

DIVERSITY AND DISCRIMINATION IN RESEARCH ORGANIZATIONS

EDITED BY CLEMENS STRIEBING,
JÖRG MÜLLER AND
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BOOK

Diversity and Discrimination in Research Organizations

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INVESTOR IN PEOPLE

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Foreword

We all know that science is about asking deep questions and finding answers through appropriate methodologies and rigorous academic analysis:

The women did what they were told to do. They didn't ask questions or take the task any further. I asked questions; I wanted to know why. They got used to me asking questions and being the only woman there.

These words by Katherine Johnson, famous black mathematician at NACA-NASA 1953–1986, illustrate the spirit of inquiry that drives research activity and leads to gaining deeper understanding of the phenomena that surround us. One could easily replace the word “women” with “men,” or “African,” or any other name expressing humankind, and the sentence is equally as meaningful. The spirit of inquiry is ubiquitous in humankind regardless of country of origin, race, sexual orientation or social condition.

It is an honor for me to write this foreword for co-editors Dr Clemens Striebing, Dr Jörg Muller, and Prof. Dr Martina Schraudner, as they are bravely dedicating many years of their lives as scientists to comprehending the nuances of the complex interrelations between factors at play in discrimination, and using their knowledge to promote diversity in academic environments. Why do I say that their research activity is brave? On the one hand, because this is one of the research fields in which “hard data” are not easy to collect, that is, often it is not even legal to ask factual gender-related data. On the other hand, because there are important “soft factors” at play, that is, education, personal and social circumstances, therefore making data difficult to interpret. Moreover, as the co-editors say in their theoretical starting points, “discrimination has become more subtle while still producing adverse effects for disadvantaged social groups.” There is no capacity to act on discrimination and diversity if problematic situations are covered up or escape the attention of institutional leadership.

I met Dr Striebing through Dr Elizabeth Pollitzer, Founder and Director of Portia, Coordinator of the GenSET project (European Commission, Framework Programme 7) which established the Gender Summits (GS). I had been collaborating with Dr Pollitzer on gender actions in universities as part of my work as Director for Research and Innovation at the European University Association (EUA). Dr Striebing was one of the GS17 participants (October 3–4, 2019), where I presented for the first time the work of Science Europe on gender

in my third week as its Secretary General. Later, he invited me to moderate a session that was part of GS21 (April 14–16, 2021). We discussed with a panel of experts the challenges and requirements for the development of a standardized survey across Europe to capture gender-sensitive working conditions in research and innovation. Among other conclusions, the discussion clarified the limitations in developing appropriate and reliable benchmarks and highlighted the need to find new ways of including softer factors for policy development, in a way that would allow better comparisons.

Readers will find in this book a collection of rigorous scientific studies on sensitive issues that can lead to discrimination in the workplace in academia or be interpreted as discriminatory behavior. I can see how the outcomes of the discussion held in April 2021 were taken into account in the conduct of these studies: they have integrated into their analysis the “hard” and “soft” aspects in their surveys to produce a series of refined lessons for developing policies targeting discrimination in academia and promoting inclusion and diversity in healthy research environments.

There are many dimensions and intersections in diversity and discrimination issues in academia. Nowadays, many European universities and research organizations are reviewing their policies to include, in addition to gender issues, policies for broad social inclusiveness (ethnicity, disability, sexual orientation – LGBTIQ+ social background, etc.). Science Europe works toward an inclusive research culture (I will come back to this point at the end of the preface), yet our experience so far is mainly on gender.

Let me put this work in the context of my experience on gender equality in European universities and in research funding and performing organizations:

In broad terms, the figures tell us that there is a low percentage of female university leaders, that is, rectors and vice-rectors (18–30% according to EUA figures, 2021), compared with the apparent balanced ratio of female/male doctoral candidates throughout European countries (between 40% and 60% according to Eurostat, no field distinction). In order to promote the role of women in leadership positions in the academic sector and advocate gender equality in higher education and research, a group of women rectors, almost all former members of the EUA Board, created in 2015 the European Women Rectors Association (EWORA). Their regular workshops and conferences are an excellent example of how women leaders can support other women in academia.

For its part, Science Europe published in January 2017 its “Practical guide to improving equality in research organizations.” The guide provided recommendations to research funding and performing organizations in order to: (i) minimize unconscious bias in peer-review processes for project selection and career promotion; (ii) monitor gender equality; and (iii) improve grant management practices from the gender perspective. These recommendations were extracted from policies and experiences of numerous Science Europe members who conscientiously analyzed their gender policies to propose common European guidelines. The recommendations and case studies in the guide fed several projects on gender-sensitive issues funded by the Framework Programmes of the European Commission, namely GENPORT (FP7), ACT (Horizon 2020)

and GENDERACTION (Horizon, 2020). Specifically, Science Europe has been a member of FORGEN, one of the “community of practices” set up in the framework of ACT.

These projects, as well as others funded by the European Commission have been instrumental in sparking and disseminating awareness of gender issues in universities, research centers and the entire academic sector across Europe. In this respect, Science Europe welcomed the initiative of the European Commission to meet the conditions in the Gender Equality Plan as an eligibility criterion for receiving funds from the Framework Programme. I see this as an achievement of many years of work in European Research Area (ERA) policies, in which gender has always been a priority addressed by the European Institutions and pan-European stakeholders such as EUA and Science Europe. I am convinced that this policy will contribute to eliminating gender inequalities, help raise awareness and address intersectoral socio-economic inequalities throughout research and innovation systems.

At global level, hallmark days such as the *International Day of Women and Girls in Science* and the *International Women's Day* are milestones in achieving recognition of the need to address the specificities of women in research and beyond worldwide. The Global Research Council (GRC) – a virtual organization, comprised of the heads of science and engineering funding agencies from around the world, dedicated to promoting the sharing of data and best practices for high-quality collaboration among funding agencies worldwide – published in 2016 its “Statement of Principles and Actions: Promoting the Equality and Status of Women in Research.”

Science Europe is co-chairing the Working Group that the GRC set up in 2017 to contribute to the implementation of these principles. It supports the participation and promotion of women in the research workforce, and the integration of the gender dimension in research design and in the analysis of research outcomes. Regarding the monitoring of gender data, a report that the GRC Gender Working Group published in May 2021 indicated that while over 80% of the funding organizations worldwide collected gender-related data in project-funding applications, only a small number of funders collected data related to the other aspects of the grant management process (and these were mainly in Europe).

Discrimination in academia is detrimental first and foremost to researchers experiencing it, as it affects their mental health. It can also affect colleagues who notice the discrimination and may find themselves in awkward positions, having to choose between being silent witnesses or risk violent treatment themselves if they speak up. Beyond the emotional suffering, there are long term consequences for the careers of researchers, as the adverse conditions may affect their scientific performance.

An important area where universities and research funding and performing Organizations can have a strong impact in promoting equality, diversity, and inclusion (EDI) is through the processes that they use to assess and evaluate researchers and research. Between 2019 and 2020, Science Europe conducted an extensive study of the assessment processes of its members, in order to produce recommendations at institutional level. The study showed that bias,

discrimination, and the unfair treatment of researchers and research projects were central concerns for research organizations. The potential bias that was most often monitored was gender (by 82% of surveyed organizations). Ethnicity and disability were monitored by 31% and 25% of organizations respectively. Science Europe recommended collecting more data to take account of all possible types of bias and discrimination in assessment processes, and also to consider their interconnected nature. In addition, it recommended regular training and guidance on EDI to all research staff and reviewers involved in research assessment processes, as well as continuously evaluating assessment processes against all possible sources of bias. Furthermore, it promoted diversity in evaluation panels and expert reviewer pools that inform assessments.

I find this book to be in line with these recommendations, offering excellent in-depth analysis of the available data and going deeper into the soft aspects of discrimination and diversity to end with a series of nuanced recommendations to both institutional policy makers and research managers. Institutional policy makers strive for policies that can be properly implemented and that fulfill the objectives for which they were created. In this context, defining specific objectives and defining clear positive behaviors, expectations and consequences are essential. Research managers need all possible support and training from their institutional leadership to implement policies effectively.

The three recommendations for policy makers, two recommendations for research managers and the six lessons learned, are not just ready-to-implement advice: The “practitioner’s guide” invites all of us to reflect upon our own perceptions on team processes, on how idealistic or realistic our perspectives on diversity and discrimination are, and on the limits between the institutional and other policies, for example, government policies.

The studies in this book merge hard and soft factors in their analysis on discrimination and diversity, including very sensitive aspects such as implicit or explicit violence toward an individual or a group of individuals due to being “different” from what is considered normal in a research unit, department or institution. While there can be cases of discrimination clearly related to a condition (sometimes intersectional), for example, black and poor women, LGTBI and disabled people, etc., I wonder if typical pressures related to research career progression such as the need to meet certain objectives as in the “publish or perish” dilemma, precarious career paths, and poor reward and incentive systems, should not be an additional factor worth adding in the intersectionality approach.

This brings me to my final point of this foreword: the need to reflect on the research culture(s) in academic environments to foster healthy academic environments

that improve the conditions for researchers and research alike by further advancing European and global research systems towards a more sustainable, attractive, and effective research system. (Science Europe Position Statement on Research Culture – November 2021).

Furthermore, Science Europe strives for an ERA

that focusses on the quality of the research process, full support of scientific autonomy, and the promotion of diversity and inclusion, acknowledging that these conditions will, in turn, foster a productive research system. We envisage a research culture in the European Research Area where a) all participants in the research endeavor are appropriately recognized for their diverse contributions, b) the broad skills and competencies of researchers are fostered and supported by suitable training, appropriate infrastructure, and responsible management and governance, c) research integrity and high ethical standards are promoted effectively, and d) careers in research are attractive and sustainable.

Through the series of studies and their authors' thorough analysis and thinking, this book goes beyond the state-of-the-art in making recommendations for policy makers and research managers, and sets the basis for the design of new group discrimination and diversity policies, creating a fine balance between too general measures, for example, one-size-fits-all policies, and too individualized case treatment. In this vein and in line with the vision above, Science Europe will take into account these recommendations and lessons learned in the action that is about to be initiated to assess the degree of implementation and usefulness of the 2017 Gender Guide and which will expand its remit to incorporate elements of EDI and intersectionality, based on good practice case studies.

I believe that this timely book will bring inspiration to many organizations that are in the process of reviewing and implementing diversity and discrimination policies, and that are moving from exclusive gender male-female policies to diversity policies, thus creating more open and welcoming research environments. While collecting data on individual researchers' racial, ethnic, sexual or religious identities can still be complicated depending on the legal framework and social tolerance, decision makers are in a position to take action by defining their vision for the research culture that they envision in their institutions.

Dr Lidia Borrell-Damián
Secretary General of Science Europe
Brussels, April 2022

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Berlin/Barcelona, April 19, 2022
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Introduction

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Chapter 1

Diversity and Discrimination in Research Organizations: Theoretical Starting Points

Jörg Müller, Clemens Striebing and Martina Schraudner

Abstract

This article outlines the theoretical foundations of the research contributions of this edited collection about “Diversity and Discrimination in Research Organizations.” First, the sociological understanding of the basic concepts of diversity and discrimination is described and the current state of research is introduced. Second, national and organizational contextual conditions and risk factors that shape discrimination experiences and the management of diversity in research teams and organizations are presented. Third, the questions and research approaches of the individual contributions to this edited collection are presented.

Keywords: Gender; comparative research; bullying; harassment; implicit bias

Purpose of this Edited Collection

The era of team science has long since dawned (Wang and Barabási, 2021; Pavlidis et al., 2014). Diverse teams are considered to have the potential to work particularly efficiently. Creative thinking, diversity of perspectives and the ability to solve complex problems might be pronounced in diverse teams, which has not only been shown for multidisciplinary but also gender-diverse teams (Abdalla et al., 1999; Bear and Woolley, 2011; Østergaard et al., 2011). Such skills are key competencies for research organizations that want to be influential and internationally-recognized sites for cutting-edge research.

Diversity and Discrimination in Research Organizations, 3–30



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However, in order for the individual members of a team to work well, research organizations need to provide a productive and naturally non-discriminatory working environment. The fact that bringing together and integrating researchers and their diverse backgrounds in effective teams is precarious due to the structural conditions of the research system – that is, it does not happen on its own – will be further discussed here. To harness the positive effects of diversity, it must be managed proactively (Nielsen et al., 2018). In this context, the edited collection has the following purposes:

- to contribute rare quantitative analyses of the extent of discrimination according to diverse socio-demographic characteristics of individuals in research-performing organizations;
- to contribute analyses of the contextual organizational factors that affect the perception of discrimination within research-performing organizations, and
- to seek the connection to practice by highlighting options for action.

The publication explores discrimination in research organizations, by which we mean all forms of organizations whose main purpose is to conduct research. The focus is on public research organizations such as universities or non-university research institutions (represented in the edited collection primarily by the German Max Planck Society). Research departments of companies – which in our view operate more according to the rules of the private sector than academia – are not included.

In principle, discrimination can be discussed for all areas of society and is regularly relevant simply due to its strong significance for the working climate and the well-being of individuals and teams. The relevance of research-performing organizations as a research topic seems to be additionally given by the political efforts of advanced (trans-)national innovation systems to combat systemic discrimination and the major role that effective diversity management plays for successful cooperative creative processes. At a political level, as editors and researchers active in national and international projects we experience the European Commission as a particularly proactive actor. With its “Horizon Europe” funding programme for research and innovation, the EC also promotes research projects and practical measures to reduce discrimination and create an inclusive research culture in the research systems of its member states. In doing so, it strives to strengthen international mobility and the competitiveness of a common European research area as part of its mandate laid down in Article 179 of the EU Treaty.¹

¹The text of Article 179 of the Treaty on the Functioning of the European Union (2012) paraphrased here is: “The Union shall have the objective of strengthening its scientific and technological bases by achieving a European research area in which researchers, scientific knowledge and technology circulate freely, [...]”

Diversity and Discrimination: A Sociological Definition

Conceptual Understanding of Discrimination

Research on discrimination in the labor market and work organizations has lost none of its relevance. This continued interest by researchers and practitioners is partly due to the fact that discrimination has become more subtle while still producing adverse effects for disadvantaged social groups. Over the decades, theory as well as empirical research has moved away from understanding discrimination as deliberate and intentional acts of exclusion perpetuated by individuals toward more complex and elusive mechanisms including cognitive “implicit bias” (Quillian, 2006), “microaggressions” (Sue, 2010), unfair and biased organizational processes (Nelson et al., 2008), or the systemic nature of what Barbara Reskin (2012) has called “*über* discrimination.”

Nonetheless, while discriminatory practices have become less overt (Sturm, 2001), their effects continue to be felt in a very direct and real way by individuals as well as organizations. Findings presented by Jones et al. (2016) in their meta-analysis show that subtle forms of discrimination are “at least *as* substantial, if not more substantial” (*italics original*) than overt forms regarding diminishing the physical and mental health of individuals, job satisfaction, or organizational commitment, to name just three of its effects. The resulting reduced well-being and self-esteem of staff has organizational-level consequences as employees’ work attitudes decline, turnover intentions increase or job performance dwindles, affecting the overall effectiveness of firms (for a review, see Colella et al., 2012). Thus, while it has become more difficult to detect discrimination, its negative consequences are as direct and powerful as ever, calling for equally strategic and systemic counter-measures.

Discrimination has a long and substantive research pedigree in the social and behavioral sciences, with contributions spanning several disciplines including economics, sociology, psychology, management and law. Although the explanatory models for discrimination differ across these fields of knowledge, there is a certain agreement on its basic definition: discrimination involves the differential treatment of individuals based on functionally irrelevant status cues such as race or gender (Merton, 1972; Altonji and Blank, 1999).

Unpacking this definition first implies recognizing that discrimination is based on group membership and as such it never targets a person due to individual reasons. Discrimination happens because individuals are perceived as belonging to a social group delineated by gender, race or national origin, age, health conditions or disability, religion, and/or sexual orientation (Colella et al., 2012; Baumann et al., 2018). These categories often do not function as unified, mutually-exclusive entities, but rather they “intersect” and can thereby aggravate experiences of oppression and power (Collins, 2015).

Second, discrimination implies an “unjustified” differential treatment that occurs due to social group membership rather than actual differences in terms of task-relevant qualifications, contributions, or performance. Thus, job opportunities, promotions or rewards (e.g., wages) differ between women and men, even when comparing equally qualified and experienced persons. Consequently, discrimination is considered not only unfair but also illegal in many contexts.

Third, discrimination refers to behavior rather than solely beliefs and attitudes. Although the psychological literature predominately explains discrimination with references to prejudice and stereotypes, this is insufficient to constitute an act of discrimination (Fiske et al., 2009). For discrimination to occur, actions need to be carried out that exclude, disadvantage, harm, harass or deprive the members of a less favored group compared to the members of a more favor group. Although most research conceives discrimination as negative behavior against disadvantaged groups, it can also involve positive behavior, that is, giving advantages to already-privileged groups. In fact, as Nancy DiTomaso (2020, 2013) argues, for the perpetuation of social inequality, the

positive actions taken on behalf of those who are already advantaged may be as consequential or more so than the negative actions that deny opportunity to those who are disadvantaged.

Conceptual Understanding of Diversity

Similar to research on discrimination, research on workplace diversity continues to be a burgeoning academic field. As Faria (2015) suggests, diversity research came into being in the US during the 1980s as a specific reaction against the previous social justice-based Equal Employment Opportunity (EEO) and Affirmative Action (AA) policies dealing with discrimination. Driven by an increasingly heterogeneous workforce and economic globalization, these justice-based policies were considered to be inefficient and costly, and replaced in favor of an emerging business case for diversity. Whereas discrimination involves a moral component in terms of the “unjustified” differential treatment (Altman, 2011), diversity relinquishes these moral and legal burdens, concentrating instead on a pragmatic strategy to increase the corporate bottom line (Litvin, 2006). Diversity research therefore attenuates regulatory approaches for ameliorating the negative effects of discrimination and instead emphasizes proactive measures to capitalize on heterogeneous resources available in different work settings. For diversity research, the focus on measurable profits implied the establishment of a matrix of quantification where certain clear-cut, easily observable demographic differences could be set in relation to equally quantifiable, dependent outcomes. Backed up by the predominant positivist research tradition in the US, demographic differences according to gender, age, race as well as functional differences such as educational background were thus operationalized and enshrined as measurable, stable markers of identity to be harnessed by Human Resource Departments and Management for improved profitability.

As a result, a major difference between discrimination and diversity approaches in workplace settings concerns the role reserved for markers of social identity such as age, gender, or race. While diversity scholars conceived these differences in terms of a-historical, personal attributes, discrimination scholars are mostly attentive to the ways in which these individual attributes delineate group-based membership, which in turn is tied to historically-grown positions of privilege and power (Prasad, Pringle, and Konrad, 2006).

Today, diversity research has increasingly overcome its initial and overly simplistic conceptions of fixed identity attributes, partly driven by the largely inconsistent findings of its initial research program, which failed to establish any clear-cut linear relationship between diversity attributes and economic benefits (Haas, 2010). While subsequent work has become more aware of the contextual nuances that moderate and mediate the effects of diversity (van Knippenberg and Schippers, 2007; Joshi and Roh, 2007, 2009), other approaches appear to have come full circle in terms of recognizing the importance of power and status processes for working groups (van Dijk and Van Engen 2013; Ravlin and Thomas 2005; DiTomaso et al., 2007). As van Dijk et al. (2017) rightly emphasize, diversity research needs to take into account that

members of different social groups are likely to be perceived and approached differently because of their membership in a given social category [...] and, in part as a consequence, may behave differently (p. 518).

