DR. JULIEN BOBINEAU

Julius-Maximilians-
UNIVERSITÄT
WÜRZBURG

DENKFABRIK
DIVERSITÄT

Implicit BIAS

A basic introduction & Workshop

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Dr. Julien Bobineau

Diversity Manager &
Co-founder of D²
(since 2023)

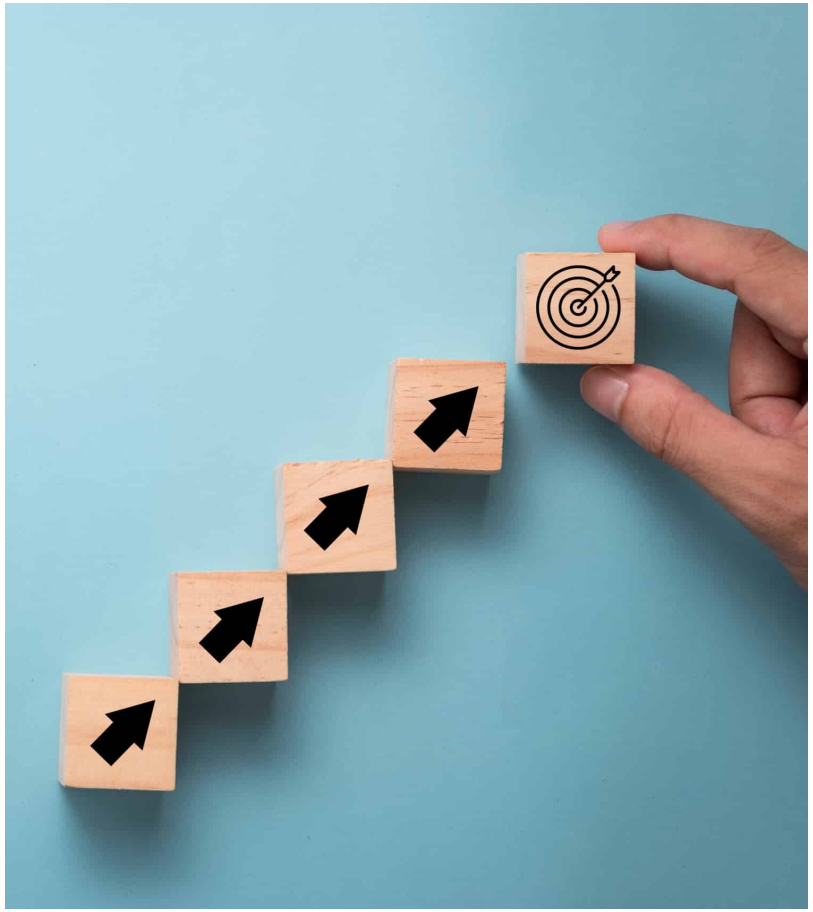
2007 – 2012	M.A. in French Culture & Literature, University of Würzburg
2012 – 2017	PhD in African Studies, University of Würzburg (BayEFG)
2019 – 2023	Postdoc, Universites of Würzburg & Jena, with fellowships in Dakar, Edmonton, Salamanca & Caen
since 2022	Habilitation, University of Jena, working title: „Racial profiling between political attitudes and police practice“

The GOALS of the study

- understanding how decisions are made and how implicit biases affect the police
- development of a training model that takes into account the special circumstances of police work (shift work, high stress, experience of violence etc.)

TODAY'S GOALS

- **Understand** how implicit biases shape evaluation, hiring, and mentoring in STEM
- **Practice** tools to reduce bias under pressure and in everyday decision-making
- **Commit** to concrete actions that foster equity and inclusion in research and teaching



CHECK-IN

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Who are you?

