Unconscious bias in academia

A threat to meritocracy and what to do about it

Jadranka Gvozdanović and Jemimah Bailey

Introduction

The belief that academia is a meritocracy (Scully 1997) has been a long-standing tenet of university life, drawing on ideals that position academic institutions as gender-neutral organisations, where academic advancement is the result of a combination of hard work, talent and merit (Nielsen 2016). Meritocracy means that within academia all individuals should experience the same opportunities for advancement, irrespective of gender:

Advocates of meritocracy stress that in true meritocratic systems everyone has an equal chance to advance and obtain rewards based on their individual merits and efforts, regardless of their gender, race, class, or other non-merit factors.

(Castilla and Benard 2010, 543)

Recent literature confirms that gender continues to have an impact on advancement and opportunity in academic institutions, particularly when it comes to recruitment and promotion pathways (Chapters 3 and 4). The complexities of these procedures, practices and decision-making processes have been explored by a growing body of researchers (Van den Brink and Benshop 2012) illustrating the gendered practices in recruitment and selection procedures. The study by O'Connor and O'Hagan demonstrates a broad lack of awareness of the gendered nature of the subjective constructions of excellence (2015). As outlined by Foley and Williamson, an increasingly common explanation for the perpetuation of such gendered inequalities is that 'women face routine discrimination arising from unconscious (or implicit) bias, defined as attitudes or stereotypes that affect perceptions and decisions in a non-conscious manner' (Foley and Williamson 2018, 35).

In an early age educational environment that simplifies the world's complexities by attaching to them a reductionist number of classifying labels, these labels become internalised as stereotypes, leading to selective perceptions that accord with internalised concepts. Children recognise stereotypes by the age of six and behave in accordance with them by the age of nine (Rippon 2019). These stereotypes

are culturally entrenched and reinforced in sociocultural settings. The connections made in the brain by such formative experiences can be overcome, but changing conditioned behaviour is a painstaking and slow process. This holds for individuals and for social structures, which in turn relate to prevailing power relations. Academia hinges on power structures legitimised by achievement and merit. Assessing achievement is the key issue to guarantee progress and access to resources, raising the question of whether this is conducted in a fully meritocratic way.

Since Berger and Luckmann's (1966) research, data in psychology, cognitive neuroscience and social science have shown that concepts about social groups are constructed (Schiebinger 2014) and that the human brain is plastic and permeable (Rippon 2019). Yet internalised concepts are extremely difficult to mitigate and statistics show that progress is extremely slow in spite of several decades of accumulated knowledge about skewed perception and judgement of women and minorities. Valian's (1998) work provided telling evidence on how social stereotypes influence individual behaviour. Twenty years after Valian's study, these inequalities are still in place (see Chapter 1), representing a major loss of talent. As argued elsewhere in this book, gender equality is an essential component of a fair and democratic society and, just as importantly, gender equality also enhances the relevance and validity of research and education so that both can better respond to global challenges and meet the diverse needs of society.

This chapter investigates the key areas in which meritocracy happens to be circumvented and provides examples of best practice which have been introduced in academic institutions to mitigate and eliminate bias. Its primary focus is on gender bias, since women are as well-educated and as gifted as men, yet they experience many more obstacles in their careers than their male peers. It is also important to acknowledge that other forms of unconscious bias connected with, for example, race, class and sexuality also intersect with gender. The chapter starts by examining the definition, causes and impact of unconscious bias in general, then moves on to detail the problem of unconscious bias in academia and to explore some of the strategies adopted to tackle it.

Awareness of unconscious bias and its impact

What is unconscious bias?

Unconscious bias is also referred to as implicit bias and occurs:

when we make judgements or decisions on the basis of our prior experience, or own deep-seated thought patterns, assumptions or interpretations, and we are not aware we are doing it.

(Royal Society 2015, 2)

This type of bias can contribute to various forms of inequality and, in the case of gender inequality, it can result in the needs and viewpoints of different genders

being absent, overlooked or dismissed. When it comes to research, there is a danger that unconscious bias can lead to gender-blind or gender-biased research. In relation to recruitment and assessment of individuals (see Chapter 3), it can hamper objective and fair judgement, thereby undermining claims of meritocracy.

Why does unconscious bias exist?