Diversity and Discrimination — Common Ground

Thus, as these recent developments suggest, discrimination and diversity research are becoming more closely aligned. This is especially apparent from the combination of the underlying psychological models in work groups and their organizational context factors. As we argue, social categorization models need to be combined with status-/power-based approaches (e.g., AA and equal opportunities) to work group diversity, prevent discriminating behaviors and enable organizations to take full advantage of their diverse human resources. Studies of discrimination and diversity appear in this sense as two sides of the same coin, suggesting that measures leading to a reduction of discrimination not only reduce adverse effects at the individual level but also hold the potential to create more productive and effective work environments.

Approaches to Studying Discrimination and Diversity

Levels of Analysis

While research on diversity primarily operates at the level of teams and small- to medium-sized work groups (Roberson, 2019; van Knippenberg and Schippers, 2007), research on discrimination can target the micro-, meso- and macro-level of society or a combination of these levels of analysis. At the macro-level, the magnitude and persistence of discrimination has been well documented in relation to race and gender in employment, housing, credit markets, schooling and consumer markets (Pager and Shepherd, 2008). For example, concerning housing and credit markets, Pager and Shepherd (2008) summarize that “blacks and Hispanics face higher rejection rates and less favorable terms in securing mortgages than do whites” (p. 189). Although differential treatment varies across countries and even cities, discrimination remains pervasive and an important barrier to residential

opportunities. Gender-based discrimination in the labor market – to use a second macro-level example – is just as widespread and structural as race-based inequalities. The wage gap between women and men remains at an estimated 16 percent globally ([International Labour Office, 2018](#)). In the EU-28, women in Research & Development earn on average 17 percent less than their male colleagues (European Commission, 2019). Together with the horizontal segregation of women and men in certain labor market segments and vertical segregation restricting women from access to decision-making positions, these macro-level forms of discrimination constitute defining structural fault lines of contemporary labor markets.

While macro-level accounts usually produce evidence regarding the extent of structural disadvantages between social groups, meso- and micro-level accounts have advanced explanatory models of why discrimination occurs at all. The crucial influence of the organizational climate on discrimination constitutes a well-known example at the meso level. Thus, it has been shown that the organizational climate is the single-most important driving factor for sexual harassment to occur (National Academies of Sciences, Engineering, and Medicine, 2018; [Willness, Steel, and Lee, 2007](#)). On the other hand, micro-level accounts build upon psychology and social psychology to expose the individual-level dimensions of discrimination. Different psychological models exist concerning how prejudice and stereotypes are linked to discriminating actions, such as when implicit attitudes shape the behavior toward others defined by their social group identity ([Greenwald and Krieger, 2006](#)). The contributions of this edited collection in their entirety cover the macro-, meso- and micro-level.

Discrimination and Diversity through a National and Organizational Lens

While considerable advances have been achieved to untangle the hidden dynamics of discrimination in organizations, the collection of research articles presented here makes two specific contributions to the existing literature. First, they contribute research on aggregated and individual identity-related experiences of workplace misconduct at the research workplace. The contributions focus on different socio-demographic groups of people and consider research organizations that operate in different national contexts. The contributions reflect the influence of the systemic framework of academia.

Second, the relationship between diversity and discrimination in the context of the academic workplace is especially interesting in relation to one of the most decisive transformations of the academic environment over recent decades, namely the simultaneous intensification of work and diminishing resources/funding. The introduction of a new managerialism and regimes of accountability has obliged academics to do more with fewer resources and less time. As incipient research shows, the effects in terms of discrimination are particularly felt by minorities and those collectives that are already in more precarious and disadvantaged situations. Although research on the “neoliberal university” is abundant, there is a clear lack of more focused approaches to understand its implications for discrimination as well as diversity in work teams.

The contributions gathered in this edited collection are all situated in different national and organizational contexts, from the USA, France, Germany and Nigeria to Vietnam, and the conditions of academic workplaces in non-university and university contexts as well as public or private research organizations at different hierarchical levels and in different disciplines are examined. These national and organizational contextual conditions must be taken into account when considering the transferability of the results to other contexts, as explained below.

The Relevance of National Context

Discrimination is a persistent phenomenon throughout time, but levels of discrimination considerably differ across countries. As [Quillian et al. \(2019\)](#) show in their meta-analysis of job application field experiments, the strength of racial discrimination can considerably vary across the nine countries included in their study. White job applicants receive up to 65–100 percent more callbacks in France and Sweden than non-white minorities. Discrimination of job applications is weaker in Germany, the United States and Norway, where they receive on average 20–40 percent fewer callbacks. Similar findings are available from the large GEMM study carried out in several EU countries, particularly focusing on hiring discrimination based on ethnic background. Discrimination ratios were the highest in Britain – where ethnic minorities need to send out 54 percent more applications to achieve the same callback rate as the majority group – and the lowest in Germany, where minority applicants need to send out 15 percent more applications ([Lancee, 2021](#); [Di Stasio and Lancee, 2020](#)). Examining religion, the study also finds that in the Netherlands, Norway and the UK, Muslims are “more than 10 percentage points less likely than majority members to receive a callback” ([Di Stasio et al., 2021](#), p. 1316).

Comparative studies examining the effects of perceived discrimination equally attest to country-level differences concerning both gender and race. As [Triana et al. \(2019\)](#) show, differences in outcomes in terms of the psychological and physical health of gender discrimination at work can be linked back to differences in national labor policies and gender-egalitarian cultural practices between countries. To the degree that institutional frameworks such as labor market policies, legal regulations or cultural norms differ between countries, levels of discrimination will vary accordingly. Along the same lines, [Quillian et al. \(2019\)](#) see the comparatively high levels of hiring discrimination in France and Sweden as resulting from unconstrained employers’ discretion that is neither monitored nor held in check by discrimination lawsuits such as in the US.

The role of national context factors for diversity are equally not fully understood. Although [Joshi and Roh \(2007\)](#) highlight national culture as one “distal omnibus” element affecting diversity outcomes, results are not particularly abundant. Early insights suggest that important dimensions of teamwork such as hierarchical versus more horizontal peer-based control structures vary across cultures and can invert the outcomes of diversity. Thus, [van der Vegt, Van de Vliert, and Huang \(2005\)](#) show that in cultures where power is more centralized, tenure and functional diversity are negatively associated with innovative climates, whereas

in low power distance cultures diversity is positively associated with innovative climates.

As the GLOBE study across 62 societies has amply documented, cultural differences not only exist in terms of “power distance” but also regarding other important features affecting diversity climate in work groups such as risk avoidance, performance orientation, gender egalitarianism, or levels of collectivist versus more individualized values (House et al., 2004). For certain areas of diversity research such as the under-representation of women on corporate boards, cultural differences in terms of gender egalitarianism and/or traditional gender roles have been shown to play a decisive role (Lewellyn and Muller-Kahle, 2020). However, since the primary interest of diversity research lies at the work group level, explorations of macro-scale patterns that are so common for discrimination research are rare. Instead, national differences are frequently operationalized in terms of the diversity of cultural values that individual team members bring to the work group (Bodla et al., 2018).

An important additional perspective for understanding the national context of discrimination concerns a situational perspective. Apart from institutional differences in terms of labor market legislation between countries, discrimination has also been linked to historical legacies of oppression such as slavery. Apart from historical legacies, situational accounts frequently also explain discrimination with reference to current economic and demographic conditions or political events (Quillian and Midtbøen, 2021). Right-wing politics stigmatizing certain ethnic or religious groups – for example in relation to terrorist attacks – can fuel discrimination. In situations of crisis such as the recent Covid-19 outbreak, discrimination can be aggravated. As reported by Pew Research Center (2020), 40 percent of black and Asian Americans indicate an increase in discriminating behavior toward them by others since the start of the pandemic. The Covid-19 pandemic has also clearly shown that under conditions of stress or crisis, minorities and marginalized groups will be even further disadvantaged compared to majority social groups (Kantamneni, 2020). However, while the effects of a public health crisis on discrimination have been extensively explored, this is not necessarily true for the effects of economic crises or recessions. Among the few studies directly examining the link between worsening economic conditions and discrimination, Kingston, McGinnity, and O’Connell (2015) show that non-Irish nationals experienced higher rates of work-based discrimination during the recession in 2010 compared to time of economic growth in 2004. Implicitly, there seems to be an understanding that “under conditions of threat (e.g., recessions, downsizing)” or insecurity, organizations and individuals fall back into “a limited set of well-learned and habituated behavioral scripts” (Gelfand et al., 2005, p. 93) to the disadvantage of already-marginalized and excluded social groups.

Overall, it remains unclear how these wider economic situational factors play out in terms of discrimination experiences and possibilities of fostering diverse teams. This holds especially in relation to the transformation of academic life in general. Driven by wider transformations and restructuring of the post-war European welfare states, academic work has experienced dramatic shifts over recent decades. Scientific autonomy has increasingly been replaced with an orientation toward performance measures, a focus on excellence and competition,

entrepreneurship, or the emphasis on cost efficiency (Herschberg and Benschop, 2019). How these recent developments play out in terms of discrimination experiences within academic organizations remains to be more fully understood. The work conducted here at the meso and micro level provides promising avenues for discrimination research. As we will argue in the next section, organizational culture and climate are not only influenced by wider national settings but they also modulate and refract some of these broader national trends with important implications for reducing discrimination and fostering team effectiveness. As the organizational level is the primary work environment in which people interact, it is one of the most important arenas to control and diminish discrimination.

The Relevance of the Organization

Organizational factors play an important role for discrimination rates and experiences in work settings. Organizational policies have also been identified as a crucial element for taking advantage of diversity. Formal and informal structures, organizational culture and climate, leadership or human resources, or workplace composition may all contribute to or attenuate discrimination (Gelfand et al., 2005). For example, transparent and formal evaluation criteria at the organizational level – for promotion or recruitment – can reduce discrimination as decision-making is accountable to objective criteria. Similar, holding managers socially accountable for performance ratings is one of three promising and effective strategies in terms of increasing workforce diversity and diminishing discrimination in companies (Dobbin and Kalev, 2016). In addition to encouraging social accountability, two further factors mentioned by Dobbin and Kalev (2016) to reduce discrimination effectively concern the engagement of managers in solving problems and the increase of contact among people from different groups. Both factors can be decisively steered through organizational policies.

Organizational climate – to mention another important organization-level factor – is a key driver of harassment (Pryor, Giedd, and Williams, 1995). Incidents of sexual and other harassment are more likely to occur in working environments where harassment is “tolerated” by a leadership that fails to act on complaints, does not sanction perpetrators or protect complainants from retaliation (National Academies of Sciences, Engineering, and Medicine 2018). This is especially true in settings where men are overrepresented among staff and at the leadership level. For example, a recent study on sexual harassment of undergraduate female physicists in the US – with women being under-represented in physics – revealed that three-quarters of respondents had experienced at least one type of sexual harassment (Aycock et al., 2019). Organizational-level factors such as the overall gender ratios or the wider work climate are therefore considered key elements that can inhibit or encourage discrimination.

Examining organizational context factors of discrimination more broadly, most evidence from the US is largely based upon plaintiff accounts of discrimination lawsuits. Thus, Hirsh and colleagues (Hirsh, 2014; Hirsh and Kornrich, 2008) show – for example – how several factors such as the previous vulnerable economic or social status, the workplace culture and the workplace composition

affect the perception of discrimination by employees. Similar, [Bobbitt-Zeher \(2011\)](#) exposes how organizational practices and policies combine with workplace composition and gender stereotyping to produce workplace gender discrimination in quite predictable ways. As mentioned, gendered norms of behavior, dress code, or sexualized talk in often male-dominated management and leadership positions create an organizational culture in which discrimination can flourish.

Among the few studies to explore the organizational context via an extensive survey is [Stainback, Ratliff, and Roscigno \(2011\)](#) whose study is based upon a sample of 2,555 respondents to the US National Study of the Changing Workforce in 2002. Corroborating the insights of [Hirsh \(2014\)](#), and [Bobbitt-Zeher \(2011\)](#), the results show that the experience of discrimination is reduced for both genders when they are part of the numerical majority in their organization and where a supportive workplace culture is in place. In their survey among 176 employees in the United States, [Kartolo and Kwantes \(2019\)](#) show that behavioral norms related to organizational culture modulates perceived discrimination.

While the majority of research on discrimination operates with a concept of behavior that disadvantages or harms people, diversity research foregrounds measures that foster a climate for inclusion to take full advantage of diverse assets within work groups. Indeed, promoting an organizational climate for inclusion is not only beneficial at the individual level (e.g., higher job satisfaction, better physical and psychological health) but also improves group-level outcomes such as overall team or organizational performance. As [Brooke and Tyler \(2011\)](#) succinctly state,

[...] by creating an environment in which all employees know they are valued and feel safe from discrimination, every employee can feel comfortable as a valued member of the organization (pp. 745–746).

Along these lines, research from Google regarding the perfect team has underlined previous insights from small group research on the importance of psychological safety for diverse teams ([Duhigg, 2016](#); [Edmondson and Lei, 2014](#)). Risk-taking and making errors – elements that are crucial for innovation – are only possible to the degree that employees feel safe in their team and the wider work environment. Thus, [Reinwald, Huettermann, and Bruch \(2019\)](#) argue – based on a sample of 82 German companies – that diversity climate has positive effects for firm performance, especially where there is a relatively high convergence among employees in their climate perceptions. Similar findings are available from research on military working groups, showing that diversity climate is consistently and positively related to work group performance and that this relationship is mediated by discrimination ([Boehm et al., 2014](#)). Already in earlier work, [Nishii \(2012\)](#) has argued for the benefits of a “climate for inclusion” that reduces interpersonal bias and diversity conflict (see also [Richard, 2000](#)).

While research has established the importance of organizational climate and culture for discrimination and diversity, it is somewhat surprising that one of the

major transformations over the recent decades within academic organizations has received relatively scant attention. None of the aforementioned studies thus far takes into account how academic organizations at large are affected by or confronted with decreasing public funding while having to grope with a heightened sense of accountability. The introduction of New Public Management principles aiming to reduce and streamline a supposedly oversized and inefficient public sector has certainly affected public universities and research institutions over recent decades (Hood, 1991; Newman, 2005). A new managerialism tied to the introduction of Total Quality Management principles (Aspinwall and Owlia, 1997) – for example – as well as a marketization of the public sector have undermined the autonomy and independence of the academy and provoked considerable resistance among scholars. However, although the discriminatory effects of the so-called neoliberal working conditions in academic contexts is a burgeoning field of research (Pereira, 2016; Berg, Huijbens, and Larsen, 2016; Heath and Burdon, 2013; Craig, Amernic, and Tourish, 2014), there is clearly a dearth of studies addressing how the wider organizational culture associated with competitiveness, performance demands, or audit culture affects the perception of discrimination. As some studies suggest, especially vulnerable minorities are likely to be disproportionately affected by these more demanding, neoliberal work environments (Anderson, Gatwiri, and Townsend-Cross, 2019; Cech and Rothwell, 2020).

Risk Factors of Discrimination in Research Organizations

From the perspective of a researcher in the European Union, it should be noted that there is hardly any other sector in which such highly-qualified personnel work under comparably insecure working conditions as in academia. As editors of this collection, we do not believe that scientific and non-scientific employees in research organizations experience discrimination or workplace misconduct more frequently than in other sectors (for a discussion for sector differences in bullying, see Keashly, 2021). However, depending on the contextual conditions of the academic sector, very specific patterns of structural discrimination emerge.

From a governance perspective, discrimination can take place especially in situations where *effective* structures are lacking that may constrain decision-makers to minimize the influence of bias on their decisions (Williams, 2017). This refers to accountability structures as well as checks and balances in decision-making processes and procedures that aim to reduce or dissolve one-sided dependencies between the individual actors in the research system (e.g., staff councils, PhD schools, supervisory committees, equal opportunities officers, representatives for the severely disabled, transparent and binding promotion criteria, etc.). Where such structures are lacking, a high degree of variance in working cultures and leadership styles in the individual teams is possible, with both positive and negative consequences.

The Equal Employment Opportunity Commission (EEOC) – a US federal agency tasked with ensuring the implementation of the applicable

anti-discrimination legislation in the labor market – has formulated concrete organizational risk factors for workplace harassment, which can also be applied to research organizations and academia (Feldblum and Lipnic, 2016). With their understanding of the term harassment, the authors focus on intentional forms of discrimination, as opposed to unreflective discrimination due to cognitive bias or institutionalized structures (such as not counting care periods in the evaluation of performance). In our view, the risk factors named in Table 1 and explained by indicators and anecdotal examples from academia can also be largely applied to systemic discrimination. Table 1 can thus be understood as the summary of the above elaborations on the importance of national and organizational contextual factors.

The anecdotal examples in Table 1 convey the notion that it seems inappropriate to place academia under the general suspicion that experiences of discrimination and discriminatory behavior as well as the negation of diversity are more widespread here than in other workplaces. The heterogeneity of the workforce and the prevailing workforce norms vary between different national, regional, and disciplinary contexts. Furthermore, a vertical and horizontal gender segregation as well as a status- and organization-politically elevated position of leadership personnel are not peculiarities of research organizations. However, discrimination processes in academia *can* be framed in particular by the following distinct characteristics of the research and higher education system:

- the “customer service” provided by scientific staff – that is, teaching students – can certainly be considered an important additional stress factor, which is only present in comparable form in other teaching professions;
- the important role of international mobility for scientific career development, which is explicitly promoted by national and supranational organizations such as the EU and structurally reflected in cultural and linguistic differences in the workforce;
- the shared governance principle of academia (Keashly, 2021), within which the faculty makes the crucial decisions on research strategy and personnel policy. Other staff have a subordinate role. Within shared governance, other university groups are often represented alongside the faculty, and decision-making power is distributed pyramid-like according to seniority: while all of the voices of the few chair holders as “high-value employees” are often heard, early career researchers, non-tenured researchers, administrative staff and the many students are often not represented or they are only represented by a few representatives.

The principle of senior shared governance or “peer principle” is based on a collegial appreciation of the peer’s respective sphere of influence on constructiveness and cooperativeness. For academic leadership staff, shared governance is essentially a peer evaluation system in which each participant is just as powerful as any other. In cases of conflict, this system of mutual tolerance can reach its limits (Keashly, 2021); for example, when the prevailing structures in the

Table 1. Chart of Risk Factors for Harassment and Responsive Strategies (for an extended version, see US Equal Employment Opportunity Commission, 2021).