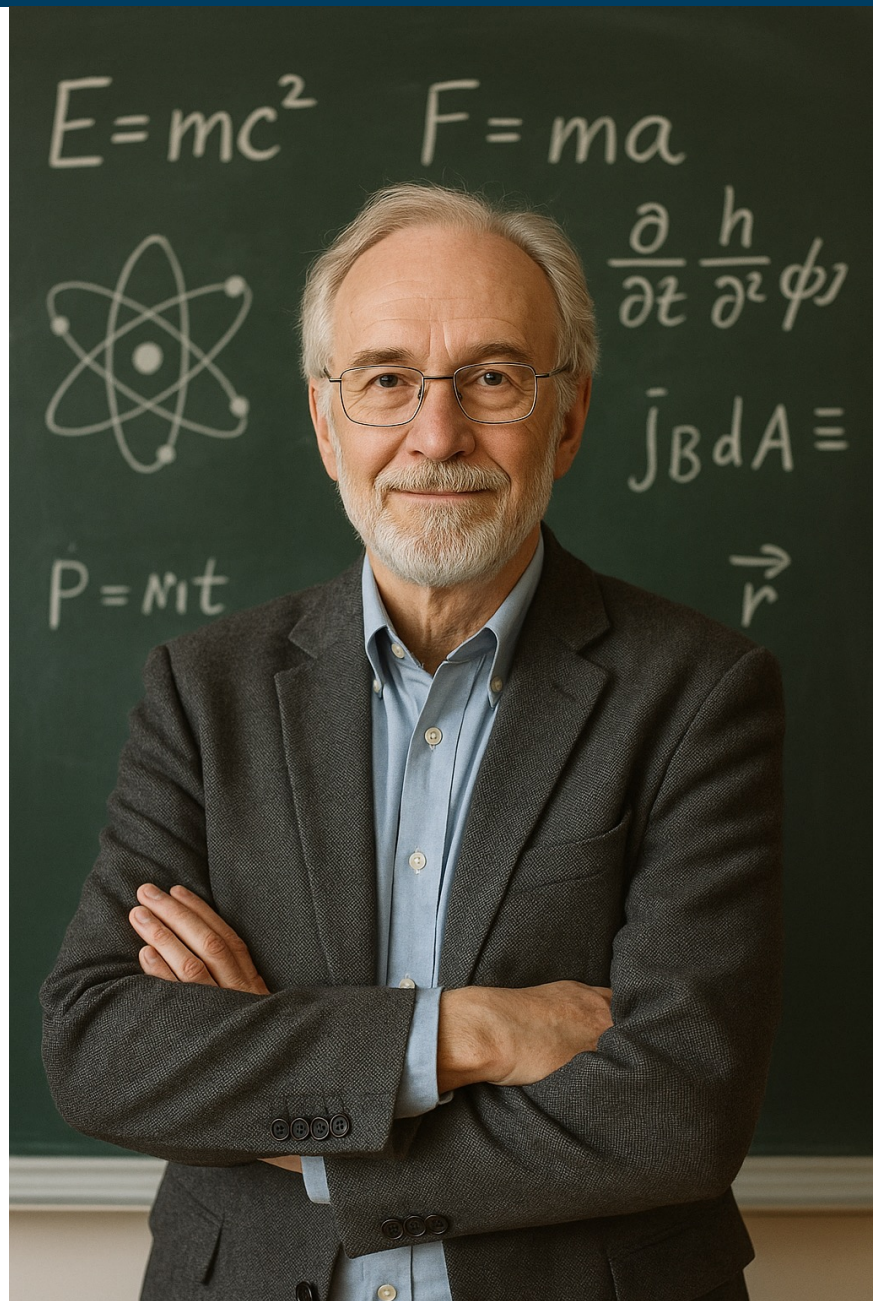
What is you field of expertise?

How do you relax in your free time?

1 What is Implicit Bias?

The PHYSICS professor

- What images come to mind?
- What images are associated with you in your environment?



Terminology

Stereotype
Incomplete knowledge about perceived social group
-> Development through social categorization, through the formation of in- and out-groups

Prejudice
Emotionally charged stereotypes
-> Positive or negative attitudes towards (members of) groups

Unconscious/ cognitive bias
Prejudices that help us to react quickly to situations in everyday life
-> Incorrect and rigid generalization (positive and negative)

IMPLICIT biases

- Daniel Kahneman:[1] System 1 and System 2
- Thinking errors based on „experience“
- Development of biases due to lack of questioning

[1]Kahneman, Daniel 2011: Schnelles Denken. Langsames Denken. München: Penguin Verlag.

DANIEL KAHNEMAN[1]: System 1 and System 2

✗ System 1	✗ System 2
fast	slow
automatic	elaborate
unreflected	reflected
unconscious	conscious
Little to no effort	effort

[1]Kahneman, Daniel 2011: Schnelles Denken. Langsames Denken. München: Penguin Verlag.

