Causes and Consequences of Biases and (Gender-) Stereotypes

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Equal qualification, unequal treatment: introduction

Whether you want it or not, biases and stereotypes influence your perception, your decision-making and your behaviour. They affect where you feel secure, why you choose one item over another and to whom you smile. Sometimes biases and stereotypes have no negative consequences. At other times, however, their ramifications are massive and unwanted. Keeping an eye on the influence of biases and stereotypes, and creating a system to counteract them, is one of the key tasks when it comes to realising gender and social equality in organisations.

In a recent study, social psychologists sent CVs to 251 professors of physics and biology with a request to assessment the applicants (Eaton et al., 2020). The CVs for each discipline were almost identical and differed only in the candidate's names, which indicated different genders and races. Overall, female-named post-docs were evaluated as more likable, but less competent and less hireable. Applicants of apparent Asian descent and white applicants were rated as more competent and desirable than seemingly Black and Latino post-docs. Thus, although each candidate was equally qualified, they were evaluated differently based upon their gender and race. Discrimination against applicants based on distinctive characteristics is a finding that is demonstrated in experimental studies on a regular basis (e.g., Moss-Racusin et al., 2012; Steinpreis et al., 1999).

Knowingly and unknowingly, intentionally or unintentionally, recruiters, human resource managers and professors apply stereotypes to job candidates. In doing so, they not only violate laws and potentially miss the opportunity to select truly the best applicants, but also further perpetuate discrimination against women, people of colour, LGBTQ* people, people with disabilities, people from low socio-economic backgrounds, and many others who belong to one or several marginalised groups.

To understand why people, have biases and stereotypes, one must have a look at their function in the context of evolution.

The impressive processes with which our brain processes masses of information: heuristics

Over millions of years of evolution, our brains have learned to filter and prioritise the huge amounts of information that we take in with all our senses. Every moment approximately one million bits of sensory information are reduced to about 2 to 60 bits for attention, perception motion and decision-making (Wu et al., 2016). Furthermore, for the sake of efficiency, our brains use hard-wired rules of thumb – so-called heuristics – that help "making decisions more quickly, frugally, and/or accurately than more complex methods" (Gigerenzer et al., 2011, p. 454). Heuristics are usually applied without any special effort or even awareness and help to make decisions based on limited data and in ambiguous or stressful situations. There are many different heuristics for which our brain has been preprogrammed in the course of evolution. **Here are three examples:**

● When athletes want to catch a ball, they do not sit down and calculate its trajectory. Instead, they start running keeping their eye on the ball. The brain tracks the angle of the eye, thus intuitively adapting their running pace to arrive at the ball's destination at the same time as it (McLeod & Dienes, 1996), a heuristic that can also be found in animals hunting prey (Gigerenzer & Gaissmaier, 2011)[2].

● The so-called scarcity-heuristic automatically leads people to believe that items they would like to acquire are more valuable, the more difficult it is to acquire them (Lynn, 1992). The scarcity heuristic is an important reason why many cultures ascribe a high value to diamonds and also why people were panic-buying and hoarding toilet paper during the Corona pandemic.

● The default heuristic leads people to choose pre-selected options, especially when the decision is not easy (Johnson & Goldstein, 2003). Therefore, in countries where you have to opt-out being an organ donor, the number of donors is significantly higher than in countries where you have to opt-in (e.g., only 12 % in Germany and 99.9 % in Austria).

Generally, heuristics are helpful and ease decision-making processes. However, they entail a certain probability of error. Particularly erroneous heuristics that lead to undesirable outcomes are called biases[3].

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[1] Heuristics can also be learned, for example, through social processes or explicit teaching.

[2] The exact heuristic people use is running "at a speed that [keeps] the acceleration of the tangent of the angle of elevation of gaze to the ball at 0" (McLeod & Dienes, 1996, p. 531). Due to the pandemic the project was prolonged by half a year.

[3] In cases where the information is available, one can calculate the difference between the heuristic prediction and the true value as a statistical error parameter. This parameter is called bias as well and, together with the variance and the irreducible random error, forms the sum of the overall statistical error (e.g., Gigerenzer et al., 2011).

Small mistakes, big impact: biases

Some biases are more general in nature; other biases contribute directly to the lack of equality in organisations. What many of them have in common is that they occur without being noticed. **Here are three prominent examples of biases:**

- The anchoring bias (see e.g., Lieder et al., 2018) leads people to base their decisions on an early available reference point or "anchor". For instance, the first figure brought forward in a salary negotiation by one or the other party has a major influence on the final agreement. Also, vendors actively exploit anchor bias by placing a particularly expensive product of the same category next to a regularly priced one to make it appear to be a good deal.