Risk Factor	Risk Factor Indicia	Anecdotal Examples from Academia
Homogenous workforce	Historic lack of diversity in the workplace Currently only one minority in a work group (e.g., team, department, location)	UK: Brown and Leigh (2018), point out that the proportion of university staff declaring health conditions or impairments with around four percentage is three times lower than for undergraduate students Germany: The proportion of foreigners among academic staff at German universities can be estimated at 12.7 percent (Destatis, 2020) EU: The field of study education has the highest proportion of women among doctoral graduates at 67 percent. The lowest proportion of women (22 percent) is in information and communication technologies (European Commission, 2021)
Workplaces where some employees do not conform to workplace norms	“Rough and tumble” or single-sex-dominated workplace Remarks, jokes, or banter that are crude, “raunchy,” or demeaning	In Nature’s 2021 salary and job satisfaction survey, 32 percent of respondents said they had witnessed discrimination against or harassment of colleagues in their current job. [...] Twenty-seven percent of respondents said they had personally experienced discrimination, bullying or harassment in their present position (Woolston, 2021)
Cultural and language differences in the workplace	Arrival of new employees with different cultures or nationalities Segregation of employees with different cultures or nationalities	In the European Union there is the European Charter for Researchers as well as the article 179 in the European treaty itself where mobility for researchers is promoted and established as a desirable goal. Internationally, thus, is a political target of European academia In general, there is also a difference between academic cultures in America, Europe and Asia. The European approach is about excellence and tradition, research oriented, and multiple languages are typical. Asia is more utilitarian and international, supporting innovation research to promote entrepreneurial thinking, creativity, and global adaptability. In America academia is characterized by democratic and inclusive values with contestation, embeddedness and diversity as constituting elements. Therefore, diversity exists not only by personal cultural diversity and differences but also at an academic level (Boyle, 2022)

(Continued)

Table 1. (Continued)

Risk Factor	Risk Factor Indicia	Anecdotal Examples from Academia
Coarsened social discourse outside the workplace	Increasingly heated discussion of current events occurring outside the workplace	“Social protest movements such as #MeToo and #BlackInSTEM have shone a light on the need for greater diversity, equity and inclusion at scientific institutions worldwide [...]” (Woolston, 2021). In Nature’s international survey, 40 percent of the scientists felt that employers undertook sufficient measures for a diverse workplace (Woolston, 2021)
Young workforces	Significant number of teenage and young adult employees	UK: While the most Professors are aged around 51–55 years, the largest group of academics is in the age bracket from 31 to 35. That is a solid 20-year gap just between the most common ages (HESA, 2014)
Workplaces with “high value” employees	Executives or senior managers Employees with high value (actual or perceived) to the employer, for example, the “rainmaking” partner or the prized, grant-winning researcher	Germany: A professorial employment usually goes in hand with a lifelong calling (except for some states where the first calling is limited or has a try out phase) while scientific employees only have excess to limited time contracts. These are furthermore limited to six years because of the “Wissenschaftszeitvertragsgesetz.” Due to this law, there is a steady fluctuation in the workforce, while the people in charge – the professors – remain in their positions (Bundesministerium der Justiz, 2020)
Workplaces with significant power disparities	Low-ranking employees in organizational hierarchy Employees holding positions usually subject to the direction of others, for example, administrative support staff, nurses, janitors, etc. Gendered power disparities (e.g., most of the low-ranking employees are female)	The staff at most research institutions are differentiated into scientific and non-scientific employees, who in turn have different hierarchical levels with specific status characteristics. A typical differentiation of the scientific career is into the regularly temporary PhD students and postdocs as well as into permanent scientists and chair holders. The non-scientific career is more oriented toward an authority structure; for example, into tariff employees without management responsibilities, unit or team leaders, department heads, and presidential offices

Workplaces that rely on customer service or client satisfaction	Compensation directly tied to customer satisfaction or client service	Teaching courses and related duties (taking exams, supervising academic papers, mentoring) are usually firmly linked to academic careers, and in many countries they are a prerequisite for tenure or the professor. In this sense, academic employees are regularly exposed to a classroom situation in which they depend on student acceptance and cooperation
Workplaces where work is monotonous or tasks are low-intensity	Employees are not actively engaged or “have time on their hands” Repetitive work	As in every workplace, there are also monotonous activities in science, for example, address research, text formatting or repetitive laboratory work. In a survey of employees at the German Max Planck Society, one in two respondents stated that they had occasionally or frequently been instructed to perform work below their own competence level (Schraudner et al., 2019)
Isolated workplaces	Physically isolated workplaces Employees work alone or have few opportunities to interact with others	Depending on the scientific discipline, teamwork has a different status. For example, while life scientists regularly work in teams, law and humanities scholars tend to be lone wolves Canada: The Ryerson University informs on their homepage section “Facilities Management and Development” extensively about existing rules and dangers of working alone or in isolation. A lot of these rules are posed by the Ontario Law, but also by the Environmental Health & Safety Department of the university. Therefore, it seems fairly common that staff has to work isolated or alone. (Ryerson University)

(Continued)

Table 1. (Continued)

Risk Factor	Risk Factor Indicia	Anecdotal Examples from Academia
Workplaces that tolerate or encourage alcohol consumption	Alcohol consumption during and around work hours	<p>NL: The University of Amsterdam introduced a change in policy regarding drinking at the workplace or at events with this: “Having a glass of wine or a beer at a work reception or university event is regarded by many as the most natural thing in the world — but we would like to see the UvA break that mold. Our new alcohol policy will focus on fostering a new social standard in which alcohol consumption is not automatically the norm” (Wiers, 2021)</p> <p>UK: Cross sectional study among university staff: “Over one third (35%) of respondents were classified as hazardous drinkers. Twenty three percent reported having blackouts after drinking and 14% had injuries or had injured someone. The odds of being a hazardous drinker for an employee in central departments (Human Resources, Registry etc.) is only one third of that of an employee in science and health-related departments [...] The proportion of hazardous drinkers was higher in males compared to females (43% and 30% respectively)” (Awoliyi et al., 2014)</p>
Decentralized workplaces	Corporate offices far removed physically and/or organizationally from front-line employees or first-line supervisors	<p>Germany: Germany’s largest non-university research organizations – like Fraunhofer Gesellschaft, the Max Planck Society, Leibniz Gemeinschaft and Helmholtz Gemeinschaft – are constituted as associations of institutes with a coordinating umbrella organization. The Fraunhofer Gesellschaft has over 75 institutes, and the MPS 86 institutes, of which five are even abroad. The Leibniz Gemeinschaft has 96 institutes distributed across Germany and the Helmholtz Gemeinschaft eighteen</p>

academic workplace are questioned, or when a colleague should be confronted due to a biased decision or their misconduct toward groups of people who are not involved in senior shared governance.

In order to make HR processes more professional and rational, the professionalized and clearly more sovereign university administrations in relation to the faculty (Gerber, 2014) today have a variety of different tools at their disposal. As van den Brink and Benschop (2012) argue, these tools like promotion guidelines, gender equality plans, trainings, or participatory decision-making too rarely aim at structural change and take little account of disciplinary specificities (e.g., the pool of female talent strongly differs between computer science and medicine). In particular, the authors highlight that practices aimed at reducing discrimination are closely intertwined with the contextual conditions that gave rise to the discrimination to be combated in the first place. For example, the gender equality officer's say and the rules set for the appointment of a new chair are sometimes undermined by the preferences and informal power resources of the academic management, whereby ultimately the candidate who had been preferred by the institute's management from the beginning prevails in most cases. Accountability structures for strengthening diversity usually lack the binding force and sanctioning power to have an immediate effect (*ibidem*).

At the European level, we observe a growing awareness of the lack of effectiveness of the current gender equality policies and measures in academia, accompanied by the will to strengthen its effectiveness. A particular expression of this attitude is that since 2021 gender equality plans have been declared a mandatory requirement to apply for project funding within the framework of the most important European research framework program, "Horizon European" (European Commission, 2020). Furthermore, within the framework of its Gender Equality Strategy 2020–2025, the European Commission attaches importance to an intersectional approach in which discrimination is not restricted to gender but is thought of comprehensively.

Overview of Chapters

The peer principle as an element of research governance essentially ensures the scientific quality of research. Who else should evaluate the excellence of a research project, research design and researcher, if not their peers? However, as explained above, the peer principle does not guarantee modern and bias-free personnel management as required by a number of state equal opportunity acts.

It is research policy and administrative as well as scientific research managers who are decisively entrusted with the standardization and quality assurance of personnel management in the research system and who thus make an essential contribution to ensuring optimal working conditions for academic mid-level and non-scientific staff as well as equal opportunities when filling professorships. With the studies collected in this anthology, we hope to contribute to the informed action of these central actors in research policy to enable researchers and research teams to operate in optimal conditions. The articles can be roughly divided into two categories according to the guiding questions of this edited collection: macro

studies surveying the extent of discrimination and harassment in research organizations and micro studies exploring the influence of the specific cultural contextual conditions of the academic workplace on experiences of discrimination and harassment related to the diversity of the workforce.

About the Extent of Discrimination in Research Organizations

Striebing's "Max Planck studies" belong to the first category of macro analyses. These are three contributions that resulted from a research project commissioned and funded by the Max Planck Society in Germany on the work culture in its institutes and facilities and in particular on the experiences of bullying and sexual discrimination. The project was carried out in 2018 and 2019 and included a series of qualitative interviews and a full survey of the more than 23,600 scientific and non-scientific employees of the Max Planck Society, which is one of the world's largest and most comprehensive institutions for basic research.

In his first contribution, Striebing explains how the evaluation of the group climate and the leader varies according to the socio-demographic characteristics gender, nationality and responsibility for childcare of the Max Planck researchers. He examines the intersectionality, in terms of interaction effects, of these characteristics, and also considers the context of the respondents' hierarchical position. Striebing proceeds in a similar way in his second contribution. In addition to the researchers, the non-scientific employees of the Max Planck Society are also examined. The question is pursued concerning how the socio-demographic characteristics of the employees as well as the contextual conditions of hierarchical position, scientific discipline and administrative area affect the extent of bullying experiences. In the third contribution, Striebing examines whether men and women in the academic workplace have a different understanding of bullying and sexual harassment and discrimination. The contribution explores patterns of gender-related differences in the self-reporting of acts of workplace misconduct and self-labeling as having been bullied or experienced sexual discrimination and/or harassment.

Pantelmann and Wälty offer a comprehensive insight into the prevalence of sexual harassment among students. They present data from a survey conducted at a German university and critically reflect the role of the university and the work culture in academia in preventing and managing experiences of sexual harassment on campus. The results presented by the authors come from the "Perspectives and Discourses on Sexual Harassment in International Higher Education Contexts" project in which eight research teams from very different international higher education contexts cooperated.

Sheridan, Dimond, Klumpyán, Daniels, Bernard-Donals, Kutz, and Wendt also conducted a so-called campus study, examining the prevalence of hostile and intimidating behavior at the University of Wisconsin-Madison in the US and its variance by gender among persons of color, LGBTQ persons and persons with disability at two different measurement points. More importantly, in their article the authors describe the policy package enacted by the university for prevention and conflict resolution and discuss its effectiveness using their longitudinal data

as well as survey data from training interventions. The authors thus present a very rare evaluation study in the context of discrimination, which is highly relevant for theory and practice alike.

Nguyen, Tran, and Tran contribute a systemic macro analysis of a lower-investment research and innovation system and a different culture. They analyze data from 756 researchers in the Vietnam Academy of Social Sciences, examining differences in the scientific achievements of male and female researchers and investigating the factors influencing them.

Cultural Context Conditions of Academia for Diversity and Discrimination

The discourse in research organizations has a particular influence on how diverse teams and cases of discrimination are dealt with, that is, what is said, how it is said and what can be said. This discourse is the result of the respective organizational and team culture and it decisively determines which experiences are perceived and recognized as discrimination in the organization.

In an experimental survey study, Kmec, O'Connor, and Hoffman presented a representative sample of the US population with a vignette describing an incident of sexual harassment between a department director and one of his team members, asking respondents to rate whether it was inappropriate behavior, sexual harassment, or neither. The authors are interested in the question of whether the respondents' value orientations – in terms of gender essentialism, gender egalitarianism and their belief in meritocracy – significantly influence sensitivity to the perception of sexual harassment.

Of the papers in this edited collection, Vandeveldt-Rougale and Guerrero Morales most directly address the implications of the extension of managerialism and New Public Management to discrimination in research organizations. The authors examine managerial discourse, by which they mean a utilitarian, cost-benefit-oriented way of interpreting and organizing the affairs and processes of research teams. Through multiple case studies from Ireland and Chile, they explore what the focus on the pragmatic exploitation of diversity brings to bear on individuals who experience workplace bullying and discrimination, as well as what the managerial approach to conflict solutions can contribute to ensuring a safe and discrimination-free work culture.

The third discourse-related study in this edited collection is provided by Steuer-Dankert, who deals with diversity belief in a complex research organization. Diversity belief is understood as a working group's belief in its own diversity and the positive benefits of diversity. Steuer-Dankert not only contributes the most comprehensive reflection on diversity management in research organizations among the contributions of this collection, but she also provides answers to another interesting aspect. Previous studies often examine diversity and discrimination in teams under the assumption of a relative constancy of team structures and members, but in a modern innovation system research often takes place in project-wise institutionalized and theme-oriented network structures such as the German Cluster of Excellence examined by Steuer-Dankert. The temporary

network forms a further governance level horizontal to the classic university organization and features independent team interactions and ultimately also a specific organizational culture.

While the aforementioned studies describe individual specific aspects of the organizational culture of research organizations, Gewinner reconstructs the experiences of discrimination of a specific group of people based on biographical interviews. Using Russian-speaking female scholars in Germany, she develops a comprehensive and intersectional theory on the vulnerability of foreign researchers to experiences of discrimination and workplace misconduct.

Since a major aim of this edited collection is not only to understand and describe discrimination in research organizations but also to make a small contribution to reducing discrimination, we conclude by formulating a number of implications for practice. In the concluding chapter, we set out several basic features and requirements for an effective system for preventing and managing discrimination in research organizations and summarize what we consider to be the main lessons learned from this edited collection in a simple catalogue of options for action.

About Our Intersectional Approach

The intersectionality approach assumes that an individual belongs to “multiple categories of difference” defined by socially-constructed categories such as gender, age, or ethnicity that result in a specific set of opportunities and oppressions for each individual stemming from their “blended social identity” (Dennissen et al., 2020; Silva, 2020; Ghavami et al., 2016; Crenshaw, 1991). These intersections of identity and discrimination result in individual experiences of discrimination based on different group memberships. Accordingly, the concrete discrimination experiences of black women – for example – differ from those of black men and white women. An intersectional approach considers the addition of experiences of discrimination, but furthermore also considers interaction effects (Bowleg, 2008). As a result of the intersectional analysis, it may emerge – for example – that black women experience discrimination less frequently than black men or white women, although they experience discrimination due to their status as women and black people. The task of intersectional research is to identify the structural and situational dynamics of discrimination processes and their specific contextual conditions.

The contributions of the edited collection and their framing explicitly follow an intersectional approach. This means that the single contributions not only discuss differences between persons of different genders but also pursue taking into account intersections between identity categories (and the different systems of oppressions represented by them) in the analysis. We apply a broad understanding of intersectionality. Which categorizations are ultimately taken up in the contributions to the edited collection was open and depended on the authors’ research foci and available data. In principle, it is possible to analyze the manifold interactions of gender with racial or ethnic origin, religion or belief, disability, sexual orientation and other categorizations, which can form the starting point for systemic discrimination.

Nevertheless, an intersectional analysis in the strict sense was not always possible. Especially in quantitative studies, large numbers of cases are necessary to make statements with high statistical power and thus not only identify very strong statistical effects. In cases with low statistical power, it was not the interactions of, for example, gender and age that were analyzed, but rather the simple effects of gender and age. In addition, several authors of the edited collection adopt an intersectional perspective when discussing the generalizability of their results. For example, Kmec et al. (in this collection) discuss whether a connection between merit thinking and sexual discrimination could also be proven if the discrimination was not positioned in a heterosexual setting between an old white supervisor and a young white female researcher.

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Part I

**Empirical Findings of Discrimination
in Research Organizations**

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Chapter 2

The Psychological Work Climate of Researchers: Gender, Nationality, and Their Interaction with Career Level and Care for Children in a Large German Research Organization

Clemens Striebing

Abstract

Purpose: This study examines the relationship between gender, nationality, care responsibilities for children, and the psychological work climate of researchers.

Basic Design: Based on a dataset of approximately 2,900 cases, the main effects of gender and nationality, their interaction effect and the interaction effects of gender with care responsibilities for minor children, and with hierarchical position are considered in relation to work climate. Dummy regressions and *t*-tests were performed to estimate and compare the means and regression parameters of the perceived group climate and the view of leaders as evaluated by researchers. The dataset used was taken from a full survey of employees of the Max Planck Society, which is one of Germany's largest research organizations with over 80 facilities and institutes in various disciplines and a focus on basic research.

Results: Gender differences concerning the evaluation of the work climate are particularly pronounced among doctoral candidates and researchers who have a non-EU nationality. Gender gaps increasingly level out with

Diversity and Discrimination in Research Organizations, 33–74



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each successive career step. Additionally, a main effect of gender and a weak interaction of gender and care responsibility for minor children was supported by the data. A main effect of nationality on work climate ratings was found but could not be meaningfully interpreted.

Interpretation and Relevance: The interaction effect between gender and the position of a researcher can be interpreted as being a product of the filtering mechanism of the research system. With this interpretation, the results of the study can plausibly be explained in the light of previous research that concludes that female researchers face higher career hurdles than male researchers.

Keywords: Team climate Inventory; CPE questionnaire; leadership; intersectionality; survey; gender gap

Since 2005, The European Charter for Researchers...

... aims to contribute to a productive and conducive relationship between researchers and their employers or funders. The paper, published by the European Commission, has since been endorsed by some 1,300 research organizations throughout the European Union (EU) and associated countries. With their signature, the research organizations commit themselves to the guiding principles of the charter and thus also to combat all forms of discrimination, to provide equal working conditions for men and women, and to enable nationally and internationally mobile scientific careers (EURAXESS 2021).

The European Charter for Researchers is not the only effort being made to improve working conditions in the research system. The work and objectives of the European University Association as the representative of the university management, Eurodoc for early career researchers, the EURAXESS platform for the promotion of the mobility of researchers, or Science Europe as the representative of the research performing and funding organizations in Europe are complementary and share the same objectives. These efforts of versatile international and national actors have in common the pursuit of the creation of a fair and sustainable as well as inclusive research culture. Despite these laudable efforts, there is a great deal of scientific evidence that shows that the system of scientific research in its current form marginalizes women, foreign researchers, and those with caregiving responsibilities (Zacharia et al., 2020, pp. 34–35; Schraudner et al., 2019, p. 64 ff; NASEM, 2018; Gewinner in this collection).

However, just because these marginalization effects are known and documented does not mean that they are relevant in their effect size and pertinent for individual research institutions. “We don’t have anything like that,” is still a common argument from skeptics in practice, which puts the burden of proof back on those who advocate for a more inclusive work climate in research. Thus, there is a constant need for an evaluation of the situation and for gathering quantitative evidence of systemic marginalization processes in science, to the same extent as there is in other areas of society.

Current research lacks analytical assessments concerning the extent to which the sociodemographic attributes of a researcher influence his or her working climate. Few prestigious projects provide statements on the characteristics of the working climate and the extent of marginalization in science within the European Research Area. One of the exceptions to this tendency is a full-scale survey on working climate that the German Max Planck Society (MPG) conducted in its institutions, in which more than 9,000 of its scientific and non-scientific employees participated. The data from this survey form the basis of this article.¹

The MPG is one of Germany's largest research organizations, with over 80 facilities and institutes focusing on basic research in various disciplines. The dataset obtained from the internal survey conducted by the MPG is the world's largest sample of research on work climate under (comparatively) the most homogeneous organizational and national context conditions to date. Of all the surveys conducted in this context, the MPG study is also the only one that surveys work climate using items validated in psychological studies that can be combined into robust indices.