IMPLICIT biases

HALO-EFFECT
One particular trait shapes overall impression
✗ e.g.: unpopular dialect

AFFINITY BIAS
Preference for people that are similar to me
✗ e.g.: sharing a hobby

CONFIRMATION BIAS
Higher awareness of information that support existing beliefs
✗ e.g.: with news "I knew it"

INGROUP | OUTGROUP BIAS
Greater appreciation for the own "group"
✗ e.g.: sports team

PRIMACY EFFECT
The first impression is easier to remember
✗ e.g.: firm handshake

Hucke, Veronika 2017: Mit Vielfalt und Fairness zum Erfolg: Praxishandbuch für Diversity und Inclusion im Unternehmen. Wiesbaden: Springer Gabler.
Vedder, Günther 2022: Unbewusste Vorurteile bei der Personalauswahl. In: Vedder, Günther/ Krause, Florian (Hrsg.): Vielfalt in der Arbeitswelt, S. 1-13. Baden-Baden: Nomos Verlagsgesellschaft.

FRAMING

The real effects of *IMPLICIT* biases

AÉROPORT DE ROISSY : ARRESTATION D'UN PROFESSEUR DE DROIT À L'UCAD

Par **Assane Seye** — On **Oct 8, 2018**

ACTUALITÉS SOCIETE

SPIEGEL Politik

Abonnement Anmelden

Menü › Deutschland › Studium › Visa-Vergabe: Viele Studierende aus Afrika gelangen nur schwer an deutschen Aufenthaltstitel

Deutsche Aufenthaltstitel

Studierende aus Afrika scheitern oft bei der Visavergabe

Bei afrikanischen Interessenten lehnen deutsche Behörden Anträge auf Studierenden-Visa oft ab. Die Linke spricht von einem »Generalverdacht« gegenüber Menschen aus dem Globalen Süden.

22.12.2023, 13.17 Uhr • aus **DER SPIEGEL 52/2023**

IMPLICIT biases

Why are biases particularly effective in science in...

- grading & PhD mentorship?
- professorship appointment procedures (‚Berufungsverfahren')?
- other hiring processes?
- publication processes (if not blind/double blind)?
- research in general?
- third-party funding allocation?

CASE 1 – Oral Examination

A female Master student is taking an oral physics exam. During her answers, she hesitates slightly, and the professors comment that she seems insecure. Later, a male student hesitates in a similar way, but the professors interpret it as a sign of “deep reflection” and “thoughtfulness.”

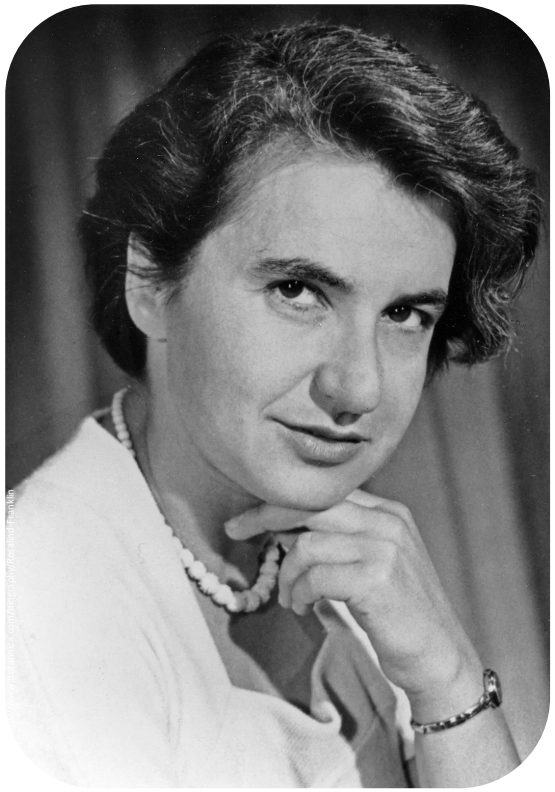
Where could bias play a role in the interpretation of performance? How might gender stereotypes influence the evaluation?

STUDY 1 – The Mathilda effect (Rossiter, 1993)

Definition: Systematic bias where women scientists' contributions are ignored, denied credit, or attributed to men

Contrast to Matthew Effect: While the Matthew Effect highlights the over-recognition of famous scientists, the Matilda Effect emphasizes the under-recognition of those (especially women) with less privileges

STUDY 1 – The Mathilda effect (Rossiter, 1993)



Rosalind Franklin
(1920-1958)

Lise Meitner
(1878-1968)

Jocelyn Bell Burnell
(*1943)

STUDY 2 – Double Jeopardy (Williams et al. 2014)

Study design: Survey of 557 women scientists (STEM fields) across race/ethnicity

→ **Prove-It-Again bias:** Women of color reported having to prove competence more often than white women

→ **Tightrope bias:** Women of color were more frequently seen as “too aggressive” when they behaved assertively, but penalized if too passive

CASE 2 – Reviewing a manuscript

Two manuscripts are submitted to a prestigious physics journal. One comes from a well-known university in the U.S., the other from a less internationally recognized institution in Eastern Europe. Even though the content quality is similar, reviewers describe the first paper as “innovative and rigorous,” while the second is described as “unclear and in need of major revisions.”