Broadly speaking, individuals respond on the basis of internalised schemas used to make the task of processing information efficient and manageable. However, these useful cognitive ‘shortcuts’ can also mislead since they reinforce information that confirms expectations. Recipients pay less attention to contradicting information, thereby introducing or reinforcing bias. Bias is at play in multiple everyday situations and there are many areas that are influenced by bias, among them ethnic and regional identity, race, age, class, sexuality, faith beliefs, body ability and gender, in all of which intersectionality effects may also prevail (Gvozdanović and Maes 2018). Part of the explanation for this process is the way in which the human brain operates at both conscious and unconscious levels, captured by Kahneman’s ‘dual processing model’. Kahneman (2011) explains that the brain is constantly taking in a massive volume of information and, when only a tiny portion of this information can be processed consciously, the vast majority of it is processed subconsciously. The subconscious mind seeks to simplify and to make assumptions and is not adequately skilled at the type of rational or analytical thinking required for making good decisions, since it jumps to conclusions and is influenced by irrational and biased assumptions.

What are the roots of unconscious bias?

Unconscious or implicit bias is developed and maintained from experience, culture and processing of information from sources of external communication such as the media. Hence, through observed patterns of behaviour for example, certain occupations are associated with a particular gender, which subsequently becomes hard-wired into the unconscious brain. The risk is that these observed patterns frequently lead to assumptions that only certain groups of people have the innate qualities that make them suitable for certain roles such as nurse, judge, housekeeper, astronaut or professor. The unconscious brain:

begins to expect [these patterns] with the result that other patterns or combinations start to feel less “normal” and more challenging to process. If left unchecked this can lead us into (at best) lazy stereotypes and, at worst, prejudicial or stereotypical behaviours.

(Royal Society 2015, 2)

The media can also reinforce and sometimes challenge unconscious bias, for example by reinforcing gender stereotypes in advertisements or current affairs coverage of events and issues. Another important element is the influence of families and

close circles of friends who make up an individual's 'in-group', those who identify with one another based on factors such as gender, ethnicity, geography and other demographics, leading them to judge those outside the 'in-group' more harshly. Consequently, it is important to become aware of when the unconscious mind might be influencing behaviour and decisions.

How does unconscious bias affect behaviour?

There are particular circumstances when individuals are more likely to be influenced by unconscious bias, such as when cognitively overloaded, physiologically under-resourced, emotionally charged, dealing with complexity or contradictory information and when under time pressures. All these circumstances can increase the chance of acting on the short-cuts in judgement created by the unconscious mind. Behaviour can be influenced at the interpersonal level (for example, warmth or lack of warmth towards and from colleagues); in recruitment and work allocation; listening; providing feedback or performance evaluations; informal networking, coaching and giving or receiving advice. Academic processes are not free of unconscious bias where important career-impacting decisions are made, for example in academic recruitment, retention and advancement, as well as in the allocation of research funding (Chapters 3 and 4).

Unconscious bias in academia

In a recent investigation initiated by CNRS, French and Canadian cognitive psychologists investigated 40 selection processes in different scientific disciplines over two years and found that committee members who associate 'science' and 'male' in association tests had a positive bias towards male candidates applying for scientific directorships (grade A professorships) (Régner *et al* 2019). These results are in line with previous research that established an inverse relationship between the percentage of women in science and stereotypical association of science with men (Miller *et al* 2015). The League of European Research Universities published a paper outlining the evidence for how implicit (or unconscious) gender bias creates a 'significant impediment to women's advancement in an academic career' (Gvozdanović and Maes 2018, 3). Many of the factors identified in the LERU report are also explored elsewhere in this book (see discussion of *SHE figures 2018* in Chapter 1). Some key findings highlighted by Gvozdanović and Maes (2018) are detailed later in the chapter.