This study focuses on the examination of the relationship between the gender² of a researcher and the work climate he or she perceives. Using a dataset with around 2,900 cases of MPG researchers, the intersections of gender with other sociodemographic characteristics such as nationality, care responsibility for underage children, and hierarchical position, are considered. In addition, there is also a consideration of the main effect of nationality. The article provides an analytical inventory of marginalization in top research in addition to organization-wide benchmarks and can serve as an orientation for concrete organizational countermeasures for the MPG and beyond.

The article starts with the definition of the object of study, namely, work climate. This is followed by an overview of the current state of research on the relationship between gender and perceived work climate in the research workplace. The hypotheses underlying this study were derived from the current state

¹Other relevant projects are, first, the surveys of the so-called MORE projects 1 to 4. Within the framework of MORE, the mobility patterns and career paths of EU researchers within and outside the European Research Area are investigated. Some 8,500 researchers participated in the survey conducted in 2019 (PPMI, IDEA Consult, and WIFO, 2021, p. 47). Second, a global survey of 32,000 STEM researchers conducted as part of the Gender Gap in Science project funded by the International Science Council and other partner organizations provided comprehensive insights into the different perceptions of the working climate and conditions of male and female researchers (Guillopé & Roy, 2020). Third, in 2020, the UK Wellcome Trust presented the results of a large-scale survey on research work culture, in which over 4,200 researchers – mostly working in the UK – participated.

²This study uses the term “gender,” which relates to a person's identity, whereas “sex” refers to a person's physical characteristics at birth. In the questionnaire underlying the dataset, respondents were asked to “Please indicate your gender.” The purpose of the survey was thus to capture self-ascribed gender identities. Accordingly, this study also uses the term “gender” throughout.

of research. In the next section, the context conditions of the MPG are mapped out before the methodology section presents the dataset that was used, and describes the outcome, predictor, and interaction variables. The data were subjected to linear regression with dummy variables and *t*-tests, and the methodological requirements of these evaluations are also explained in this section. The results of the data analysis are subsequently presented before the findings are interpreted. The article ends with a conclusion that summarizes the main results and discusses the theoretical and practical relevance of the findings and the limitations of the study.

Literature Review

Work Climate as a Research Object and Its Relevance

Work climate can be understood as being the

[...] shared perceptions of and the meaning attached to the policies, practices, and procedures employees experience and the behaviors they observe getting rewarded and that are supported and expected [...]. (Schneider et al., 2013, p. 362)

Following this definition, a distinction must be made between the psychological and organizational work climate (Ostroff et al., 2013). Whereas the psychological climate is concerned with individual workplace perceptions, the organizational climate explicitly refers to the views on the work climate shared by employees. In this context, a distinction should also be made concerning organizational culture. While the work climate is formed by the employees' views on their organizational practices, policies, and procedures, the organizational culture deals with the often implicit and shared basic assumptions that lead to the emergence of certain practices, policies, procedures, and other artifacts (Kuenzi and Schminke, 2009; Ostroff et al., 2013).

The present study deals with the psychological work climate of a researcher, and hence with their individual perception of the research group they are assigned to. The psychological work climate can be divided into five main areas in addition to organizational and subsystem attributes (James and Sells, 1981): job characteristics, role characteristics, leadership characteristics, workgroup, and social environment characteristics (Parker et al., 2003). This study focuses on leadership and workgroup characteristics.

The work climate stands in a complex relationship to the concept of workplace discrimination, which is the leitmotif of this edited collection. While work climate concerns general opinions and attitudes toward the workplace, discrimination – understood as the differential treatment of individuals based on functionally irrelevant status cues (Merton, 1972) – is a concrete experienced behavior. In this sense, those who experience discrimination, bullying, or persistent incivility will logically change their attitude to the workplace, that is, perceive it as having a different, more negative work climate. Accordingly, empirical surveys on

discrimination in the workplace justified their relevance by the consequences that discrimination has on the work climate and individual attitudes to work (Triana et al., 2015; Appelbaum et al., 2012). At the same time, the work climate can either be a breeding ground for discrimination and other experiences of non-scientific misconduct at work, or the basis for effective protection against it (Willness et al., 2007; Giorgi et al., 2016). This is particularly true for sub-dimensions of the work climate such as the diversity, ethical, or the psychosocial safety climates (Boehm et al., 2014; Dalton et al., 2014; Bond et al., 2010). The work climate can thus be regarded as an antecedent, a consequence, and a moderator of discrimination experiences.

It can be assumed that non-scientific misconduct, be it discrimination, bullying, or other uncivilized behavior is primarily reflected on the climatic level. Those affected might view the participatory security in the group or the relationship to their supervisor critically even before they perceive themselves as being affected by discrimination or bullying. Hodgins et al. (2020) describe this phenomenon concerning bullying in organizations as the third face of power, which refers to the preconscious influences people experience that may lead them to act against their own interests. Accordingly, people who experience non-scientific misconduct must deal with whether they want to view themselves as being discriminated against or bullied, whether this understanding would be intersubjectively tenable by their colleagues or a complaints body, and whether they want to take measures to address the situation. In contrast, work climate – especially in its role as a necessary precursor of potential discrimination experiences – enables a more comprehensive assessment of whether and to what extent certain groups of people experience justified or unjustified unequal treatment in the workplace.

Theoretical Assumptions

The theoretical assumptions of the study are mainly based on social role theory and especially its extension, namely the role congruency theory. Here, following Bates (1956), a social role is understood as a more or less integrated and related pattern of social norms that is distinguishable from other norm patterns. Norms, in turn, are behavioral expectations (including stereotypes) that are consistently addressed to the members of a group and are enacted and reproduced, at least by some members of the group. Stereotypes arise when people observe the behavior of other people with certain characteristics (such as gender, class, ethnicity, or religion) and conclude that the behavior of the respective characteristic group results from group membership and not individual preferences (Eagly and Wood, 2012). In a society, people are confronted with different stereotypical role expectations within the social structure according to their respective position, which they can either accept or reject. The acceptance or rejection of a social role represents a process of negotiation between the self and its environment (parents, partner, employer, community, etc.) as a result of which a person reproduces, modifies, or completely rejects an expected role (Eagly and Wood, 2012). If an individual takes on a role, he or she increasingly adapts to this role during socialization by developing specific character traits and skills, and the line between role

expectation and the supposed “natural predisposition” to a certain behavior becomes increasingly blurred (Eagly and Wood, 2012).

By observing purely superficial characteristics, in-groups and out-groups are created by collectives of individuals through the process of stereotyping described above. Such group memberships can be promoted or discriminated against by the observer, depending on their position as a member of the respective in- or out-group (Tajfel and Turner, 2004). The present study assumes that scientific jobs are still characterized by stereotypes that superficially attribute an overall higher competence to men compared to women – by both men and women alike. Williams et al. (2014) call this phenomenon the “Prove-It-Again” bias (see also Moss-Racusin et al., 2012; Sobieraj and Krämer, 2019; Oh et al., 2019). Furthermore, women are significantly more affected by sexism, sexual harassment, and sexual discrimination in the workplace, as was already demonstrated based on the population targeted in this study (Schraudner et al., 2019, p. 64 ff).

Current research provides ample evidence that the pressure for women to assume a domestic role and the likelihood of negative stereotyping as being less competent or committed in the workplace increases when the woman is perceived as a mother (Williams et al., 2014; Williams, 2005; Eagly and Wood, 2012).

Therefore, it can be assumed that the stereotypical discrimination of women, and especially mothers, in occupations that are not regarded as typical female domains leads to a different perception of the work climate on the part of women than of men.

The differentiation of (German) society according to gender roles not only leads to women being stereotypically ascribed greater responsibility for caring for children and other dependents but also to women assuming this responsibility more frequently than men. In Germany, mothers, whether they are single parents or in a relationship, invest an average of about 80 percent more time in care work than men (Institute for Social Work and Social Education, 2020, p. 16). Accordingly, it can be assumed that, on average, female researchers with care responsibilities perceive a higher double burden of work and “private life” than is the case for male researchers with care responsibilities.

It was thus predicted that the perception of the psychological work climate will generally be less positive for female researchers than for males, and even less so for female researchers with underage children at home.

H1. Female researchers perceive their work climate less positively than their male colleagues.

H2. Female researchers that have children under the age of 18 in their household perceive their work climate less positively than male researchers in general, male researchers with children, and female researchers without children or with older children.

According to role congruency theory, it was also assumed that professional pressure and, as a consequence, the probability of professional failure increases more strongly among women compared to men at each level of the hierarchy.

According to [Eagly and Karau \(2002\)](#), this is because management positions are closely linked to a masculine role stereotype, whereby women are regarded as being less qualified to fill a leadership position and are more critically evaluated if they behave appropriately in a leadership role and thereby deviate from their stereotypical gender role.

H3. The gender gap in the perception of work climate increases with higher career levels.

Like gender, the characteristic of nationality (here synonymous with citizenship) represents different role stereotypes and realities of life with which experiences of discrimination can be associated. Firstly, the assumptions of social role theory apply to foreign employees as well. Such processes of demarcation of a national in-group and devaluation of a foreign out-group can also be observed if the members of the supposed out-group come from the same language and cultural area. This is exemplified by [Köllen \(2016\)](#) for employees with German nationality in Austria (see also [Dietz et al., 2015](#)).

Secondly, job mobility is often accompanied by higher levels of social disintegration. If a person moves to another country for a temporary research position, or even permanently, they are confronted with a different everyday language and possibly also traditions, values, and behaviors that might diverge significantly from those of their home country. It also becomes more difficult to maintain social contact with family and friends when living abroad.

Thirdly, in the sense of cultural studies, different cultural areas can be assumed, which are defined by shared values and norms, also regarding the work context, and are compatible with each other to varying degrees ([Hofstede, 2001](#)). Accordingly, the greater the cultural distance between an employee and the culture of their workplace, the more adaption efforts become inevitable, for example, concerning the language used or organizational processes that need to be followed.

Fourthly, a person's citizenship also implies different legal consequences and bureaucratic burdens for foreigners, especially if they do not have a permanent residence permit. These bureaucratic hurdles can also have a significant negative impact on career opportunities such as short-term research stays or teaching positions ([Gewinner](#) in this collection).

It is expected that the described experiences of out-grouping, social disintegration, cultural fitting, and bureaucratic hurdles negatively impact the psychological work climate of the researchers surveyed. In the present study, nationality was operationalized using a trinary coded characteristic of nationality (German, EU nationality, and non-EU nationality). It was assumed that the negative impact due to nationality would be more pronounced for persons with non-EU nationality than for persons with EU nationality. However, it is important to note that these categories include rather different groups of countries: Switzerland, for example, is a non-EU country, but part of its population shares a long common cultural and linguistic tradition with Germany. It can thus be assumed that such heterogeneities dilute the predicted nationality effect. In principle, however, Germany is part of the European cultural area ([GLOBE, 2021](#)), the group of EU

countries only comprises countries of the European cultural area, and the group of non-EU countries extends beyond the European cultural area.

H4. Foreign researchers perceive their work climate less positively than German researchers. Researchers with a non-EU nationality rate their work climate the least positive of all.

The intersectionality approach assumes that due to the manifold aspects of an individual's identity, the experiences of discrimination linked to certain sociodemographic characteristics can overlap in the individual (Crenshaw, 1991). These intersections of identity and discrimination result in individual experiences of discrimination based on different group memberships. Accordingly, the concrete discrimination experiences of black women, for example, differ from those of black men and white women. In the context of the United States, Ghavami and Peplau (2013) show that ethnic stereotypes are more consistent with stereotypes of men in the respective ethnic group than with those of women. Typical gender stereotypes show the greatest consistency with stereotypes against white men and women. Similarly, other studies show that not only stereotyping but also gender-based experiences of discrimination and professional attributions of competence vary significantly between ethnic groups (Tao, 2018; Trauth et al., 2016).

Scott and Siltanen (2017) formulate three features of an intersectional approach to quantitative research based on the feminist literature. First, analyses must be conducted in a context-sensitive manner. Context-sensitivity can be facilitated, for example, by including appropriate variables in a regression equation or by running regressions on different contextual conditions or, when computational inclusion is not possible, by qualitatively explaining a specific context. The context of this study in this regard is presented in the following section. Second, a heuristic approach should be used to identify relevant categories of inequality. In practice, this means that an investigation should partly be exploratory and not too hastily narrow its view of relevant dimensions of inequality according to fixed a priori assumptions. Third, the analysis should capture the complexity of intersectionality and social reality. In this study, objectives two and three were realized by conducting a comprehensive examination of the intersectionality of gender and nationality that includes both an additive and an interactional approach.

Building on the theoretical explanations above, an additive approach is thus reasonable. It was predicted that female researchers will perceive the work climate less favorably and that both male and female researchers with foreign citizenship will perceive a less positive work climate. Based on this, it was predicted that foreign female researchers will report the lowest work climate ratings compared to German female researchers and both German and foreign male researchers. An intersectional approach thus considers the addition of experiences of discrimination, but furthermore also considers interaction effects (Bowleg, 2008). It is conceivable that the characteristics of nationality and gender not only have a linear effect on the psychological work climate but also interact to reinforce or level out experiences of discrimination for certain subgroups. In this collection,

Gewinner shows that previous studies in an academic context provide controversial results concerning migration background and gender, and that evidence for both additive intersectionality and interactive intersectionality can be found. The self-image of highly qualified, foreign female academics conveyed in qualitative studies oscillates between the perception as a successful adapter (Sang et al., 2013) and the “marginalized elite” (Riaño, 2016).

Two working hypotheses were formulated based on this, whereby additive intersectionality was tested based on the comparatively closed *H5a*, whereas *H5b* was formulated very openly and thus, to a very large extent, takes possible interactions into account.

H5a. The gender gap in the evaluation of the working climate is largest between male German researchers and female researchers from non-EU countries. All other subgroups fall between these two poles.

H5b. The size of the gender gap in perceptions of the work climate varies across nationality groups.

Empirical studies are available on the connection between gender and the team or group climate, as one of the sub-dimensions of the work climate used here. The results are strongly context-dependent and mixed. In a survey of teams in general medical practices, Goh et al. (2009) found that women rate the team climate slightly less positively than men. Using a sample of postdoctoral researchers, Hüttges and Fay (2015) argued that, unlike male researchers, professionally ambitious female researchers are more likely to encounter an environment that does not recognize or that negates their professional ambitions. In their study, the preference among women for a profession with prestige, a high salary, and similar external incentives showed a negative correlation with the assessment of the cooperation with the manager and with the assessment of team support.

The relationship between nationality and participative safety in the team (see Outcome Variables Section) was investigated among physicians in Finland by Aalto et al. (2014). However, they could not find statistically significant differences in the mean values.

Empirical studies are also available on the connection between gender and mentoring. Ragins and McFarlin (1990), using a dataset of 880 employees from three US research and development organizations, concluded that there were no significant gender differences in the assessment of the mentoring relationship by the protégées. Only marginal gender differences were found in this study, particularly that women stated somewhat more often that their mentor offers them a protection function, while men highlighted a social function of their mentor slightly more frequently. In a follow-up study using a sample of public accountants, it was found that the assessment of a mentoring relationship by the protégées did not vary between the biological sexes, but that the gender roles espoused by a person did have an influence (Scandura and Ragins, 1993). Another study among doctoral candidates and postdocs in nursing also found no gender differences in the assessment of mentoring relationships (Foster and Hill, 2019).

A research desideratum can be identified regarding the evaluation of leaders. There are sufficient studies that examine the influence of the gender or nationality of a leader on the assessment by their employees. However, the influence of these characteristics on the employee's assessment has not been addressed in the research to date. It is also unclear how the responsibility for childcare affects the perception of work climate. Intersectionality or interactions between socio-demographic characteristics and their effects on the psychological work climate have also not been investigated in this context.

Context

The present study is based on a full survey of all institutes and facilities of the MPG conducted in 2019. The MPG is one of the largest non-university research organizations in Germany. In its 86 institutes and facilities, more than 23,600 scientific and non-scientific employees conduct basic research in the natural sciences, life sciences, and humanities – both in Germany and internationally (Max Planck Society, 2020a). The MPG has several special aspects that must be taken into account when applying the results of this study to other research institutions.

Significantly, the MPG is a pure research organization and its researchers have no teaching obligations. While it can be assumed that many Max Planck researchers take on teaching positions at universities or universities of applied sciences in addition to their research activities, this is neither obligatory nor the rule. Therefore, generally speaking, Max Planck researchers can fully concentrate on their research.

The scientific staff of the MPG is characterized by a high degree of internationality. According to personnel statistics, the proportion of foreigners among W3 researchers (professorship) is 37 percent and 57 percent among doctoral candidates. In comparison, the proportion of foreigners among full-time professors at German universities is 7.1 percent while among doctoral students it is 23.6 percent.³ These data indicate that internationality is “more normal” in the institutes of the MPG.

The MPG conducts top-level research in its institutes and facilities. To this end, the best researchers worldwide are attracted by optimal research conditions (Max Planck Society, 2020a). This claim is reflected, firstly, by very good financial resources, which can be illustrated using a rough comparison. In 2019, the MPG was funded with 1.86 billion euros (Max Planck Society, 2020b). With approximately 23,600 employees, this results in a per-capita budget of 78,814 euros. By comparison, in 2017, German universities had around 704,000 employees (Destatis, 2019b, p. 15), while in the same year, the universities invested a total of 36.3 billion Euros, mainly from public funds, in both research and teaching (BMBF, 2020, p. 18), which results in a per-capita investment of 51,562.50 euros.

³Own calculations of the proportion of foreigners among PhD candidates (Destatis 2019a) and full-time professors (Destatis 2019b, p. 19; BMI 2018, p. 82).

A central structural principle of the MPG is the so-called Harnack Principle. This is a set of guiding principles for the organization of science, which place the promotion of individual outstanding research personalities at the center of the organization (Max Planck Society, 2010). Once the heads of a department or research group have been successfully appointed, they are not obliged to pursue a specific research program or curriculum but are solely obliged to follow their research interest (Max Planck Society, 2010). The appointment as the head of the department of an institute of the MPG is accompanied by a funding commitment until scientific emeritus status. Depending on the results of the evaluations carried out, the financial flows to the respective directors can be adjusted within certain limits. The MPG refers to the high trust principle (Max Planck Society, 2010) and appointed executives are given a great degree of scientific freedom thanks to solid financing and job security. In return, however, they also take on a high level of responsibility for their institute as a whole, the scientific success of their institute, and for the personnel in their department and at their institute.

Research Approach

Data

The following analysis is based on a dataset of MPG employees' perceptions of their work atmosphere. The organization-wide online survey was conducted from February 13 to March 13, 2019 and more than half of the employees of the MPG took part in the online survey. After data cleansing, evaluable questionnaires were available from 38 percent of the employees ($n = 9,078$), of which 4,308 questionnaires were from scientific employees. The dataset is the property of the MPG.