How could institutional prestige or geographic origin bias the review process?

STUDY 3 – The Matthew effect in funding (Bol et al., 2018)

Study design: Regression discontinuity on Dutch early-career grant program ("Veni") with approx. €2 billion funding, tracking careers over 8+ years

→ Winners just above the threshold obtained **>2x as much** funding in the following 8 years as near-identical nonwinners

→ Effect **not explained by better scientific output** (no jump in publications, citations, or H-index after funding)

STUDY 3 – The Matthew effect in funding (Bol et al., 2018)

Study design: Regression discontinuity on Dutch early-career grant program ("Veni") with approx. €2 billion funding, tracking careers over 8+ years

→ **Participation effect**: Nonwinners applied less often for future grants, while winners stayed in the competition

→ early winners had a **47% higher chance** of becoming full professors 10–16 years later

CASE 3 – Mentoring PhD students

A professor is supervising several PhD students. The professor often gives more guidance and encouragement to students who remind him of his younger self — in this case, male students with similar academic interests. Female and international students receive less feedback and fewer invitations to collaborate on publications.

What implicit biases might shape mentoring relationships?
How can unequal support affect academic careers?

STUDY 4 – Gender Bias (Moss-Racusin et al., 2012)

Study design: randomized, double-blind experiment with 127 biology, chemistry, and physics faculty identical lab manager applications (male vs. female name) in the U.S.

- → Male applicants rated as more competent and more hireable than identical female applicants
- → Male applicants offered a higher salary ($30,200 vs. $26,500)
- → Male applicants received more career mentoring offers

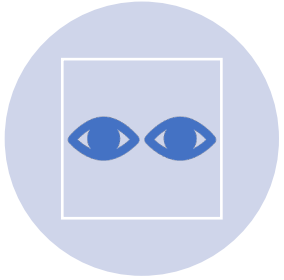
EXERCISE – Decision under pressure

- We will form two groups.
- Here is the scenario: You need to fill a postdoctoral position and have 3 promising applications.
- Now you have to decide on one of the three candidates and find a consensus in your group.
- And have only 6 minutes to do this...

EXERCISE – Decision under pressure

What information stood out most to you when making the decision?

Which aspects were ignored or overlooked?



Did prestige, gender, or language influence your judgment unconsciously?

Would you decide differently if you had more time or clearer criteria?

STUDY 5 – Hiring as Cultural Matching (Rivera 2012)

Study design: 120 interviews + participant observation in elite law, banking, and consulting institutions

- → **Core finding:** Hiring is not only about skills, but strongly about cultural matching between candidates, evaluators, institutions
- → **Cultural fit as top criteria:** Over half of evaluators ranked "fit" above analytical or communication skills in job interviews
- → Institutions achieved surface-level diversity (gender, race), but deep-level cultural homogeneity

STUDY 6 – The Motherhood Penalty (Correll et al., 2007)

Definition: Mothers judged less competent & committed than equally qualified non-mothers

- → required higher test scores
- → offered ~7–8% lower starting salaries
- → rated as less promotable & less likely to be hired (47% vs. 84%)
- → fathers not penalized – in some cases even advantaged (higher commitment ratings, salary premium)
- → audit study of real employers: Mothers received half as many callbacks as equally qualified non-mothers

2 Solution strategies

IMPLICIT **biases**

Why are biases particularly effective in science in...

- grading & PhD mentorship?
- professorship appointment procedures (‚Berufungsverfahren')?
- other hiring processes?
- publication processes (if not blind/double blind)?
- research in general?
- third-party funding allocation?

EXERCISE – Solution strategies

→ Work in pairs, choose one of the previous areas and discuss together:

- What could be done on an **individual level** (e.g., awareness, reflection, daily practices)?
- What could be done on a **structural level** (e.g., standardized procedures, transparency, institutional policies)?