Findings on bias in recruitment and career advancement processes

Recruitment and selection

Standards of meritocracy can be circumnavigated in a number of ways. For example, despite the official adoption of rules of transparency in academic

organisations, internal policies and processes allow pre-selection of candidates, even when posts are openly advertised (Nielsen 2016; Van den Brink 2010; Husu 2000). Research into professorial appointments shows that the commonly used mechanisms in recruitment and appointment are often disadvantageous for the appointment and careers of academic women (Van den Brink 2011; Van den Brink and Benschop 2011). ‘Those mechanisms include academic networks that are predominantly male and the way in which scientific excellence is defined’ (Gvozdanović and Maes 2018, 11). Not only are female candidates expected to perform better in order to be judged the same (Heilman and Haynes 2008; Kaatz *et al* 2014) but expectations and requirements of international mobility and employment at overseas institutions place an additional strain on women during a life phase when they could typically be making decisions about or having children.

Some national research authorities have adopted regulations to discount for career breaks, which more often, though not exclusively, affect female researchers:

The UK research evaluation system Research Excellence Framework (REF), through which research funds are distributed to universities, explicitly allows for discounts in the number of publications relative to the time available, to cover circumstances such as career breaks and parental leave. Similar rules are applied in Germany.

(Gvozdanović and Maes 2018, 13)

Both publication output (Maliniak *et al* 2013; West *et al* 2013) and teaching evaluations (McNeill *et al* 2014) have been shown to be rated in a gender biased way, which disadvantages female candidates. Alongside this, recommendation letters for female candidates have been shown to contain more negative language, unexplained statements and faint praise (Trix and Psenka 2003; Madera *et al* 2009). The Massachusetts Institute of Technology Report found that ‘the proportion [of a letter] devoted to intellectual brilliance compared to temperament is much less for women than for men’ (2011, 14).

Research evaluation

Gvozdanović and Maes (2018) indicate that female researchers secure less funding than their male counterparts, particularly when it comes to starting grants, which is likely to have a detrimental impact on early stage careers. A study by Lee and Ellemers (2015) of research applications in the Netherlands found clear evidence of bias in evaluation and success rates (by 4 per cent favouring male applicants) along with the use of biased language in instructions and evaluation sheets. Male applicants scored significantly higher on ‘quality of researcher’ evaluations. This gave them better success rates, though they did not score any higher than women on the ‘quality of proposal’ evaluations.

Working conditions

Working conditions can be shaped and reshaped by academic institutions and it is here that leadership (see Chapter 11) holds some responsibility. Evidence points to female scholars being continually disadvantaged through holding precarious contracts (Chapter 2) and by the gender pay gap (Chapter 7). This contrasts with evidence that male and female researchers do equally well under comparable circumstances and when given equivalent resources (Faniko *et al* 2016). Why do universities not treat male and female researchers as fully equal? Causes for unequal treatment include differences in the type of institution, teaching load (typically higher for women scholars), funding and unequal amounts of research assistance (Ceci and Williams 2011). All these factors have an impact on research productivity and affect women's career prospects (Chapter 4), sometimes influencing them to leave the academic world altogether, often at a significant point in their career.

Precarious contracts

Precarious working contracts include contracts of under 12 months, student contracts and hourly paid teaching or research contracts for non-students. These are a major source of uncertainty for early stage researchers and academics. Across the EU, 8.1 per cent of female, compared with 5.2 per cent of male, researchers are reported as in precarious contract positions (European Commission 2019). The impact of such arrangements is explored in detail by Murgia and Poggio, who note that 'women more often occupy precarious positions, either working part-time or working in conditions that lack stability or opportunities for career advancement' (2018, 3). Precarious contracts are endorsed by senior academics, leaving early stage scholars vulnerable to exploitation, particularly when those scholars are at a life stage when decisions about having children are also being made (see Chapter 5). Becoming a parent is usually accompanied by a career break, and this affects women more often than men, particularly in the absence of supporting measures to help the returning new parent resume their research. Disadvantageous working circumstances also inhibit publication productivity, which is in turn linked to less high-profile citations (Van den Besselaar and Sandström 2017). Lower productivity leads to less research funding and lowers the chances for accessing a leading role in academia. This vicious circle is a major effect of precarious positions, more often associated with women than men.

Addressing unconscious bias in universities

Gvozdanović and Maes (2018) identify three key functions and factors crucial to mitigating the effect of bias: leadership, vision and strategy; structural measures; and effective implementation.

Leadership, vision and strategy

First, Gvozdanović and Maes (2018) identify the crucial role that leadership plays within academic institutions in tackling the effects of unconscious bias:

Leaders are better placed than anyone else to explain why change is necessary . . . and [to] provide incentives for supporting change while upholding and safe-guarding academic excellence.

