdf
https://www.gleichstellung.uzh.ch/de/news/news17/mnf_flyer.html
- Guide for gender-equitable hiring processes published by the Office for Equal Opportunity, Family Affairs and Diversity (in German): uni.kn/rgf/stellenbesetzungsverfahren
- Guide to gender competency in teaching (in German): uni.kn/rgf/gil
- Online tutorial for appointment processes provided by Heidelberg University (in German): http://www.uni-heidelberg.de/gleichstellungsbeauftragte/karriere/online_tutorial_genderbias.html
- Information for selection committees: <https://royalsociety.org/~media/policy/Publications/2015/unconscious-bias-briefing-2015.pdf>
- Brochure of the League of European Research Universities 2017: <https://www.leru.org/files/implicit-bias-in-academia-full-paper.pdf>
- Online tutorial of the Irish Universities Equality Network on diversity and appreciation at universities: <https://www.tcd.ie/equality/training/lead-online-training/>

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