IMPLICIT **biases**

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INDIVIDUAL – 1. Train Awareness

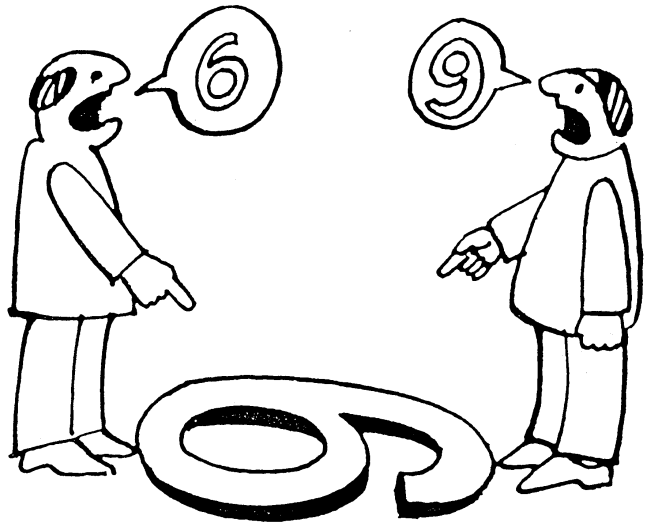
- **Checklists:** e.g., before making a decision, go through the following: Have I assessed all candidates according to the same criteria? Am I influenced by prestige, language, or appearance?
- **Reflection Questions:** Would I make the same assessment if the person had a different gender, name, or accent?

INDIVIDUAL – 2. Slow down decisions

- avoid “fast thinking” (Kahneman)
- consciously plan breaks so that you don't make decisions based solely on ‘good feeling‘
- example: When making appointments or writing expert opinions, take a second look after some time has passed

INDIVIDUAL – 3. Practice Perspective-Taking

- put yourself in the shoes of students, applicants, or colleagues from different backgrounds
- **short exercises:** How might this situation appear from the perspective of an international doctoral student or a female colleague?



https://medium.com/curious/why-does-every-voice-matter-the-importance-of-hearing-different-perspectives-eeba7409558b

STRUCTURAL – 1. Transparent Criteria

- clear, predefined evaluation criteria for examinations, appointments, and funding decisions
- publishing and communicating these criteria creates fairness

STRUCTURAL – 2. Standardized Feedback

- standardized forms for exams, applications, or evaluations to reduce subjective variations
- prevents women/PoC from receiving different labels (e.g., “diligent” vs. “brilliant”)

STRUCTURAL – 3. Blind review

- (where feasible)
- anonymized reviews, applications, or manuscript evaluations
- reduces bias based on name, gender, or institution of origin

Check-out

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What is today's biggest *TAKE-AWAY* for me?