The extent to which the response to the full survey covered the population of employees in various subgroups is outlined in Table 2. Compared to the personnel statistics, women, directors and research group leaders, postdocs, doctoral candidates, and non-scientific staff are overrepresented while employees with foreign citizenship and guest researchers are underrepresented.

It is debatable whether the dataset represents a full survey or a random sample. If the data were to be considered a full survey, inferential statistical information such as confidence intervals and statistical significances would be superfluous and the analysis would focus on effect sizes. In contrast, if the dataset was regarded as a random sample, conventional inference statistics are important in addition to the effect strengths. This is a paradigmatic dispute in which both sides have good arguments (Broscheid and Gschwend, 2005) and thus both points of view were considered here.

Due to the unique aspects of the MPG described above, the data collected was treated as a full survey, that is, no representativeness of the data collected for other German or international non-university or university research institutions is assumed. Nevertheless, the test statistics are reported comprehensively, and a mixed approach is taken. While effect sizes are the focus of the result interpretation, p -values and confidence intervals are also reported as measures for assessing the robustness of the mean differences obtained. As no representativeness of the data of the MPG for other research organizations is assumed here, the qualitative transferability of the results is discussed in the conclusion of this study.

Table 2. Comparison of Various Employee Groups at the MPG, as a Proportion of the Survey Population (According to HR Statistical Data), and as a Proportion of Respondents.

Employee Group	HR Statistics (12/31/2018) in %	Survey (3/14/2019) in %
Women	43.2	48.6
Employees with non-German citizenship	35.5	25.5
Employment contract holders	88.2	91.5
Scholarship/funding contract holders	3.4	5.7
Guest researchers	8.3	1.6
Directors and research group leaders	2.8	6.4
Postdoctoral researchers	11.6	17.0
Doctoral candidates (excl. IMPRS)	16.0	20.3
Non-scientific staff	36.0	40.0

IMPRS, International Max Planck Research Schools.

Variables

The survey questionnaire, which was largely based on literature in English, was translated into German by a professional translation agency. The English and German-language versions of the questionnaire were subjected to pretests and reviewed in detail by a specially established task force of the MPG. The task force consisted of institute directors from the three sections of the MPG, representatives of its stakeholder groups, and employees from the General Administration. The procedure ensured that the questionnaire was formulated in a coherent and meaningful way for all MPG employees. The German and English questionnaires were subsequently proofread by the agency that was commissioned to perform the translation.

Outcome Variables. Work climate was operationalized through the main constructs “group climate” and “perception of leader.” For the two main constructs, mean values based on the means of the underlying subconstructs were calculated. The range of values for the main and subconstructs is from 1 to 5 according to a five-point Likert scale that was used for the measurement. The subconstructs are based on the items listed in Appendix 1. When calculating the mean values of the subconstructs, cases were only considered if at least three items of the subconstruct were answered. When calculating the main constructs, all existing cases were considered, that is, if at least one subconstruct could be calculated for the case. One result of this approach was that

the number of cases (n) of the main constructs was higher than that of the individual subconstructs (Table A1).⁴

The question items for group climate are based on the Team Climate Inventory of Anderson and West (1998) and the main construct group climate consists of four subconstructs. The shared vision of the group asks respondents about their views on how clear, amenable to consensus, attainable and valuable the goals of their research group are. The subconstruct task orientation measures the general commitment of the group to excellence in task performance and building reciprocally on the ideas of its members. Participative safety surveys the active participation of group members in common processes in an atmosphere of mutual trust and support. Lastly, innovation orientation measures the expectation and approval of and practical support for work on new ideas and approaches.

The main construct perception of leader was operationalized through the CPE (change, production/structure, employee/relation) questionnaire of Fjell et al. (2007). The questionnaire divides the perception of leadership behavior into three subconstructs. Employee orientation assesses the views of respondents regarding the extent to which their (scientific) leaders value the work of subordinates and value them as people. Change orientation measures the evaluation of respondents concerning to what extent their leaders act in a creative and visionary manner and are willing to take risks. Rule orientation examines the extent to which leaders try to solve problems within a clearly defined framework of rules and processes and how much importance they attach to this framework according to their subordinates.

Since further qualification for higher positions is of central importance in an academic career, the quality of mentoring was identified as a subconstruct of the main construct perception of leader. Mentoring relationships have a psychosocial dimension (e.g., mentor as a role model or friend), and a career-related dimension (e.g., mentor as a sponsor, coach, or protector) (Ragins and McFarlin, 1990). This survey focused exclusively on the latter dimension.

The individual items of the variables and their scaling are listed in Appendix 1, while Appendix 2 presents the descriptive statistics and Cronbach's alpha values for the subconstructs of work climate based on the total sample.⁵ The values of Cronbach's alpha lie between 0.78 and 0.92, whereby the internal consistency of the items used to measure the outcome variables can be considered good.

⁴The index calculation procedure results in the fact that, in some cases, the two main constructs are calculated on the basis of only one of three subconstructs each. In comparison with an index value calculation in which at least three subconstructs must be available for each main construct, it was examined whether the consideration of these cases distorts the distribution of the predictor variables. This could not be supported. Changes in the mean, standard deviation, skewness, and quartile distributions were limited to the third decimal place.

⁵The numbers of cases for the outcome variables differ between Tables 3 and 4. Table 4 was created using the entire sample, while Table 2 reports the number of cases for the outcome variables that were also included in the regressions performed. The numbers of cases in Table 2 are lower because of missing cases with one or more predictor variables.

Table 3 shows the descriptive values of the two outcome variables as they were included in the regression equations.

Predictor Variables. Based on the theoretical assumptions, the sociodemographic categories analyzed were gender and nationality. The descriptive values of the predictor variables are shown in Table 4.

Gender was differentiated into male and female. A further category “No answer/Other gender” was not further considered in the evaluation due to its lack of precision, since it is unclear whether the respondents who used this option assign themselves to an alternative gender or simply wanted to conceal their gender. Due to data protection laws and to guarantee the anonymity of the respondents, it was not possible to conduct an isolated query of a different gender as this would have made it possible to identify specific individuals in the dataset.⁶

Nationality was queried using the categories “German,” “other EU countries,” and “non-EU countries.” As was the case concerning gender, a more precise differentiation of nationalities was not possible due to data protection. It should be noted that four of the more than 80 institutes of the MPG are in other European countries and one is in the USA. The three European institutes belong to the Social Sciences and Humanities Section of MPG. A cross-table analysis of section and nationality showed no association of a relevant effect size between the two variables (Cramer’s $V = 0.041$, $p = 0.011$, $\text{Chi}^2(4) = 13,086$, $n = 3,904$).

Interaction Variables. The interaction variables “children below 18 years of age living in the same household” as an individual characteristic and academic position as an organizational characteristic were also investigated (also see Table 4).

For the variable “children below 18 living in the same household,” respondents were asked whether children under 18 years of age live in their household. The variable classified respondents into a group of those with children under 18 years of age in their household (1) and a group of those without children, those without children in their household, and those with children older than 18 years of age in their household (0).

Table 3. Descriptive Statistics of the Outcome Variables for the Performed Analyses.

Variable Name	<i>N</i>	Max Item Number	Min.	Max.	Mean	SD
Main construct: Group climate	2,965	15	1.00	5.00	3.780	0.744
Main construct: Perception of leader	2,871	20	1.00	5.00	3.664	0.740

⁶Of the 3,817 researchers surveyed, 385 (10.1 percent) placed themselves in the “No answer/Other gender” category.

Table 4. Descriptive Statistics of the Predictor Variables for the Analyses Performed.

Variable Name	Category	Group Climate		Perception of Leader	
		N	Marginal Percentage (%)	N	Marginal Percentage (%)
Gender	Female	1,147	38.7	1,153	40.2
	Male	1,818	61.3	1,718	59.8
Nationality	Other EU country	615	20.7	603	21.0
	Non-EU country	600	20.2	596	20.8
	German	1,750	59.0	1,672	58.2
Children below 18 living in the same household	Yes	794	26.8	681	23.7
	No	2,171	73.2	2,190	76.3
Position of scientific staff	Directors and research group leaders	330	11.1	–	–
	Postdocs	891	30.1	960	33.4
	Other research associates employed	706	23.8	771	26.9
	Doctoral candidates	1,038	35.0	1,140	39.7
Total		2,965		2,871	

The position of a respondent indicates his or her hierarchical position. Researchers were asked to categorize themselves as “directors and research group leaders,” “doctoral candidates,” “postdocs,” or “other research associates employed.”⁷ The positions were summarized in this variable, regardless of whether the respondents have an employment contract, a scholarship, or whether their doctoral studies are conducted within the framework of one of the International Max Planck Research Schools (IMPRS).

The category “directors and research group leaders” was filtered out of the positions before analyzing the perception of leader. For reasons of data protection, no distinction was made between directors and research group leaders in the survey. In the case of directors, it is unclear which person they considered their superior in each case, although the relationship between institute directors and their respective superiors is difficult to compare with the member-leadership relationship in which the other scientific employees stand. A meaningful interpretation of the perception of leader was thus not considered possible for the institute directors and research group leaders and was therefore omitted in the regression equation for the estimation of the perception of leader.

Methods

To explore whether the perception of the work climate is related to the different socio-demographic characteristics of the respondents, linear regressions with dummy variables were performed whereby the main effects of the predictor variables and the interaction effects between gender and all other variables were examined. In the first step, the parameters of the regression equations were calculated for the two outcome variables. Based on these estimated parameters, the predicted mean values were then (automatically) calculated for the groups of people to be compared according to the research hypotheses.⁸ In the results section, the comparisons of means are described with their confidence intervals and *p*-values. The interpretation of the results was based on the overall tendency and the effect size of the comparisons of the estimated marginal means carried out to test the individual hypotheses.

Based on the literature, comparatively small effects were to be expected that can nevertheless have an impact in practice (Martell et al., 1996) and a meta-study by Eagly et al. (2003) on gender differences in managerial behavior should be highlighted in this context. The values determined for Cohen’s *d* ranged from 0.02 to a maximum of 0.27.

⁷The category “other research associates employed” is a residual category for all scientific employees with an employment contract (as distinct from a fellowship or *Fördervertrag*) who have not identified themselves with the other scientific categories and also not as student/graduate assistants, trainees, or interns. In practice, the “other research associates employed” form a separate group of persons of permanent scientists, which in practice most closely intersects with postdocs and research group leaders.

⁸The methodological added value of calculating and comparing estimated marginal means instead of reporting results directly from the overview of parameter estimates is that reference categories can be flexibly calibrated, just as it makes the most sense for testing the individual hypotheses.

Since the post hoc analyses performed did not consider all possible contrasts of the estimated marginal means, but only the ones relevant for testing the formulated hypotheses, no automatic alpha-level correction was applied. The analysis was performed with SPSS and the syntax code of the analysis is part of the SPSS output included in the online appendix⁹.

Isolated statistical outliers in univariate correlations were identified but when checked they were not found to contain logically incoherent answers. The tests for normal distribution were omitted for two reasons.

First, *t*-tests and linear regressions are deemed to be robust to violations of normal distribution (Lumley et al., 2002). Second, all examined group constellations of the samples comprise at least 20 cases, which is why, due to the central limit theorem, assumptions about the distribution of the sample as a prerequisite for *t*-tests become secondary (Kwak and Kim, 2017; Pituch and Stevens, 2016, p. 224).

Levene tests were performed to check for heterogeneity of variances and these were predominantly significant ($\alpha = 0.05$). Robust estimators were thus used. As the population of cases in the cell categories was very unbalanced, the calculation of the regression models was performed with the Type III sum of squares, which is particularly suitable for the calculation of unbalanced models (IBM, 2020).

Results

The mean values of the first outcome variable – the main construct group climate – were estimated using the following regression equation¹⁰:

⁹The online appendix can be accessed at: https://github.com/clemensstriebling/diversity_and_discrimination_in_RPOs.

¹⁰No checks were made for age and contract type. This was due to data protection considerations. If these variables were also considered, it would have been possible to identify individual persons within the MPG and to estimate the response mean for them. In accordance with good scientific practice, care was therefore taken to ensure that all possible combinations of characteristics were stored with at least five cases. Nevertheless, to test the hypothetical assumptions of the reviewers, the regression models were calculated with age (age groups 15–29, 30–44, 45–59, and 60 and older (reference group 45–59)) and contract type (temporary or permanent) without publishing the regression parameters here.

The following results were obtained: The age group 15–29 evaluates the group climate and the perception of leader considerably more positively than the other age groups. Between the other age groups, the differences in the evaluation of group climate and perception of leader are low and rather insignificant. Contract type has no relevant influence in either model. The two control variables have little effect on the data patterns in Figs. 1 and 2. No substantial change in the effects shown in the figures could be detected. “Substantial changes” are defined as those where the introduction of the control variable changes the effect direction as well as the inclusion of the null value in the 95% confidence interval. It should be noted that PhDs and postdocs at the MPG are generally employed on a temporary basis (in the dataset, less than 5 percent of respondents from this group reported having a permanent contract) and, of course, there is also a strong overlap of age and hierarchical position in the dataset, so that

$$\begin{aligned}
Y_{\text{Group climate}} = & \beta_0 + \beta_{\text{Female}} + \beta_{\text{EU}} + \beta_{\text{Non-EU}} + \beta_{\text{Children}} + \beta_{\text{DirectorRGL}} + \beta_{\text{Postdoc}} \\
& + \beta_{\text{OtherRes}} + \beta_{\text{Female}\times\text{Children}} + \beta_{\text{Female}\times\text{EU}} + \beta_{\text{Female}\times\text{Non-EU}} + \beta_{\text{Female}\times\text{DirectorRGL}} \\
& + \beta_{\text{Female}\times\text{Postdoc}} + \beta_{\text{Female}\times\text{OtherRes}} + e
\end{aligned}$$

The regression equation for the second outcome variable, perception of leader, was slightly modified for the reasons outlined above. No dummy variables were created for the category “directors and research group leaders” and the category “female directors and research group leaders.”

$$\begin{aligned}
Y_{\text{Perception of leader}} = & \beta_0 + \beta_{\text{Female}} + \beta_{\text{EU}} + \beta_{\text{Non-EU}} + \beta_{\text{Children}} + \beta_{\text{Postdoc}} + \beta_{\text{OtherRes}} \\
& + \beta_{\text{Female}\times\text{Children}} + \beta_{\text{Female}\times\text{EU}} + \beta_{\text{Female}\times\text{Non-EU}} + \beta_{\text{Female}\times\text{Postdoc}} + \beta_{\text{Female}\times\text{OtherRes}} + e
\end{aligned}$$

The parameter β_0 indicates the estimated mean value of the reference group for the respective main construct. This is thus based on all German male doctoral students who have no children under 18 in their household. The estimated regression parameters for the two outcome variables are presented in the sections “Group climate” and “Perception of leader” below. Using the means estimated from these equations, *t*-tests were performed to test the five formulated hypotheses. Furthermore, to test the formulated hypotheses, especially “differences of differences” were examined. These tests that, for example, compare whether the gender gaps in group climate differ statistically significantly between the hierarchical levels, were either taken directly from the regression equations in Appendices 1 and 2 or calculated manually.¹¹

A total of 39 *t*-tests were performed for the two outcome variables. Because the *p*-values reported were not automatically corrected, a Bonferroni-corrected alpha level of 0.001 was applied ($\alpha_{\text{Bonferroni}} = 0.05/39$).

Group Climate

H1: Effect of Gender. Appendix 3 shows the parameters of the regression equation used to estimate the mean of the group climate. Based on this equation, an estimated marginal mean of the group climate for female researchers of 3.797 was calculated. For male researchers, the estimated mean is 3.892, resulting in a conditional difference of -0.095 (95% CI: $-0.163/-0.028$, SE = 0.034, $p = 0.006$). All calculated mean differences are summarized in Fig. 1. The figure thus represents the effect size of the conditional difference between the hypothetically relevant groups.

these variables appeared to be dispensable, not only for data protection, but also for theoretical considerations.

¹¹The following formula was used to manually calculate the hypothesis tests (Paternoster et al., 1998):

$$z = (\beta_1 - \beta_2) / \sqrt{((SE \beta_1)^2 + (SE \beta_2)^2)}.$$

The *p* value and Standard errors were calculated using the following formulas (Altman and Bland, 2011):

$$\begin{aligned}
p = & \exp(-0.717 * z - 0.416 * z^2) \\
SE = & \text{Estimate} / z.
\end{aligned}$$

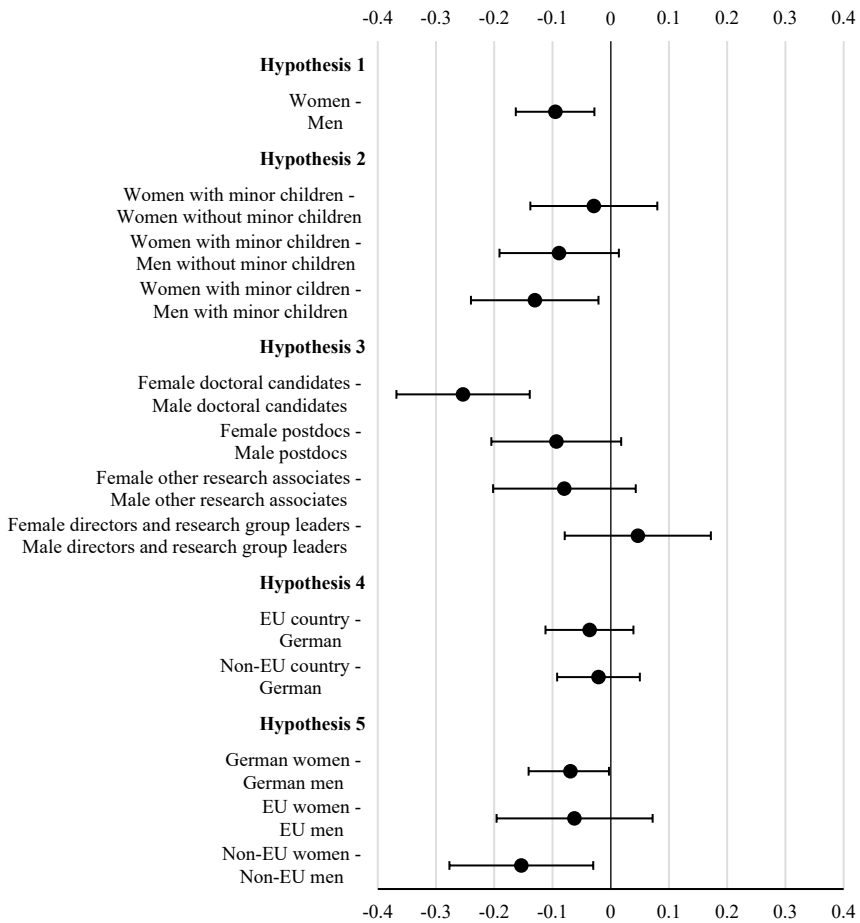


Fig. 1. Conditional Differences Between the Estimated Marginal Means for the Hypothetical Relationships of Group Climate. 95% Confidence Interval.

H2: Interaction Effect of Gender and Care for Underage Children. The responses of female researchers with children under the age of 18 in their household had an estimated mean of 3.782. This is 0.029 (95% CI: $-0.138/0.080$, SE = 0.055, $p = 0.601$) lower than the mean of female researchers without children under 18 and 0.089 (95% CI: $-0.191/0.014$, SE = 0.052, $p = 0.089$) lower than the mean of male researchers without children under 18. Between female researchers and male researchers with minor children in the household, the difference amounts to -0.130 (95% CI: $-0.240/-0.021$, SE = 0.056, $p = 0.020$).