(Gvozdanović and Maes 2018, 15)

The authors note that leadership is founded on taking responsibility at a local institutional level, arguing that ‘knowledge about implicit bias and how to mitigate or prevent it should be an integral part of leadership training’ (Gvozdanović and Maes 2018, 16). LERU universities express this commitment by appointing an equality representative to governing bodies, adopting Gender Equality Plans as part of their university strategies and by introducing bias training and bias observers. For example, the University of Zurich offers a module on gender, diversity and bias awareness in its leadership development programme, which is open to all university staff who have a leadership role. The University of Amsterdam offers leadership workshops and implicit bias workshops. Targeted online training for awareness-raising and action against bias in selection processes, complementing its diversity strategy, is provided by the University of Heidelberg. Action taken by the University of Freiburg to demonstrate the engagement of institutional leadership included: the signing of the German Diversity Charter in 2010 to emphasise its commitment to equality and diversity; the installation of a vice-rectorate for research integrity, gender and diversity in 2014; and regular equality, diversity and inclusion training (Buitendijk *et al* 2019). At the University of Edinburgh, the endorsement of implicit bias awareness and training by the principal (equivalent of university rector) demonstrated senior-level commitment to tackling the issue and led to senior staff taking part in face-to-face training sessions, alongside the development of an online training programme for other staff in the university. It was evaluated by an external assessor and the impact of the training was shown to have led to improvements in unconscious bias knowledge, pro-equality efficacy and a decrease in family versus career stereotyping for women (Gvozdanović and Maes 2018).

Structural measures

Second, alongside the importance of leadership is the value placed on monitoring change, or lack of it, at an institutional level, reviewing the status of the policies and procedures and putting in place the supports and training programmes to tackle inequalities on a systemic basis:

At structural level, the university requires mentoring programmes and training courses of different kinds. Training courses for leadership and committee members should demonstrate how intended and unintended inclusions and

exclusions follow from established practices. . . . Awareness about potential bias is the crucial first step towards reducing bias in individuals and organisations. . . . Awareness raising can act as a catalyst to change.

(Gvozdanović and Maes 2018, 16–17)

As an example of this type of action, the University of Oxford implemented unconscious bias training with the senior management team, which led to a complete overhaul of recruitment procedures for statutory professorships. At Trinity College, Dublin a specific structural measure to address unconscious bias in the recruitment process was introduced with the assignment of unconscious bias observers to selection committees for senior appointments. Observers monitor biased behaviours and recommend actions to address them, thereby improving the fairness of the recruitment system. Such adverse behaviours include devoting more time to some applicants than others; asking different questions of different candidates at interview; making assumptions about candidates based on stereotypes and discussing candidates informally. Observers are also part of academic shortlisting and interview panels in the Department of Chemistry at the University of York while ‘gender vanguards’ are used in a similar way at KU Leuven (Gvozdanović and Maes 2018). The University of Heidelberg also has unconscious bias observers on selection committees and their judgement is part of the decision-making process in professorial appointments. Targets for improvement of equality structures are formulated as part of the university strategy and faculties formulate specific targets to be reached within three or six-year periods. Yearly progress reports are discussed in the university senate. The University of Freiburg has integrated its diversity strategy into the university’s strategic development planning. This means that with each five-year planning cycle the progress of equality initiatives is monitored and assessed. At KU Leuven, annual monitoring evaluates the ‘inflow and through-flow of staff and students with diversity characteristics’ (Buitendijk *et al* 2019, 52).

Effective implementation

Third, Gvozdanović and Maes (2018, 18) explore the measures needed for effective implementation which require transparency, accountability and monitoring: ‘Monitoring needs to accompany and steer any processes . . . implies regular analysis of gender disaggregated data’. The authors highlight the importance of creating an environment which encourages individuals to make themselves accountable for the outcomes and create the conditions for decision-makers to act in line with the goal of mitigating unconscious bias. Partners in the EU-Horizon 2020 Systemic Action for Gender Equality (SAGE) project (2019) also integrated the key functions and factors, identified by the LERU paper, into their Gender Equality Plans (GEPs). The European Commission defines a Gender Equality Plan as:

a set of actions which start by conducting audits of procedures and practices to identify gender bias; move on to identifying and implementing

strategies to address bias; and also set targets and monitor progress via specific indicators.