- Research on the confirmation bias (see e.g., Oswald & Grosjean, 2004) states that we are attentive to information that confirms what we already believe. Confirmation bias affects our search for information, how we interpret this information and what of it we remember. This is not only relevant when we, for instance, look for information online, but also when we judge other people. For example, if we believe that a person is particularly disorganised, we are more prone to notice information that confirms this belief and to ignore contrary evidence.

- Affinity bias means that we prefer people who look, think and act like us. Affinity bias can be found at workplaces, where the people being hired or promoted are similar to those already there. In sociology, this tendency is referred to as homosociality (Hammarén & Johansson, 2014). Importantly, affinity bias not only influences major decisions, like whom to hire, but also gets expressed in micro-behaviours: for instance, we meet with people who are more similar to us more often, we show them approval through nods and smiles and approach them more frequently during coffee breaks. These seemingly harmless behaviours accumulate over time and contribute to the exclusion of people who differ from us, maybe just because of their skin colour, gender, age, social background or disability.

To date, almost 200 different biases have been discovered (see e.g., Wikipedia's „List of Cognitive Biases", 2022) . Although and because it is normal for people to have biases, it is imperative that organisations change their policies and procedures in order to mitigate their potentially negative influences. This is especially true for stereotyping, which is also a biased heuristic, and strongly contributes to the exclusion of people with specific characteristics.

„ Keeping an eye on ... biases and stereotypes ... is one of the key tasks when it comes to realising gender and social equality in organisations."

We all have them: stereotypes

Stereotypes are pieces of information about members of certain groups. Like other heuristics, stereotyping is also evolutionarily hardwired. Whether we want it or not, we quickly and automatically judge others based on their apparent group membership (e.g., Anslinger & Athenstaedt, 2015).

The knowledge underlying stereotypes is culturally shared. This means that people in the same societies share mostly the same stereotypes about the same groups, because they have undergone similar socialisation, absorbing information from by relatives, peers, educational institutions and (social) media over the years.

The crux with stereotypes is that even if we don't fully agree with them, we might nevertheless use them to assess others. Especially in situations where we have limited information, we need to act quickly, we are under a lot of stress, or we simply do not have the cognitive resources or motivation to engage more deeply, we fall back on socially shared stereotypes (e.g., Kauff et al., 2021). Whether the content of these stereotypes is completely outside the stereotype bearer's consciousness, as was assumed for many years, has recently become a subject of dispute again (see Infobox on Unconscious Bias).

People have stereotypes about all sorts of groups, linking alleged characteristics to skin colour, ethnicities, age, sexuality, etc. In the following, we will take a closer look at gender stereotypes, as these influence the structure of our society from the ground up.

Infobox: Unconscious Bias – important, but only when treated right

Since almost three decades, social psychology assumes specific differences between so-called explicit and implicit stereotypes (Van Dessel et al., 2020). The idea is that the content of explicit stereotypes is consciously observable and easily accessible to the stereotype bearer, while implicit stereotypes are unconscious and difficult to access. Furthermore, there is evidence that the statistical correlation between explicit and implicit stereotypes is very low. These findings brought about the implicit assumption that people may not bear full responsibility for their discriminatory actions and prompted many organisations to implement so-called unconscious-bias workshops.

Recently, however, a number of research findings have come to light that are challenging the way we deal with unconscious bias:

- Many trainings which were designed to reduce unconscious biases have been shown to have little impact (FitzGerald et al., 2019). However, there are ways to do it right. An overview of what constitutes good training can be found in Schmader (2022).

- The so-called Implicit Association Test (IAT), a psychological measurement method on the basis of which many assumptions about the existence of (weakly associated) implicit and explicit stereotypes have been made, does not seem to measure what it claims to measure (psychologists call this lack of validity; Schimmack, 2021). Thus, one should be careful not to overvalue the importance of IATs results.

- Finally, the underlying dual-process model describing conscious and unconscious processes has undergone thorough re-analyses and criticism (Evans, 2019). This means that implicit stereotypes and biases may not be as inaccessible as originally thought. People seem to be able to consciously access them. However, whether they would admit this to themselves and others is another question. Trainings can help starting to openly reflect on any stereotypes and biases one may have.

Summing up, addressing unconscious bias is still relevant when done right, but can only be a starting point of challenging systemic inequality in organisations.

Ambitious men & kind women: gender stereotypes

There are specific stereotypes linked to men and women. In most cultures men are generally more associated with agentic traits like being assertive and ambitious, while women are more associated with communal characteristics like caring and warm-heartedness (Sczesny et al., 2019). While men and women do indeed differ in agency and communion (Hsu et al., 2021), research shows that these differences are not innate but socially acquired and change over time as well as depending on the context (Wood & Eagly, 2012).