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LET'S STAY IN CONTACT

DENKFABRIK DIVERSITÄT

DR. JULIEN BOBINEAU

→ julien@denkfabrik-diversitaet.de

→ +49 175 85 00 194

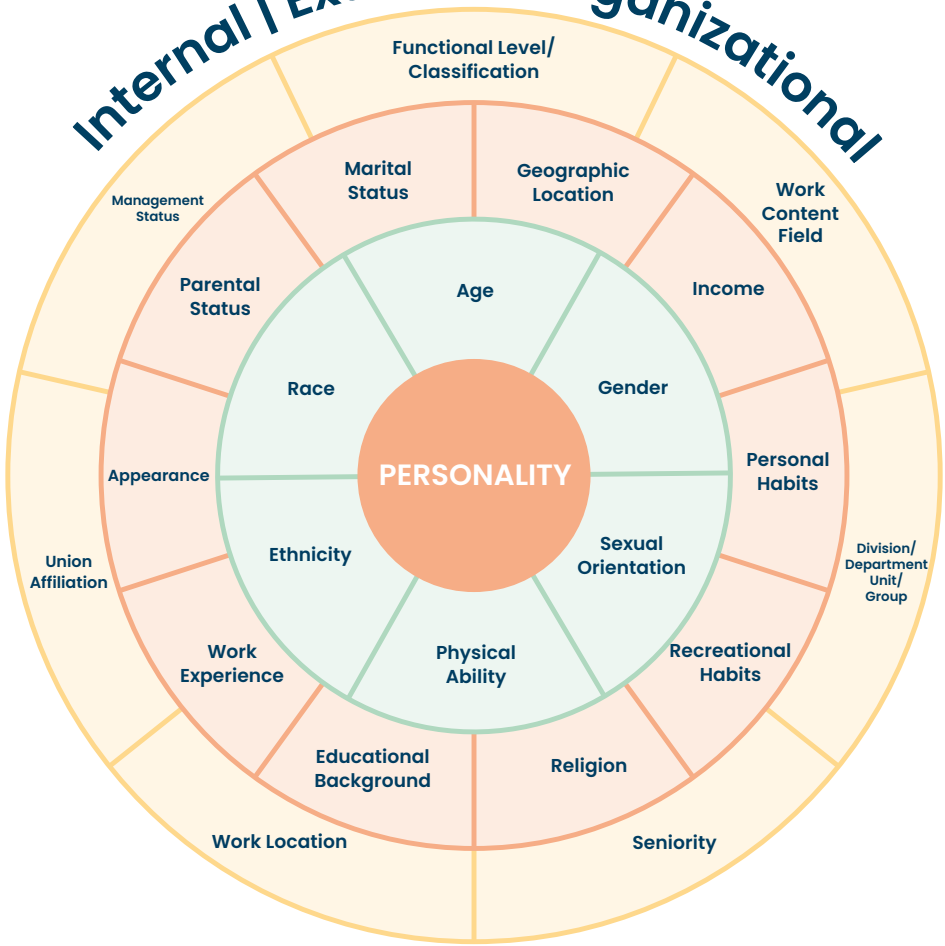
→ www.denkfabrik-diversitaet.de

1 Introduction

What is the first thing you notice?

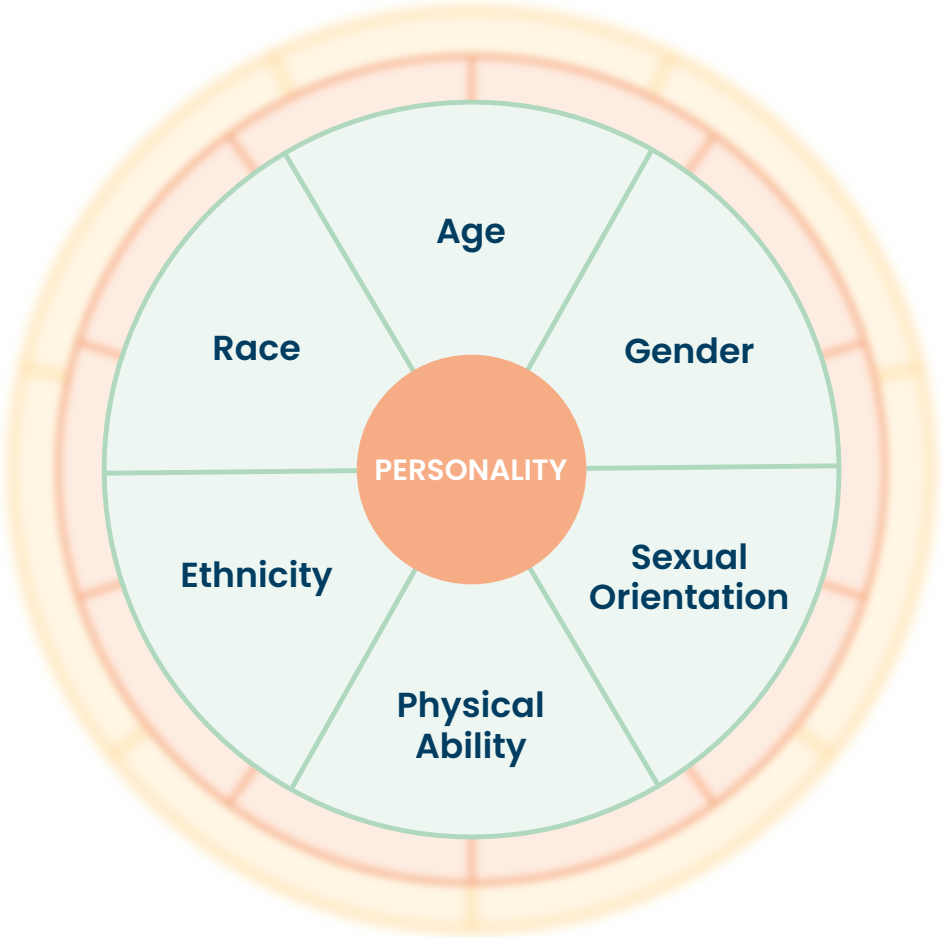
The Four Layers of Diversity and the „BIG 6"

- Internal dimensions = unchangeable
- The "Big 6" (internal dimensions + religion) are protected by law
- External dimensions are considered to be changeable