(EIGE 2016, 1)

The SAGE project recognised that substantial structural change in higher education institutions is needed for gender equality to be realised and it provided an effective example of using a cascade approach to raising awareness of unconscious bias and securing top-level support for change. The SAGE institutional GEPs were developed and implemented as part of this process of structural change.

Gender Equality Plans help with the structural transformation of an academic institution. This requires that the plans be embedded into an institution's structures, systems and cultures; followed up with the monitoring of activities, including resistance, and making ongoing adjustments as necessary. This process recognises that change is never completed, but part of an ongoing cycle (Chapter 10). One part of the SAGE GEPS was the roll-out of unconscious bias training within partner institutions. This was on the basis that unconscious bias and gender awareness sessions should be scheduled for all levels, ideally starting at senior management level and cascading to lower levels. Top down attendance sends a signal to other levels to ensure buy-in and demonstrates commitment to the institutional GEP.

All the SAGE institutions ran unconscious bias training workshops, targeting different groups within the organisations. Some found that gathering the qualitative data on the existing gender culture through focus groups also served as a method for raising awareness of gender equality issues more generally and overcame some ideological issues. Alongside the bias awareness training, institutions ran seminars presenting gender disaggregated data and demonstrating the impact of inequality. SAGE partners produced documents and tools to support the implementation of their GEPs. For example, the SAGE team at Science Po Bordeaux designed a guide on unconscious bias for those involved in selection and recruitment committees. Other institutions organised sessions on career progression for female academics, gender in the curriculum and gender in research. The SAGE (2019) project also produced an online course on *Creating a gender-sensitive institution*, which includes a session on unconscious bias awareness with further examination of the processes involved in mitigating the impact of unconscious bias: www.tcd.ie/tcgel/internationalprojects/SAGE/creating_a_gender_sensitive_institution/index.php

The impact of unconscious bias awareness training

There are a number of approaches for tackling bias at individual level, including unconscious bias awareness training and 'perspective taking' which involves getting participants to reflect empathically on the experiences of those facing prejudice or disadvantage. Devine *et al* (2017) implemented a 'habit-breaking' gender bias intervention at the University of Wisconsin which led to the proportion of

women hired by departments increasing by 18 per cent. Alongside information on how unconscious bias functions, participants discussed specific case studies and learned five evidence-based strategies that have been shown to counteract unconscious bias. These five strategies were first implemented by Devine *et al* (2012) in an intervention aimed at reducing racial bias. They include:

- stereotype replacement, whereby participants recognise stereotypical responses within themselves and wider society, label these and replace with non-stereotypical responses;
- counter-stereotypic imaging, which involves imagining counter-stereotypic ‘others’ (for example a female firefighter) to provide positive exemplars;
- individuating, which relies on obtaining specific information about individuals, to encourage evaluation of them based on personal, rather than group, attributes;
- perspective-taking, by speaking in the first person as if they were a member of a disadvantaged group, to mitigate automatic assumptions about that group; and
- increasing opportunities for contact, a strategy to increase exposure to ‘out-group’ members.

This approach supports the observation by Atewolugun *et al* (2018) on the effectiveness of interactive training sessions. According to their review, there is a mixed picture when it comes to the effectiveness of unconscious bias training. It is effective for awareness-raising of bias but the evidence for its ability to change behaviour is limited. The authors recommend the adoption of bias reduction strategies using: counter-stereotypic examples to challenge unconscious stereotype endorsement; bias mitigation strategies such as structured interviews to reduce the impact of bias to empower recipients to change their behaviour. Crucially they argue for unconscious bias training being used as part of a wider programme:

For organisational level change to happen, organisational structures, policies and procedures must be targeted directly, perhaps overhauled . . . [training] should be treated as just one part of a comprehensive strategy for achieving organisation-wide change.