● **Origins of gender stereotypes**

The reason for gender stereotypes lies in the different social roles which are, and historically have been, occupied by men and women. For instance, seeing relatively more women working in the role of at home caregivers and more men working full-time, leads people to believe that men and women must be fundamentally different (Wood & Eagly, 2012). However, the division of men and women into breadwinners and housewives is historically rooted in women's higher reproductive activities and men's greater physical strength (Sczesny et al., 2019). Although both aspects are nowadays less relevant due to contraceptive methods and less physically demanding work, a division of labour remains, especially due to role expectations.

While there is evidence that competence-related stereotypes about women have changed due to their increased entry into male-dominated fields, a recent meta-analysis reports no change in women being perceived as less agentic and men as less communal (Eagly et al., 2020). This is probably due to the fact that women are more likely to work in communal jobs and men are more likely to work in agency-related occupations. Furthermore, the majority of care and household work is still being done by women[4].

● **Consequences of gender stereotypes**

The underlying causes of the following three phenomena are complex but can partly be explained by gender stereotypes which people apply to others as well as to themselves.

Horizontal segregation describes the previously mentioned fact that women and men choose different professions (He et al., 2019). In 2018, the share of women among doctoral graduates in engineering, manufacturing and construction was 29%, while the share of men in education was 33% (European Commission, 2021; p. 36). It is no surprise that the abilities people assign to the fields closely match the stereotypes of men resp. women, thus being both, consequence and cause of horizontal segregation (e.g., Thébaud & Charles, 2018). For instance, a study shows that women are underrepresented in academic fields (e.g., philosophy or physics) whose practitioners believe that one needs raw, innate brilliance (Leslie et al., 2015).

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[4] While 79% of women do at least one hour of housework a day, only 34% of men do so. Unpaid and paid work combined, women work 55 hours a week and men 49 hours (European Institute for Gender Equality, 2017)

Secondly, vertical segregation describes the fact that on average men hold more occupations with greater status and power. Vertical segregation is influence by the function of stereotypes which is not only descriptive, describing how group members apparently are, but also prescriptive, prescribing how group members ought to be. For gender stereotypes, this means that women and men who do not conform to these stereotypes are socially sanctioned. On the labour market, this especially affects women in positions of higher agency and dominance (Williams & Tiedens, 2016). These women are less liked, less promoted, less supported than their male counterparts, which in turn contributes to vertical segregation.

Finally, the leaky pipeline (for data see European Commission, 2021, p. 181) describes the phenomenon that women are much more likely than men to drop out of universities due to parenthood and family work (Joecks et al., 2014). Role expectations and related stereotypes that describe women as more caring, empathetic and warm-hearted than men are one of the main reasons for this effect. When men begin to perceive themselves and other men as more caring, friendly and helpful, will they be more willing to break down traditional role divisions (e.g., Van Grootel et al., 2018) and share family work with their mostly female partners.

How to counteract biases and stereotypes in organisations

A comprehensive list of methods to counteract biases and stereotypes goes unfortunately beyond the scope of this chapter (a good overview can be found, e.g., in Llorens et al., 2021). However, you will find in this book many organisational measures that will also help to counteract stereotypes and biases in the long run. What they have in common is that they are effective measures for gender equality in organisations overall.
Effective measures:

- **Are data-driven,** i.e., they are supported by a body of regularly assessed data (e.g., data on the vertical segregation within a company or quantity and forms of sexual harassment and their context factors).

- **Are expertise-based,** i.e., the assessed data is interpreted by gender- and diversity experts who develop scientifically supported and tailored measures (e.g., having decision-makers write a justification for a specific personnel decision reduces the influence of biases and stereotypes).

- **Are policy-entrenched**, i.e., the measures must be written down into the rules of an organisation with the aim of making sustainable change (e.g., a measure could be that the number women/men invited to an interview must be at least in line with the general gender ratio in the field and the career level; another measure could be to increase diversity in hiring committees while rewarding the time spent on them).

- **Hold people accountable**, e.g., organisation and department heads must be held accountable automatically and as a policy for (not) achieving diversity goals.

- **Are openly supported**, i.e., organisations must publicly, clearly and continuously commit to concrete equality goals and values (e.g., against sexism).

- **Are funded**, i.e., the organisational fight against bias stereotypes and for equality and diversity cannot be done for free, voluntarily and part-time. In order to facilitate real organisational change, it requires a dedicated team with financial resources and organisational power.

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