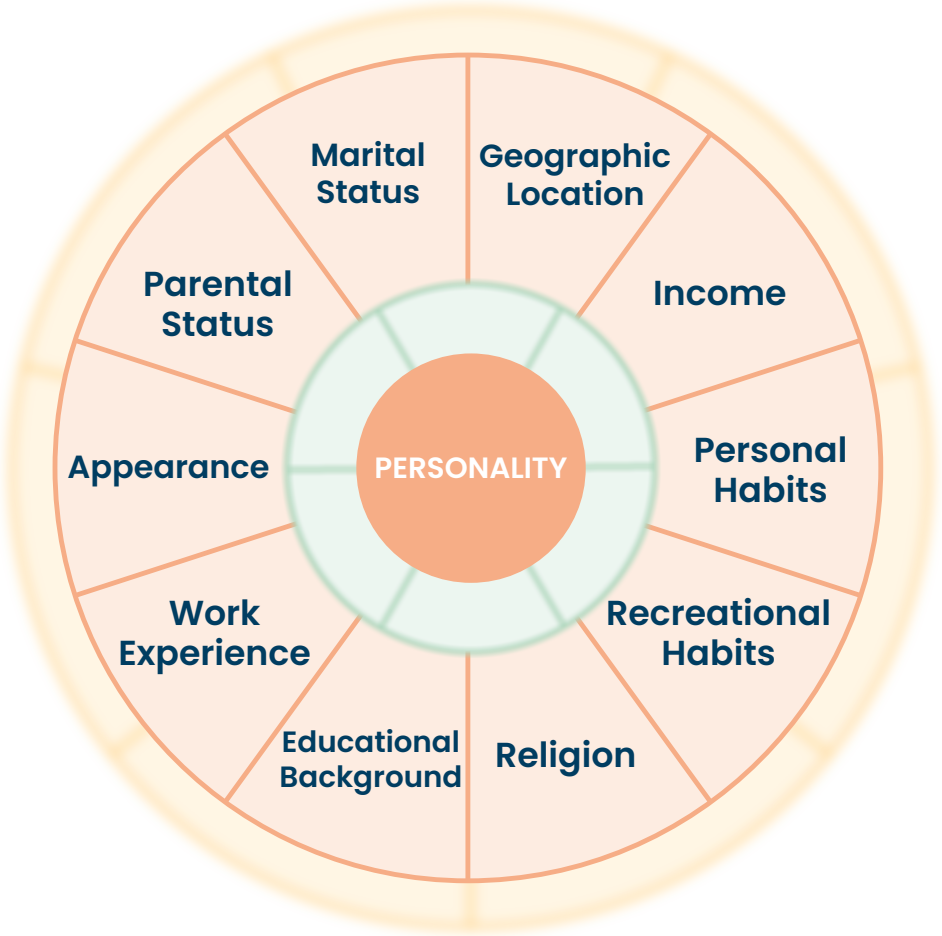
Source: Gardenswartz/ Rowe 2023: The Four Layers of Diversity.

The Four Layers of Diversity and the „BIG 6"