H3: Interaction Effect of Gender and Hierarchical Position. The estimated mean of the group climate of female doctoral candidates is 3.550. This is 0.254 (95% CI: $-0.368/-0.139$, SE = 0.058, $p = 0.000$) lower than the mean of male doctoral candidates. For postdocs, women have a mean of 3.610 and men 3.703, which corresponds to a difference of -0.093 (95% CI: $-0.205/0.018$, SE = 0.057,

$p = 0.101$). For other research associates, the mean score for females is 3.774 and males differ from this by -0.080 (95% CI: $-0.202/0.043$, SE = 0.062, $p = 0.201$). Female directors and research group leaders reported an estimated mean for group climate of 4.253, while males reported a difference of 0.047 (95% CI: $-0.079/0.172$; SE = 0.064, $p = 0.465$).

Comparing the gender gaps in the evaluation of the group climate, it was found that the higher the hierarchical position of a female researcher, the more positively she will rate the work climate relative to male researchers on the same hierarchical level. The gender gap for postdocs is 0.160 smaller than for doctoral candidates (95% CI: 0.015/0.306, SE = 0.074, $p = 0.031$) while for other research associates, the gender gap is 0.014 points lower than for postdocs (95% CI: $-0.195/0.223$, SE = 0.107, $p = 0.904$). The gender gap between directors and research group leaders is 0.126 lower than among other research associates (95% CI: $-0.098/0.350$, SE = 0.114, $p = 0.273$) and smaller than for postdocs by 0.140 (95% CI: $-0.081/0.361$, SE = 0.113, $p = 0.216$).

H4: Effect of Nationality. The estimated mean score of German researchers is 3.863, whereas the mean score of EU researchers is 0.036 lower (95% CI: $-0.112/0.039$, SE = 0.038, $p = 0.347$). The score of non-EU researchers differs by -0.021 (95% CI: $-0.092/0.050$, SE = 0.036, $p = 0.561$). Thus, a 0.015 higher estimated marginal mean of the group climate was estimated for non-EU researchers than for EU researchers (95% CI: $-0.074/0.104$, SE = 0.045, $p = 0.737$).

H5a and H5b: Interaction Effect of Gender and Nationality. Female German researchers have an estimated mean of 3.829 for the group climate. This is 0.069 (95% CI: $-0.141/-0.003$, SE = 0.037, $p = 0.060$) lower than the mean score of male German researchers. The group climate mean score of female EU researchers is 3.796, which differs from the mean of male EU researchers by -0.062 (95% CI: $-0.196/0.072$, SE = 0.068, $p = 0.361$). Female non-EU researchers rated the group climate on average with 3.766 which is 0.154 (95% CI: $-0.277/-0.030$, SE = 0.063, $p = 0.015$) lower than the estimated marginal mean of male non-EU researchers.

The difference in gender gaps between German and EU researchers is 0.007 (95% CI: $-0.144/0.158$, SE = 0.077, $p = 0.929$) and between German and non-EU researchers -0.084 (95% CI: $-0.226/0.057$, SE = 0.072, $p = 0.242$). EU researchers and non-EU researchers differ by -0.091 (95% CI: $-0.298/0.116$, SE = 0.105, $p = 0.395$).

Perception of Leader

The regression equation for the evaluation of the perception of leader is comparable to that of the group climate (Appendix 4). While there is a smaller difference between male and female doctoral candidates, at the same time, more pronounced conditional mean differences can be observed for several other variables, including the main effect of gender (Fig. 2).

H1: Effect of Gender. Female researchers have an estimated marginal mean of 3.590 for the perception of leader, which differs from that of males by -0.136 (95% CI: $-0.211/-0.061$, SE = 0.038, $p = 0.000$).

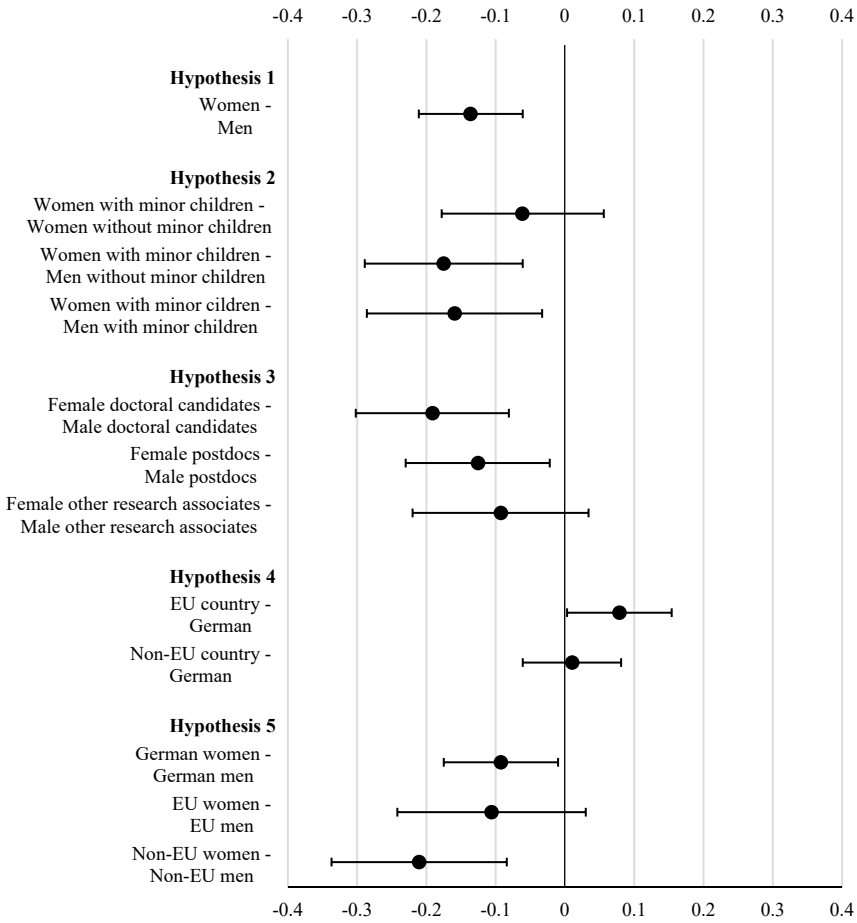


Fig. 2. Conditional Differences Between the Estimated Marginal Means for the Hypothetical Relationships of Perception of Leader. 95% Confidence Interval.

H2: Interaction Effect of Gender and Care for Underage Children. Female researchers with children below the age of 18 in their household have a mean score of 3.559 for perception of leader. Compared to female researchers without minor children in their household, this mean score is 0.062 (95% CI: $-0.179/0.056$, SE = 0.060, $p = 0.303$) lower and it is 0.175 (95% CI: $-0.290/-0.061$, SE = 0.058, $p = 0.003$) lower compared to that of male researchers without children. The difference to the mean of men with minor children in their household is -0.159 (95% CI: $-0.286/-0.033$, SE = 0.065, $p = 0.014$).

H3: Interaction Effect of Gender and Hierarchical Position. The gender and position interaction again compared gender differences at the individual position level. Female doctoral candidates have a mean score on perception of leader of 3.553. This differs from male doctoral candidates by -0.191 (95% CI: $-0.302/-0.081$,

SE = 0.056, $p = 0.000$). Female postdocs have a mean of 3.580, which is 0.126 (95% CI: $-0.229/-0.022$, SE = 0.053, $p = 0.017$) lower than that of male postdocs. Females employed in the “other research associates” category answered the items on the perception of leader with an estimated mean of 3.637 which is 0.093 (95% CI: $-0.219/0.034$, SE = 0.065, $p = 0.152$) below the mean score of their male peers.

It can be stated that the higher the hierarchical position, the lower is the gender gap in the assessment of the perception of the leader. The gender gap for postdocs is 0.066 smaller than for doctoral candidates (95% CI: $-0.071/0.202$, SE = 0.070, $p = 0.345$) while for other research associates, the gender gap is 0.033 points lower than for postdocs (95% CI: $-0.032/0.098$, SE = 0.033, $p = 0.322$).

H4: Effect of Nationality. German researchers rated the perception of leader at 3.628. In contrast, researchers from other EU countries rated the perception of leader 0.079 (95% CI: 0.003/0.154, SE = 0.039, $p = 0.041$) higher and non-EU researchers 0.010 (95% CI: $-0.061/0.081$, SE = 0.036, $p = 0.774$) higher. The difference in the conditional estimated marginal means between EU and non-EU researchers is thus 0.068 (95% CI: $-0.019/0.155$, SE = 0.044, $p = 0.124$).

H5a and H5b: Interaction Effect of Gender and Nationality. For female German researchers, the assessment of perception of leader yielded an estimated marginal mean of 3.582. This mean differs from that of German males by -0.093 (95% CI: $-0.175/-0.010$, SE = 0.042, $p = 0.029$). Female EU researchers have a mean of 3.654, which is 0.106 (95% CI: $-0.242/0.030$, SE = 0.069, $p = 0.126$) lower than that of male EU researchers. Female researchers from non-EU states have a mean of 3.533, which is 0.211 (95% CI: $-0.337/-0.084$, SE = 0.065, $p = 0.001$) lower than the mean of males.

The gender gaps between German and EU researchers differ by -0.013 (95% CI: $-0.165/0.138$, SE = 0.077, $p = 0.861$) and between German and non-EU researchers by -0.118 (95% CI: $-0.260/0.024$, SE = 0.073, $p = 0.104$). The gender gaps of EU and non-EU researchers differ by -0.105 (95% CI: $-0.847/0.637$, SE = -0.379 , $p = 0.794$).

Fig. 2 shows that the largest differences in the estimated marginal means exist between female and male doctoral candidates and between female and male researchers from non-EU states. These mean differences are also robust regarding the false-positive error. In general, all tests performed for the perception of leader show a similar tendency as those concerning the group climate. An exception is a statistical weak deviation for the main effect of nationality, as although foreign researchers perceive a less favorable group climate than German researchers, their evaluation of the perception of leader is higher.

Interpretation

As outlined above, the data was derived from a full survey conducted by the MPG, and hence the results are only valid for the MPG due to its specific contextual conditions. The evaluation of the hypotheses is therefore based on the effect sizes. In addition, however, statements are made about the statistical significance of the effects. Of the 39 significance tests carried out, 14 were below

the uncorrected significance threshold of 0.05, and of these, four were below the Bonferroni-corrected significance threshold of 0.001.

Table 5 presents the interpretation of the results depending on the effect sizes obtained concerning the five hypotheses established. *H1*, *H2*, and *H5b* correctly predicted the results while *H3* and *H4* are to be modified in the outcome of the study.

Contrary to what was predicted by *H3*, it was shown that female researchers at the level of doctoral candidates perceive group climate and perception of leader less positively than men (*p*-value below the corrected significance level). A similar effect direction was observed for postdocs and other research associates employed, albeit with less pronounced effects. At the level of directors and research group leaders, female researchers rated the group climate more positively than male researchers (no robust *p*-values). Figs. 1 and 2 imply the following weak pattern: female doctoral candidates rate the group climate and perception of leader lower than males. This difference becomes more evenly distributed with each hierarchy level, that is, at the level of postdocs and other employed research associates. Once a researcher reaches the level of a director or research group leader, the assessment of group climate changes its direction: female researchers evaluate this main construct better than men. Thus, the results do not support the role congruity theory but rather contradict its predictions.

One possible explanation for the interaction of gender and position on group climate and perception of leader are filter mechanisms in scientific careers, due to which female researchers tend to drop out more frequently in the Ph.D. or postdoc phases than males. Due to societal role expectations, especially regarding parenthood, and institutional gender biases, female researchers face greater hurdles than men to remain in the research system, which is presumably also reflected in a lower-rated work climate (Williams et al., 2014; Moss-Racusin et al., 2012; Sobieraj and Krämer, 2019; Oh et al., 2018; Eagly and Wood, 2012). As a result, at the level of directors and research group leaders, female researchers of the MPG sample appear to have a higher “professional fit” than males. This filter thesis will be discussed in more detail in the conclusion section as a central result of this study.

Unlike predicted in *H4*, only minor differences were found in the conditional mean values between the nationality groups. For perception of leader, the conditional mean value of the EU researchers is higher than that of the German researchers, while the conditional mean value of the non-EU researchers does not deviate relevantly from that of the German researchers.

Consequently to the lack of support for *H4*, *H5a* was also not in line with the results as German male researchers and non-EU female researchers do not represent two maximum poles in the evaluation of the working climate. However, *H5b* was supported as a complex interaction of gender and nationality is discernible from the results. While the gender gap in the evaluation of group climate and perception of leader is comparable for German and EU researchers, the gender gap is about twice as pronounced for non-EU researchers. Contrary to predictions, the results suggest that in terms of psychological work climate, it is not male German researchers who form the maximum contrast pole to female non-EU researchers, but male non-EU researchers.

Table 5. Interpretation of the Hypotheses According to Effect Sizes.

Hypotheses	Factors on Work Climate	Hypothesis	Interpretation Group Climate	Interpretation Perception of Leader
1	Gender	Female researchers perceive their work climate less positively than their male colleagues	Supported ^a	Supported
2	Gender × Children below 18	Female researchers that have children under the age of 18 in their household perceive their work climate less positively than male researchers in general, male researchers with children, and female researchers without children or with older children	Supported	Supported
3	Gender × Position	The gender gap in the perception of work climate increases with higher career levels	Not supported	Not supported
4	Nationality	Foreign researchers perceive their work climate less positively than German researchers. Researchers with a non-EU nationality rate their work climate the least positive of all	Not supported	Not supported
5a	Gender × Nationality	The gender gap in the evaluation of the working climate is largest between male German researchers and female researchers from non-EU countries. All other subgroups fall between these two poles	Not supported	Not supported
5b	Gender × Nationality	The size of the gender gap in perceptions of the work climate varies across nationality groups	Supported	Supported

^a All tests conducted related to a hypothesis are below the Bonferroni-corrected significance threshold of $\alpha = 0.001$.

Conclusion

The starting point of this study was the question whether female and foreign researchers perceive the work climate differently than their male and German colleagues and whether there are interactions between gender and nationality and between gender and responsibility for underage children and hierarchy position that contribute to this perspective. To investigate this question, a full survey of researchers from the MPG, one of the largest German non-university research institutions, was used. It should be noted that these findings refer to average values and thus to general tendencies among the researchers of the MPG. It cannot be ruled out that at the level of individual institutes or research groups there may be an accumulation of problematic or commendable behavior due to the misconduct or excellence of individuals or situational group dynamics.

Theoretical Implications

The main findings of the study can be summarized by stating that, in general, female researchers perceive the work climate less favorably than male researchers. Responsibility for minor children also has a negative effect on the assessment of the work climate for female researchers (in contrast to men), albeit only weakly. A consistent and robust effect of nationality on the assessment of the work climate in the sense of the formulated hypothesis could not be identified. Nevertheless, the nationality of the respondents interacts with gender in the evaluation of the work climate. While female researchers generally rate the work climate lower than their male colleagues, this gender effect is most pronounced among researchers without EU citizenship. Since no further distinctions were made between individual nationalities in the survey, no further interpretations of this interesting interaction effect of gender and nationality are made here. A differentiated survey of different perceptions of the work climate according to different cultural groups or nationalities, or a qualitative study of the work-related experiences of male and female academics from non-EU countries in Germany should thus be the subject of future studies.

The most interesting finding from the author's point of view concerns the interaction effect between gender and the position of a researcher. At the level of doctoral candidates, female researchers of the MPG rated group climate and perception of leader relevantly lower. On the higher hierarchical levels of post-docs and other research associates employed, this effect levels out and changes its direction for the leadership positions, whereby female directors and research group leaders rate the group climate slightly more positively than men.

Next to other equally plausible explanations, it is conceivable that the gender differences in the assessment of the work climate between the individual hierarchical levels are a result of filter mechanisms in research careers. If one follows this speculation, the observed interaction effects can be regarded as support for the social role hypothesis – in a different way than expected. Accordingly, female researchers would experience a lower workplace integration and thus rate the work climate less positively than men. If one followed this argumentation, no

relevant statistical correlation between the gender of a researcher and the psychological work climate could be shown above the level of early career researchers simply because persons with more negative perceptions of the work climate have left at or after the junior researcher level. However, to test this hypothesis would require a gender analysis of MPG researchers that drop out as part of another study.

The case of the MPG showed that female early career researchers rate the climatic conditions at the workplace less positively than their male peers. Another competing explanation for this finding could be that the skepticism of female junior researchers merely diminishes during the course of their research careers. However, in accordance with the research literature and in the face of a de facto female drop out, the above-mentioned filter mechanisms are considered more likely.¹² According to this interpretation, during a research career, especially persons with a below-average professional fit would leave – which would affect women more often than men. Accordingly, among research leaders, persons with an above-average professional fit would be overrepresented among women compared to men.

This interpretation is consistent with previous research, according to which women face disproportionately higher career hurdles in research than men (Zacharia et al., 2020, pp. 34–35). The most significant career hurdles are seen in the lack of compatibility between temporary employment and uncertain career opportunities in science with pregnancy and the tasks arising from a classically stereotypical role of motherhood (Zacharia et al., 2020). However, as a third possible explanation, the results of this study could be also in line with social role theory's thesis of a gender bias in the perception of leadership ambitions and competence attributions of female researchers (Williams et al., 2014; Eagly and Karau, 2002) as a result of which female early career researchers perceive a less favorable work climate than their male peers. The results do not explicitly provide evidence for role congruency theory as it could not be shown that the evaluations of women concerning the psychological work climate are lower with each subsequent hierarchical level but rather that the opposite is true: the psychological work climate is increasingly more positively evaluated as women advance in their career.

The results of the present study could also be plausibly interpreted in light of the so-called “queen bee” syndrome. According to this theory, upward mobility, that is, the assumption of leadership tasks in a male-dominated environment,

¹²As in most German research organizations, the proportion of women in the Max Planck Society decreases with each successive hierarchical level. Of 3,502 researchers in the data set who provided corresponding information on gender and position, 43 percent of the doctoral candidates are female. Among postdocs, women make up 40 percent, among other research associates employed 36 percent, and among directors and research group leaders, 30 percent. Looking only at the 1,161 researchers with children surveyed, the gender gap is wider: women make up 44 percent of doctoral candidates, 34 percent of postdocs, 32 percent of other research associates, and 23 percent of directors and research group leaders.

goes hand in hand with self-distancing from the stereotypes of the marginalized group. As a result, female scientific leaders generally see themselves as non-prototypical women, attribute a higher professional fit to themselves, and tend to stereotype other women more strongly (Ellemers et al., 2004; Derks et al., 2016). Accordingly, female researchers in leadership positions are under greater pressure to distinguish themselves in their self-conception from female junior researchers than is the case with male leaders and male junior researchers. If one followed this argumentation, it would be conceivable that this overcompensation leads to a narrowing of the gender gap in the evaluation of the work climate among researchers with leadership responsibilities compared to early career researchers – which cannot be ruled out based on the data analyses.