(Atewolugun *et al* 2018, 9)

Repelaer van Driel (2015) carried out an experiment using a mock hiring methodology, asking participants to evaluate real assistant professor applications, imagining that they were an university employer. Participants were randomly assigned to one of four groups where, prior to applicant evaluation: they read information on the under-representation of women in academia (the impact of unconscious bias via statistics); information on unconscious gender bias (theory of unconscious bias); both of these; or no information (control). Their findings suggest that educating participants about unconscious bias theory is more effective for reducing gender bias in hiring than using statistics to illustrate the impact of unconscious

bias. A meta-analysis of diversity training carried out by Bezrukova *et al* (2016) revealed that:

the positive effects of diversity training were greater when training was complemented by other diversity initiatives, targeted to both awareness and skills development, and conducted over a significant period of time.
(2016, 3)

The report from the Chartered Institute of Personnel and Development concurs with this perspective, noting that while:

training is often well received by participants and can have short-term results, it doesn't usually show a sustained impact on behaviour and emotional prejudice, and alone is not sufficient to create a diverse and inclusive organization.
(2019, 25)

The EU FP7 INstitutional Transformation for Effecting Gender Equality in Research (INTEGER) Project (2011–2015) sought to address gender imbalances in STEM, at both institutional level and faculty, school and department levels through the implementation of Gender Action Plans. Three institutions were involved, including Trinity College Dublin (TCD), The National Centre for Scientific Research (CNRS) in France and Šiauliai University in Lithuania. As part of the INTEGER project, TCD carried out an intervention to address unconscious bias at all levels of the university, from the highest-level senior management team, to heads of school and academic staff, in a six-step process:

- 1 secure top-level buy-in from the highest-level decision-makers (university provost or rector);
- 2 engage decision-makers: unconscious bias briefing by external gender equality champion to influence and persuade key decisions makers (senior management team/college officers);
- 3 train the trainers to build capacity to ensure a broader reach and further sustainability via a three-day training programme by an external consultant;
- 4 disseminate the evidence through events to present the current research literature on unconscious bias and stimulate discussion;
- 5 cascade the message through unconscious bias briefings provided for senior promotions team, junior and senior promotions committees, recruitment panels, principal investigators and anyone who manages or recruits staff;
- 6 institutionalise the process and build unconscious bias sessions into recruitment and promotion decision-making.

Among the tools emanating from the INTEGER project was a case study video on how to go about raising awareness of and addressing unconscious bias. This is available at: www.integer-tools-for-action.eu/en/resource/case-studies

Conclusion

Insofar as unconscious bias plays a role in assessment procedures, for example in recruitment, promotion or funding decisions, it presents a challenge to prevailing meritocratic principles in academia. Meritocracy implies that access to power and resources is granted to those who deserve it. Academics get tenure, secure scarce research funding and publish in prestigious journals through rigorous competition which should naturally drive excellence to the top. The reality is that recognition of excellence on the basis of pure merit does not always work well in practice and can leave talent unrecognised because of the barriers to recognition created by systemic bias (Chapter 3) and other factors. This causes a tremendous loss of potential in academia and in the wider society.

Inequalities resulting from unconscious bias are an institutional problem that require monitoring and structural change to tackle them. Once the problematic areas have been identified, measures with a specific timeframe and allocated accountability can be undertaken in parallel with awareness-raising training for leadership at various levels and staff, especially in recruitment and promotion committees. Early career researchers, often employed on precarious contracts, present a particular challenge to gender equality in academia. Transparency is key to institutional governance, as is monitoring and training in connection with GEPs. Leadership and leaders' vision for gender equality are critical in understanding and challenging unconscious bias by providing the driving force for the required changes.

Isolated initiatives are unlikely to have a sustainable impact on tackling gender inequality and unconscious bias. Collecting data and monitoring change, or the lack of it, is a crucial tool in creating transparency, identifying problem areas and tracking the effectiveness of measures to tackle unconscious bias. There is evidence that unconscious bias can be reduced:

when a sophisticated, habit-breaking design that is long-term and includes awareness-raising and bias mitigation strategies is used . . . [these] should be treated as one step towards achieving organisational change, through awareness raising, unconscious bias change and motivation to act.

(Atewolugun *et al* 2018, 38–42)

It is vital that unconscious bias is tackled not just at an individual level but also systemically at an institutional level, where policies and practices can be introduced to mitigate unconscious bias.

‘Only with targeted counterbalancing activities can university populations truly represent the societies they serve so that talent is not wasted’

(Buitendijk *et al* 2019, 11)

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