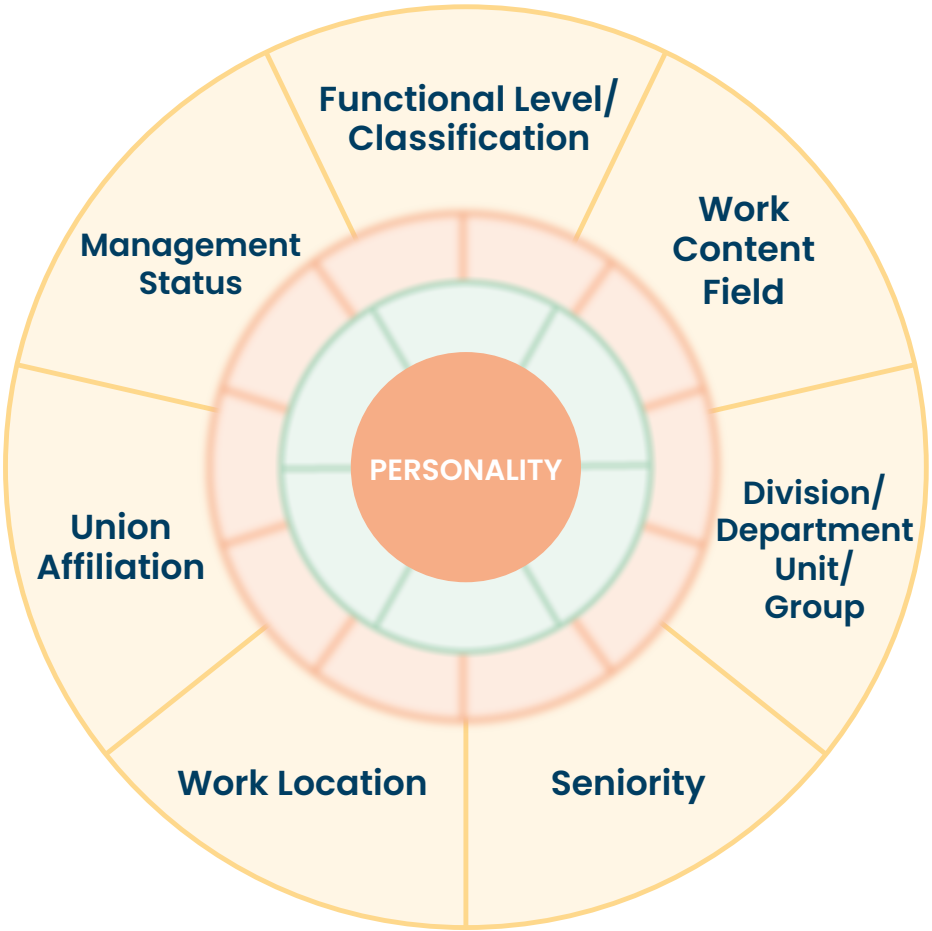
Internal dimensions

The Four Layers of Diversity and the „BIG 6"



External dimensions

The Four Layers of Diversity and the „BIG 6"



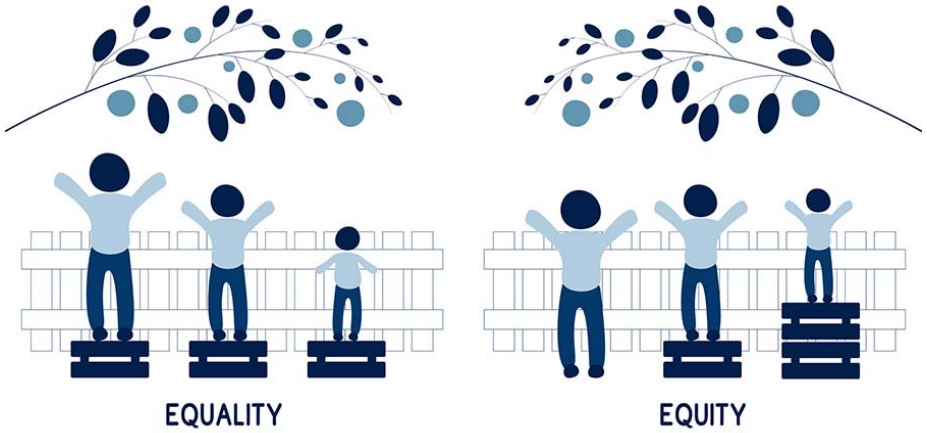
Organizational dimensions

Why do we need DIVERSITY in Academia?

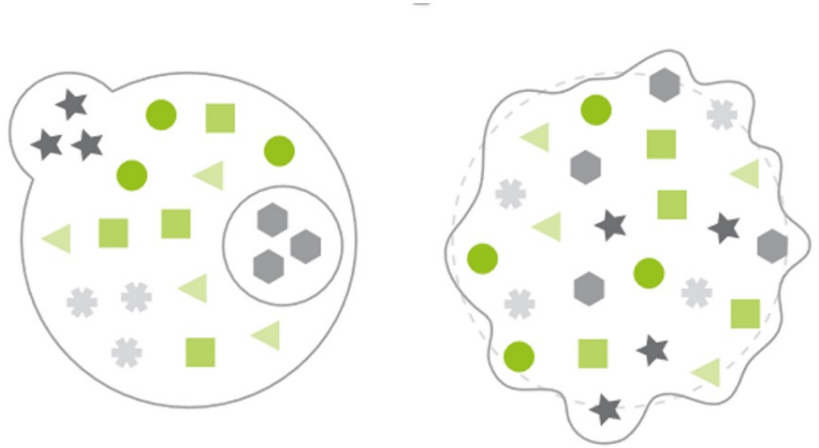
- Diversity in society is a fact. Universities need to be representative.
- Diversity in the University: Who gets a chance? Who can succeed? Who makes decision and who shapes the curriculum?
- Diversity in Research: What and who is researched? How is the research framed? Where is research advanced?
- “Greater diversity in terms of both gender and ethnicity, is correlated with significantly greater likelihood of outperformance". (McKinsey & Company 2020: 47)

Equity & Inclusion

Equality vs. Equity



Integration vs. Inclusion



Sources: STEP, 2024 (left); Altgeld/Latteck, 2021: Inklusion und Gesundheitsförderung (right)