As a summary of the theoretical discussion, the following can be stated: The results of this study show that, for the MPG, female early career researchers rate the work climate less positively than male researchers. In the course of the filter argument, it could be speculated that (among other things) this lower, self-perceived “professional fit” would lead to a higher drop out of female researchers. It could further be speculated that the women who do remain in research and continue to rise up the career ladder, would in turn feel greater pressure to self-distance from female junior researchers. This in consequence could limit the effectiveness of mentoring relationships between female mentors and mentees. The purely speculative further development of the observations made in this study offers a starting point for elaboration in future studies. A correlation between the less positive assessment of work climate by female early career researchers and a higher drop out probability would first have to be examined.

Practical Implications

The study carried out provides partly intuitive and somewhat surprising evidence of differences in the assessment of the working climate among the employees of one of the largest research organizations in Germany, determined by the sociodemographic characteristics of the respondents. From a management perspective, the results of this study can be used, in particular, to derive implications for the target groups of organizational support measures:

- It is proven that women in Germany bear the main share of care work in the home (Institute for Social Work and Social Education, 2020). The study implies that the responsibility for minor children also affects the perception of researchers concerning the psychological work climate. According to the study, male researchers with young children are, on average, presumably in a different life situation than female researchers with children. While female researchers need explicit support structures here, the majority of fathers did not seem to face bigger challenges in reconciling care responsibilities with their careers.
- The study indicates that female researchers without EU citizenship experience a considerably different working environment than their male counterparts. Research institutions should collect data to better understand the situation of this group and provide targeted support.

- In public discourse, the distorted perception and evaluation of the behavior of female research managers in terms of role congruity theory is justifiably receiving increasing attention (Reimer and Welp, 2021; Egner and Uhlenwinkel, 2021; Abbott, 2021). The present study indicates that in academic careers, it is female early career researchers in particular who rate the work climate less positively. The less positive average perception of the work climate in research and academic organizations could be a major reason why women leave academic careers in disproportionate numbers and are consequently underrepresented in leadership positions. In this respect, the results of the study substantiate the relevance of career development measures that are specifically targeted at female early career researchers as well as measures to prevent sexist behavior in the workplace.

At the organizational level, it must be ensured that research managers are provided with, and are aware of, a comprehensive toolbox with which they can realize equality and equal opportunities (e.g., a reconciliation-sensitive performance evaluation system, mentoring schemes, scholarships). Research managers, in turn, should seek regular and structured exchanges with their employees to actively support them in their career development and, if necessary, with the institution's own support measures. Schraudner et al. (2019, p. 43) point to the considerable correlation between regular development-oriented discussions between superiors and employees and the assessment of group climate and perception of a leader. In the MPG sample, three out of four researchers had such conversations (Schraudner et al., 2019). The data also show that female researchers have personal meetings with their superiors less often than male researchers and that German nationals have them less often than foreigners (Schraudner et al., 2019).

Academia is largely a “self-regulating profession” in which peers can have a large influence on work-related successes and failures. This culture of peer governance reaches its limits when subjective biases or tolerance of colleagues' misconduct undermine the objectivity of career development, support, and performance evaluation (Keashly, 2019). In this respect, structured and documented development conversations, in addition to anti-bias training, can be regarded as instruments of rationalization and professionalization as well as a means of creating equal opportunities.

Finally, it should be recognized that an inclusive research culture is also being discussed at the structural level. The British Wellcome Trust and Science Europe, as well as the European Commission, should be mentioned as drivers here. With the help of the Horizon Europe research framework program, comprehensive funding calls have been and are being launched that also aim at a cultural change toward more inclusive research organizations (e.g., European Union 2021).

Transferability and Limitations

A particular strength of the present study is the size of its sample, which provides very good coverage of the target population and high statistical power due to its large sample size in relation to comparable studies (e.g., the MORE project, the

Gender Gap in Science project, or the Wellcome Trust). At the same time, there is the limitation that all results exclusively refer to the case of the MPG and its research institutions. In view of the specific contextual conditions of the MPG, the question arises as to what extent the results of this study are transferable to other research institutions, including universities. Regarding the interactions of gender and position and gender and nationality on the work climate, there is no reason why the effects found should only apply to the MPG and it is debatable whether both effects are not even more pronounced in the university context. It was shown that, on average, female doctoral candidates rate the group climate less positively than male candidates. It should thus be investigated whether the more frequent social interactions with students and the concomitant higher vulnerability of experiences of “contrapower harassment” (Lampman, 2009), especially due to teaching responsibilities at the university, strengthen or weaken the interaction effect of gender and position on work climate. This question also applies to the more pronounced gender difference among non-EU researchers. In addition, the proportion of foreign researchers at German universities is much lower than at the MPG. Therefore, it is conceivable that foreign researchers at universities perceive themselves much more strongly as being in a minority role and correspondingly experience a poorer work climate.

As mentioned, a further limitation of the study is that only the psychological work climate was surveyed and not a collective work climate. A multilevel study would have made it possible to take cluster effects caused by research groups or institutes that deviate positively or negatively from the average work climate into account.

Finally, the requirements of data protection also limited the theoretically possible complexity of the regression equations. Although the experiments with control variables showed that the regression models are largely robust, it would have been very interesting to have taken the disciplinary context into account in more detail as research disciplines are considered in Striebing on academic bullying in this collection by omitting the variable on care responsibility.

Impulses for Future Research

Based on the results of this study, there are two particularly promising future research perspectives in addition to the usual need for reproduction and validation. Firstly, cost-benefit analyses are needed to assess the social impact of the effect sizes determined here. The effect sizes determined for the interaction of gender and position state that the interaction of the two variables explains between 1.2 percent and 6 percent of the variance of the relevant subdimensions of the work climate. In a computer simulation for an organization with eight hierarchical levels, with 500 positions at the lowest level and 10 positions at the highest level, Martell et al. (1996) showed that even a slight gender bias in the promotion evaluation can lead to a remarkable shift in the gender balance among the top positions in an organization. With a gender bias with an effect size of 1 percent, the proportion of women at the lowest level decreases from 53 percent to 35 percent at the highest level. Comparable cost-benefit analyses of the

connection between psychological work climate and exit from a research career would be desirable.

Second, in the context of the present edited collection, it is worth discussing whether the filter mechanisms discussed could be particularly effective in a research system that works like a “flow heater system,” in which junior researchers have only temporary and part-time contracts for a long time, career prospects are unclear, and performance and competitive thinking are encouraged. Gendered filter mechanisms can plausibly be embedded in the theoretical literature on the masculinization of work culture in science in the context of the diffusion of New Public Management institutions (Thomas and Davies, 2002; Brorsen Smidt et al., 2020). However, this connection has not yet been presented in the context of quantitative studies. Such quantitative studies can only be comparative internationally because it is very likely that the research system before its reformation 20 or 30 years ago, with its ivory tower structures and old boys’ networks, was even more gender-biased than the modern research system is assumed to be.

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Appendices

1. Outcome Variables and Item Construction

Please answer the following questions.

[scaling: Not at all, Slightly, Moderately, Very, Completely]

Vision of a group, its clearness and relevance

- How clear are you about what your group's objectives are?
- How far are you in agreement with these objectives?
- To what extent do you think your group's objectives are clearly understood by other members of the group?
- To what extent do you think your group's objectives can actually be achieved?
- How worthwhile do you think these objectives are to your institute or facility?

Task orientation of a group

- Do members of the group build on each other's ideas in order to achieve the best possible outcome?
- Are group members encouraged to question the basis of what the group is doing?
- Does the group try to identify and address its own flaws and shortcomings, so as to become more effective in what it does?

Do you agree with the following statements about your group?

[scaling: Strongly disagree, Disagree, Neither agree nor disagree, Agree, Strongly agree]

Participation safety of a group

- People keep each other informed about work-related issues in the group.
- People feel understood and accepted by each other.
- Everyone's opinion is listened to even if it is unpopular.
- There are real attempts to share information throughout the group.

Support of innovation of a group

- People in this group are always searching for fresh, new ways of looking at problems.
- In this group we take the time needed to develop new ideas.
- People in the group work together to develop and implement new ideas.

Do you agree with the following statements?

My immediate superior at my institute or facility at the Max Planck Society...

[scaling: Strongly disagree, Disagree, Neither agree nor disagree, Agree, Strongly agree]

Employee-orientation of a leader

- ... respects their subordinates.
- ... is considerate.
- ... allows their subordinates to make decisions.
- ... relies on their subordinates.
- ... is friendly.

Change-orientation of a leader

- ... offers ideas about new and different ways of doing things.
- ... sees possibilities rather than problems.
- ... initiates new projects.
- ... experiments with new ways of doing things.
- ... thinks about and plans for the future.

Structure-orientation of a leader

- ... plans carefully.
- ... is very rigid or exacting about plans being followed.
- ... gives clear instructions.
- ... is controlling in their supervision of subordinates' work.
- ... makes a point of following rules and procedures.

Please answer the following questions.

My immediate superior at my institute or facility...

[scaling: Not at all, Slightly, Moderately, Very, Completely]

Support of a leader as a mentor

- ... uses their influence to advance my career.
- ... supports me in planning my career.
- ... shields me when I am improperly criticized.
- ... gives me tasks through which I can further develop my skills.
- ... brings me into contact with people who can positively influence my career.

2. Descriptive Statistics and Cronbach's Alpha of Outcome Variables

Table A1. Descriptive Statistics and Cronbach's Alpha of Outcome Variables (the Analyzed Main Constructs and Their Subconstructs Are Shown). The Values Refer to the Distribution of the Variables in the Whole Dataset. The Descriptive Statistics of the Analyses Performed Are Given Below.

Variable Name	<i>N</i>	Max. Item Number	Min.	Max.	Mean	SD	Cronbach's Alpha
Main construct: Group climate	3,891	15	1.00	5.00	3.784	0.753	0.899
Vision of a group, its clearness and relevance	3,837	4	1.00	5.00	3.944	0.662	0.833
Task orientation of a group	3,681	3	1.00	5.00	3.574	0.982	0.826
Participation safety of a group	3,865	4	1.00	5.00	3.875	0.858	0.864
Support of innovation of a group	3,726	3	1.00	5.00	3.736	0.905	0.830
Main construct: Perception of leader	4,210	20	1.00	5.00	3.693	0.742	0.827
Employee-orientation of a leader	4,196	5	1.00	5.00	4.163	0.819	0.895
Change-orientation of a leader	4,146	5	1.00	5.00	4.004	0.846	0.877
Structure-orientation of a leader	4,133	5	1.00	5.00	3.228	0.820	0.780
Support of a leader as a mentor	3,862	5	1.00	5.00	3.319	1.125	0.919

3. Parameter Estimates of Group Climate

Table A2. Parameter Estimates with Robust Estimators for Group Climate.

<i>Parameter</i>	<i>B</i>	<i>SE</i>	<i>95% Wald Confidence Interval</i>		<i>Hypothesis Test</i>		
			<i>Lower</i>	<i>Upper</i>	<i>Wald Chi-Square</i>	<i>df</i>	<i>Sig.</i>
Intercept	3.789	0.0301	3.730	3.848	15,855.391	1	0.000
Gender (Female)	-0.193	0.0508	-0.292	-0.093	14.376	1	0.000
Gender (Male)	Reference	-	-	-	-	-	-
Nationality (EU)	-0.040	0.0478	-0.133	0.054	0.685	1	0.408
Nationality (Non-EU)	0.021	0.0432	-0.064	0.106	0.240	1	0.624
Nationality (German)	Reference	-	-	-	-	-	-
Children below 18 (yes)	0.041	0.0389	-0.035	0.118	1.132	1	0.287
Children below 18 (no)	Reference	-	-	-	-	-	-
Position (Directors and research group leaders)	0.403	0.0493	0.306	0.499	66.692	1	0.000
Position (Postdocs)	-0.100	0.0459	-0.190	-0.010	4.785	1	0.029
Position (Other research associates)	0.050	0.0456	-0.039	0.139	1.205	1	0.272
Position (doctoral candidate)	Reference	-	-	-	-	-	-
Gender (Female) × Nationality (EU)	0.007	0.0770	-0.144	0.158	0.008	1	0.929

(Continued)

Table A2. (Continued)

<i>Parameter</i>	<i>B</i>	<i>SE</i>	<i>95% Wald Confidence Interval</i>		<i>Hypothesis Test</i>		
			<i>Lower</i>	<i>Upper</i>	<i>Wald Chi-Square</i>	<i>df</i>	<i>Sig.</i>
Gender (Female) × Nationality (Non-EU)	-0.084	0.0721	-0.226	0.057	1.368	1	0.242
Gender (Female) × Children below 18 (yes)	-0.070	0.0677	-0.203	0.062	1.079	1	0.299
Gender (Female) × Position (Directors and research group leaders)	0.300	0.0847	0.134	0.466	12.579	1	0.000
Gender (Female) × Position (Postdocs)	0.160	0.0743	0.015	0.306	4.669	1	0.031
Gender (Female) × Position (Other research associates)	0.174	0.0764	0.024	0.324	5.187	1	0.023
(Scale)	0.519	0.0135	0.493	0.546	—	—	—

4. Parameter Estimates of Perception of Leader

Table A3. Parameter Estimates with Robust Estimators for Perception of Leader.

Parameter	B	SE	95% Wald Confidence Interval		Hypothesis Test		
			Lower	Upper	Wald Chi-Square	df	Sig.
Intercept	3.700	0.0301	3.641	3.759	15,095.914	1	0.000
Gender (Female)	-0.124	0.0486	-0.220	-0.029	6.553	1	0.010
Gender (Male)	Reference	-	-	-	-	-	-
Nationality (EU)	0.085	0.0483	-0.009	0.180	3.120	1	0.077
Nationality (Non-EU)	0.069	0.0444	-0.018	0.156	2.444	1	0.118
Nationality (German)	Reference	-	-	-	-	-	-
Children below 18 (yes)	-0.016	0.0426	-0.099	0.068	0.140	1	0.708
Children below 18 (no)	Reference	-	-	-	-	-	-
Position (Postdocs)	-0.039	0.0435	-0.124	0.047	0.794	1	0.373
Position (Other research associates)	-0.015	0.0450	-0.103	0.073	0.106	1	0.745
Position (doctoral candidate)	Reference	-	-	-	-	-	-
Gender (Female) × Nationality (EU)	-0.013	0.0772	-0.165	0.138	0.031	1	0.861
Gender (Female) × Nationality (Non-EU)	-0.118	0.0725	-0.260	0.024	2.649	1	0.104

(Continued)

Table A3. (Continued)

<i>Parameter</i>	<i>B</i>	<i>SE</i>	<i>95% Wald Confidence Interval</i>		<i>Hypothesis Test</i>		
			<i>Lower</i>	<i>Upper</i>	<i>Wald Chi-Square</i>	<i>df</i>	<i>Sig.</i>
Gender (Female) × Children below 18 (yes)	-0.046	0.0734	-0.190	0.098	0.387	1	0.534
Gender (Female) × Position (Postdocs)	0.066	0.0695	-0.071	0.202	0.892	1	0.345
Gender (Female) × Position (Other research associates)	0.099	0.0767	-0.052	0.249	1.651	1	0.199
(Scale)	0.543	0.0143	0.515	0.572	-	-	-

Chapter 3

Workplace Bullying in Academia: Interaction of Gender, Nationality, Age, and Work Context of Scientific and Non-Scientific Employees in a Large German Research Organization

Clemens Striebing

Abstract

Purpose: The study elaborates the contextual conditions of the academic workplace in which gender, age, and nationality considerably influence the likelihood of self-categorization as being affected by workplace bullying. Furthermore, the intersectionality of these sociodemographic characteristics is examined.

Basic Design: The hypotheses underlying the study were mainly derived from the social role, social identity, and cultural distance theory, as well as from role congruity and relative deprivation theory. A survey data set of a large German research organization, the Max Planck Society, was used. A total of 3,272 cases of researchers and 2,995 cases of non-scientific employees were included in the analyses performed. For both groups of employees, binary logistic regression equations were constructed. The outcome of each equation is the estimated percentage of individuals who reported themselves as having experienced bullying at work occasionally or more frequently in the 12 months prior to the survey. The predictors are the demographic and organization-specific characteristics (hierarchical position, scientific field, administrative unit) of the respondents and selected interaction terms. Using regression equations, hypothetically rel-

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evant conditional marginal means and differences in regression parameters were calculated and compared by means of t-tests.

Results: In particular, the gender-related hypotheses of the study could be completely or conditionally verified. Accordingly, female scientific and non-scientific employees showed a higher bullying vulnerability in (almost) all contexts of the academic workplace. An increased bullying vulnerability was also found for foreign researchers. However, the patterns found here contradicted those that were hypothesized. Concerning the effect of age analyzed for non-scientific personnel, especially the age group 45–59 years showed a higher bullying probability, with the gender gap in bullying vulnerability being greatest for the youngest and oldest age groups in the sample.

Interpretation and Relevance: The results of the study especially support the social identity theory regarding gender. In the sample studied, women in minority positions have a higher vulnerability to bullying in their work fields, which is not the case for men. However, the influence of nationality on bullying vulnerability is more complex. The study points to the further development of cultural distance theory, whose hypotheses are only partly able to explain the results. The evidence for social role theory is primarily seen in the interaction of gender with age and hierarchical level. Accordingly, female early career researchers and young women (and women in the oldest age group) on the non-scientific staff presumably experience a masculine workplace. Thus, the results of the study contradict the role congruity theory.

Keywords: Self-labeling; survey; Max Planck Society; intersectionality; work climate in academia; work culture; social identity theory

Bullying in Academia ...

... has received increased attention in terms of media coverage in recent years (Devlin, 2018; Siegel, 2018; Science, 2020). In this context, there has also been international attention due to individual cases of bullying at the Max Planck Society, one of Germany's largest non-university research organizations (Else, 2018). In response to these specific cases, the Max Planck Society conducted an organization-wide survey on the work climate in its institutes and facilities among all scientific and non-scientific employees and implemented additional measures to address bullying and harassment (Schraudner et al., 2019).¹ The output of the

¹The author is aware of the debate about an appropriate designation of “non-scientific personnel” and of “early career researchers.” As the importance of “non-scientific personnel” for research should be appreciated, it might therefore not be appropriate to merely describe such members of staff with a negative demarcation. An alternative could thus be the term “structural personnel.” In this study, however, the term “non-scientific personnel” is used in accordance with the official designations of the

survey that was conducted is the world's largest data set on work climate, bullying, and sexual discrimination in a single research organization with a total of 9,078 valid responses from its employees (response rate: 38%).

It is important to note that this work does not claim that bullying in academia is more relevant than bullying in other parts of society, as understanding workplace bullying as a social phenomenon and enabling organizations to design effective measures for prevention and management are always relevant. However, individual psychological vulnerability and social vulnerability are inextricably intertwined due to a person's specific positioning in an organization. Current research indicates that there is, for example, no gender that is fundamentally discriminated against. Discrimination and subsequent discriminatory bullying only arise from a specific organizational context that stigmatizes a person as a minority or otherwise as a "worse fit" (Salin, 2021). Due to its high number of cases, the data set used here allows for more complex analyses that also consider interaction effects between demographic characteristics and the work context of scientific and non-scientific employees in a large research organization with numerous institutes and other facilities.

The primary aim of this study was to analyze how the socio-demographic characteristics gender and nationality of researchers in the Max Planck Society affect the likelihood of experiencing workplace bullying in the context of their respective hierarchical position and discipline. Secondly, for non-scientific staff, the effects of age and gender in combination with the respective administrative unit on the likelihood of self-labeling as being bullied were investigated. The guiding hypothesis of this study was that gender, age and nationality are more likely to be socially sanctioned in some organizational contexts than in others and the results thus contribute to our understanding of these contexts.

The following section presents a comprehensive literature review. First, the concept of workplace bullying and the relationship of bullying to discrimination are discussed. Furthermore, the specifics of bullying in academic workplaces are outlined. The main part of the section is the derivation of the study hypotheses and a detailed presentation of the related theories. The section ends with a brief discussion of the specifics of the Max Planck Society in academia.

Following the theoretical foundations of this study, the research approach is presented, more specifically: the data set used, the variable model, and the methodology. Binary logistic regression equations were set up for both scientific and non-scientific employees. The binary outcome variable of the equation indicates whether a person reported having been bullied occasionally or more often (1) or not (0). The predictors are the aforementioned demographic as well as

respective status group in the Max Planck Society. The term "early career researchers" is problematic because it implies a junior status with regard to the work experience of the group in question, which is an improper generalization in many cases, especially with regard to postdocs. This article uses the terms "early career researchers" and the concrete differentiation into doctoral candidates and postdocs in a similar way – but not without having drawn attention to the associated problems at this stage.

organization-specific characteristics of the respondents and selected interaction terms. Using the regression equations, the hypothetically relevant conditional marginal means were calculated and compared using t-tests.

The results section of the study is followed by a detailed section on the interpretation of the statistical results in light of the formulated hypotheses. In the conclusion of the study, its limitations are presented and the theoretical, as well as practical implications that can be derived from the results, are discussed.

Literature Review

The following is a comprehensive description of the state of the art this study is based on. The concept of workplace bullying and its specifics in the academic workplace are explained, and the theoretical framework of the hypothesis testing conducted is comprehensively presented. The section ends with a reflection on the specific contextual conditions of the Max Planck Society.

Workplace Bullying: Conceptualization, Prevalence, And Relationship To Discrimination

This study is guided by a European, especially Scandinavian, tradition of the concept of bullying (Leymann, 1990; Einarsen et al., 1990). Characteristic of this tradition is a thematic focus on workplace bullying, a disciplinary anchoring in occupational and organizational psychology, and the evaluation of bullying based on individual data collected using questionnaires. The programmatic definition of bullying regularly includes the following elements (Matthiesen and Einarsen, 2010, 2020): (1) a circumstance of “workplace victimization” is present. This means that the well-being of an employee or employees is impaired by one or more people in an organization; (2) there is an imbalance of power between the victim and the perpetrator(s). Because of this, the victim has difficulty defending themselves against the attacks on their person; and (3) there is a need for regularity. The victim faces systematic, repeated, and at least partially intentional inappropriate aggression.

A limitation of this occupational psychology approach is the regular reduction of bullying to a conflict between an individual as a victim and an individual or group of individuals as perpetrators. This is accompanied by the assumption that at least one of the two parties engages in behavior that is inappropriate to the situational circumstances of the workplace but it ignores the character of bullying as a sociological phenomenon. Bullying cases are often the result of a reciprocal interaction dynamic in which, at least initially, it may not be possible to clearly differentiate between a victim and a perpetrator. Another limitation is that the approach does not consider the organizational context. However, it is the organizational context that predetermines clashes of interests, the instruments of power available to the bullying parties, and other factors that promote or inhibit escalation (Hodgins et al., 2020; Mittelstaedt, 1998).

On the other hand, the strength of the Scandinavian school is that it focuses on the self-perceptions of the organizational members surveyed: who would

describe themselves as being bullied? What types of misconduct do the respondents experience in the organization? It is these questions that primarily interest HR managers and employee representatives of organizations in the context of the existing structural conditions of an organization and thus presumably explain the great popularity of the Scandinavian occupational psychology approach.

The measurement of bullying using a questionnaire is accomplished through one, or ideally both, of two established approaches (Nielsen et al., 2010). The first approach consists of the use of behavioral item batteries to enquire about the types of behavior that are referred to as “bullying” in the socio-scientific literature, but which only in some cases conform to people’s everyday understanding of the term. A distinction can be made between behavior that is work-related, personally directed, or physically intimidating according to the Negative Acts Questionnaire in its revised version (Einarsen et al., 2009).² Following this approach, respondents indicate how often they have experienced several different types of behavior at work, for example, during the 12 months preceding the survey. The second approach, and the one used here, centers on self-assessment, whereby respondents are asked how often they were subjected to bullying in a specific period preceding the survey and beyond. Following the practice in comparable studies, respondents are provided with a definition of bullying to go along with the question (Salin, 2021; see below for definition).

The type of survey approach used has important consequences for the prevalence rates that can ultimately be determined from a given study. Nielsen et al. (2010) showed this in a meta-study in which they evaluated the bullying prevalence rates of 70 studies. In random samples measuring bullying by behavioral items, an average of 14.4% of respondents were identified as being bullied. In random samples that use the self-labeling approach and do not provide respondents with a definition of bullying, an average of 17.4% of respondents identified themselves as bullied, whereas if a definition was provided, on average 9.3% of respondents categorized themselves as bullied.

In the same article, the authors also demonstrated the importance of the national context. While the prevalence rate of self-labeling with definition was 4.6% in Scandinavia, it averaged at 13.8% in other European countries and 19.8% in non-European countries. Even for the data set used here, the possible prevalence rates resulting from different measurement methods and assessment concepts vary considerably (Schraudner et al., 2019, p. 60).

The survey approach has been shown to influence not only the prevalence rates determined, but also the results for the variable correlations examined, especially in gender analyses. For example, using a probability sample of the Swedish population, it was shown that women tend to categorize themselves as bullied somewhat more frequently, whereas according to the behavioralist approach, men experience bullying significantly more often (Rosander et al., 2020).

²Also established are the Leymann Inventory of Psychological Terror and the Workplace Aggression Research Questionnaire.

Although especially the self-labeling method is not free of biases resulting from the personality of the respondent and their cultural context, the study presented here follows [Salin and Hoel's \(2013\)](#) view that this approach allows for a holistic assessment of social misconduct, taking factual dependencies between the involved parties into account, and their possibilities to harm and defend each other.

While there are numerous empirical studies on the prevalence and affectedness of bullying and the concept of discrimination, there has been little discussion on the specific relationship between the two concepts (exceptions include [Lewis et al., 2020](#); [Parkins et al., 2006](#); [Salin and Hoel, 2013](#)).

There is a large overlap between bullying and discrimination, which is why it seems justified to examine bullying in the context of the main topic of discrimination (which is of particular interest due to the focus of this edited collection). At the same time, the two concepts also have essential unique characteristics. In both bullying and discrimination, a person experiences treatment, by one or more other persons, that is viewed as inappropriate in the respective work context. In the case of both, the conflict dynamics and the occupational and health consequences for those affected heavily depend on the contextual and individual psychological preconditions of the conflict parties ([Parkins et al., 2006](#)).

The main criteria that distinguish discrimination from bullying are, firstly, that discrimination does not necessarily have to be permanent as a person may have been discriminated against once in the workplace in a legally relevant way but not bullied once as, by definition, bullying is a processual conflict. Secondly, different types of behavior can be clearly distinguished. Exclusively specific to gender-based discrimination are, for example, unwanted sexual attention or sexual coercion. Thirdly, discrimination is based on a person's membership in an identity group that is defined by primary identity characteristics – that is, characteristics that are regularly visible, have been present since birth, and relevantly influence a person's socialization ([Jenkins, 2004](#)). In contrast, the target groups of bullying are broader and more heterogeneous. They can also include members of primary identities but also result from situational clashes of interests in an organization or simply from purely affective antipathies based on external appearance, individual value orientations, personality, and others.

There is no clear hierarchy between bullying and discrimination, and it is often difficult for victims to classify themselves according to one of the two concepts ([Parkins et al., 2006](#); [Lewis et al., 2020](#)). Exemplary studies dealing with the intersection of bullying and discrimination come from [Misawa \(2015\)](#), who discussed the intersectional dynamics of bullying based on sexual orientation and race under the hierarchical contextual conditions of academia, or [Fox and Stallworth \(2005\)](#), who developed and tested an item scale to measure racial/ethnic bullying. Accordingly, the present study investigated the influence of primary identity characteristics on the likelihood of classifying oneself as affected by bullying at the workplace as a function of further organizational characteristics. In this respect, the study relates to the literature on identity-related bullying experiences and its results provide insights into the extent to which the bullying experienced by employees of the Max Planck Society has a discriminatory character.

Workplace Bullying in Academia

This study examines bullying in academic settings at Max Planck Society institutes and facilities. Academic bullying is defined as a form of bullying that victims experience in academic workplaces such as universities and research institutions. The bullying can come from faculty, administrators, and students (Prevost and Hunt, 2018).

Compared to the general working population, higher bullying rates are regularly found in academic institutions (Keashly, 2021). However, compared to other specific industries, the prevalence rates of bullying in academia are often significantly lower and within individual institutions, faculty members are generally less affected by bullying than non-scientific staff (Keashly, 2021). In a comprehensive literature review, Keashly (2021) determined the prevalence rates for faculty bullying measured by self-labeling with a definition and in the past six-month period within the range from 6.2% in a Norwegian study to 37.7% in a US study. Based on the past 12 months prior to the survey, the prevalence rates varied from 26% to 52.6%. The different prevalence rates are only comparable to a very limited extent, as the respondent groups, their organizational and national context, and the specific question and item formulation vary greatly between the individual studies.

Leaving aside the question of the prevalence of bullying in academia, the predictors for bullying identified among scientific employees differ from those identified for broader samples of the working population, which can be taken as an indication of the specificities of the contextual conditions of the scientific system. In a large and heterogeneous sample of Flemish-speaking Belgians, Notelaers et al. (2011) showed that the bullying risk is higher among employees in the 35–54 age group and lower among employees under 25 and on a temporary contract (similarly, Daly et al., 2018). In contrast, among academic staff, it is those who are generally on temporary contracts and pursuing doctoral degrees who have the highest bullying risk (Prevost and Hunt, 2018). A similar pattern could also be found in the work with the present data set, which is why two separate theoretical models explaining bullying for scientific and for non-scientific employees were set up below and examined in the following.³

Roughly summarized, the distinctive features of the academic workplace are a workforce with an above-average level of education and a higher-than-average level of fixed-term contracts.⁴ There is probably no other profession that has such comparably well-trained staff working under similarly insecure career conditions. The interplay of the factors of fixed-term contracts and high qualifications yields

³Since only a limited number of variables could be included in the regression equations presented here for data protection reasons (see footnote 5), among other things, the duration of employment (tenure) and a distinction between permanent and temporary contracts were not considered.

⁴In Germany, the share of fixed-term contracts among researchers is 67.9 percent. For female researchers, the fixed-term contract rate was 74.5 percent and for male researchers it was 63.6 percent (Banscherus, 2020, p. 34).

further specifics such as a high level of one-sided dependence of doctoral candidates and postdocs on their supervisors, strong competition for permanent positions, and low levels of family-friendliness due to the lack of ability to plan an academic career (Milojević et al., 2018; Leemann, 2010). From the perspective of non-scientific employees, a distinctive feature of the academic workplace is that their institutions are often run by scientific employees, and they are often in a service relationship with scientific employees and students (Keashly, 2021).

Theoretical Framework: Scientific Employees and Categorical Predictors of Bullying

In this study, the influence of the sociodemographic characteristics of gender and nationality on the likelihood of bullying experiences was modeled for scientific employees of the Max Planck Society.⁵ The hierarchical position and the section affiliation of the respondents were considered as being contextual factors.

Generally, sex, gender, and nationality are proxy variables from which concrete implications for bullying in the workplace can only be derived indirectly, depending on further contextual factors (Salin, 2021). This indeterminacy is reflected in the mixed results of studies on the impact of gender on bullying probability (Prevost and Hunt, 2018; Salin and Hoel, 2013). In contrast, in studies on the effect of ethnicity or race, the results are clearly pertinent (Prevost and Hunt, 2018; Bergbom and Vartia, 2021).

One approach to explaining the indirect effects of gender is the social role theory. This assumes that a person's gender is associated with certain stereotypical role expectations, against which a person defines their own identity and is subject to evaluation of their actions (Eagly and Wood, 2012; Salin and Hoel, 2013). According to these expectations, certain behaviors (e.g., related to work-family balance) are considered more or less appropriate, and there is pressure on individuals to conform to gendered roles. Accordingly, gender differences in bullying would be expected to be particularly salient in contexts in which, first of all, women or men violate the behavioral expectations associated with their gender. Secondly, an increased bullying probability can be expected if typical male or female behaviors are discriminated against by organizational conditions.

⁵In the following, two different theoretical models are formulated to predict the probability of self-labeling as bullied for scientific and for non-scientific employees. Different predictors are used, except for gender. Ideally, the same regression models could have been set up for both groups of employees to achieve optimal comparability of results between the two groups. This had to be dispensed with for reasons of data protection. The two regression models were put together in such a way that no individual person involved in the survey can be identified on the basis of their sociodemographic characteristics or their response behavior be estimated. The only combined predictor model that would meet this privacy requirement would include age, gender, and section. Here, however, it was decided to set up regression models that were as informative and hypothesis-driven as possible and that allow, in particular, the consideration of the influence of hierarchical position and administrative unit as key contextual conditions.

Conceivable examples of this are the difficult reconciliation of care duties with the expectation of a high and temporally flexible presence. Thirdly, [Salin and Hoel \(2013\)](#) argue that it is presumably due to differences in gender roles that women more often tend to perceive themselves as being bullied than men.

The indirect effects of gender can also be explained by social identity theory. According to this theory, people derive part of their self-confidence from comparing themselves with other people. For this purpose, the self and fellow human beings are divided into groups based on certain visible characteristics and a distinction is made between in- and out-groups. The individual strives for a self-image that is as favorable as possible by looking for what they consider to be positive distinguishing features from the in-group. If this is not possible, the individual tries to become part of it, to negate it, or to enter into direct confrontation with it ([Tajfel and Turner, 1986](#)). In work groups, gender is an important salient factor and an influence on the self-concept of a subgroup in an organization is very likely ([Salin and Hoel, 2013](#)). Accordingly, an increased bullying probability would be expected if men or women are in the minority in their work group in a specific work context and are thus perceived as non-prototypical group members.

In light of social role and social identity theory, female researchers would generally be expected to have an increased bullying probability for the following reasons. First, women are underrepresented in research occupations in the EU and especially in Germany. In the German higher education sector, the proportion of women in 2018 was 38.7% and in the business enterprise sector 14.7% ([She Figures, 2018](#), pp. 65–67). Second, male role expectations shape science and there is a broad body of research that describes the socially embedded ideal type of male researcher as rather masculine and Caucasian ([Finson, 2002](#); [Thornton, 2013](#); [van den Brink and Benschop, 2012](#)). Third, discrimination against the conservative female role by the structural conditions of the research system is documented by the evident “leaky pipeline” ([Zacharia et al., 2020](#)). Thus, the hypothesis is formulated that a higher probability of self-labeling as bullied can generally be established for female researchers:

H1. A higher proportion of female than male researchers categorize themselves as bullied.

In the following, hypotheses about the interaction of the gender gap in bullying according to different intersectionality and contextual factors of the work are discussed. Concerning the influence of the nationality of the respondents on the gender gap, the organizational cultural studies of [Hofstede \(2001\)](#) can be taken up. Following his cultural distance theory, the shared norms and values of populations of individual countries differ, with some countries having greater cultural similarities than others. Hofstede’s research continues as part of the *Globe* project, with the currently available data set dating back to 2004 when 17,000 middle managers worldwide were surveyed about the leadership culture in their workplace and their value orientations ([Globe, 2021a](#)).

Nine dimensions were identified to characterize the respective national culture. One was gender egalitarianism, which is defined as the degree to which a

collective minimizes (and should minimize) gender inequality (Globe, 2021b). Based on the data, it is possible to differentiate how respondents evaluate gender equality practice in their country and what normative attitudes they had toward gender equality. Accordingly, Germany was characterized by a below-average assessment of gender equality practice, with an above-average normative claim to gender equality on the part of the respondents (Globe, 2021c).⁶

Due to their age, the data of the Globe project are not suitable for differentiated hypotheses on the influence of nationality on the gender gap in bullying experiences. For example, the retraditionalization of the image of women in several Eastern European countries in the last two decades is to be mentioned here. From the research of the Globe project, however, the hypothesis is derived that two people are more likely to have internalized different concepts of gender roles if these people come from different cultures. Conflicts may also arise when different gender role conceptions meet, as the actors involved may find the gendered behavior of the other actor irritating or inappropriate.

The Max Planck Society and almost all its institutes and facilities are located in Germany. Accordingly, the majority of the employees surveyed, especially among the non-scientific staff, stated that they were of German nationality. It would be expected that the cultural distance between Germany, as part of the cultural area of “Germanic Europe,” and the cultural areas with which there has historically been less cultural exchange (e.g., Southern and Confucian Asia) is the greatest. In line with this assumption, in the present study nationality was grouped into the categories German, EU, and non-EU. The cultural areas covered by the non-EU group are very heterogeneous and the group includes countries such as the USA, China, India, or even the UK and Switzerland. Nevertheless, it can be assumed that there are relevant differences in the mean values of the various groups since the group with non-EU nationalities has a higher average cultural distance to Germany than the group with EU nationalities.

The hypothesis presumes that only the gender role conception of one gender conflicts with the hegemonic conception of the gender role in Germany in the case of people from other cultural groups – otherwise there would be no gender gap in the bullying probability by nationality. Hofstede’s (2011) own studies using a large data set of IBM employees in the 1970s imply that, in particular, men’s gender role conceptions show strong variation. However, it is unclear how this observation would be reflected practically in the context at hand: do men from other cultural backgrounds feel bullied more often on average because they do not conform to the German image of men; do women from other cultural backgrounds feel bullied more often because they are irritated by the different behavior of German men; and of course, can the results of the time of Hofstede’s

⁶The assessment is derived from own calculations, based on a data set from the Globe project. The mean value calculated for the 62 states included in the data set is 3.38 on the Gender Egalitarianism Societal Practices Scale (Germany, West: 3.10/Germany, East: 3.06) and 4.50 on the Gender Egalitarianism Societal Values Scale (Germany, West: 4.89/Germany, East: 4.90).

study be transferred to the present at all? Due to the uncertainties involved, the hypothesis was formulated openly in this regard.

H2. The difference between female researchers and male researchers who categorize themselves as bullied is larger among researchers with EU nationality than among German researchers, and largest among non-EU researchers.

Regarding the interaction of the gender and hierarchical position of researchers, two effects are conceivable. Striebing (in this collection) raises the issue of role congruency when examining the perception of the work climate. According to Eagly and Karau (2002), professional pressure and the probability of professional failure increase more strongly among women compared to men with each further level of the hierarchy. Striebing's study, however, showed the clearest gender gap in the evaluation of the work climate at the level of doctoral candidates. Taking this result into account, and considering the higher bullying probability of women in research discussed above, the hypothesis was formulated that the gender gap in bullying probability is highest at the entry-level of the research career. At higher career levels, a flattening of the gender gap among respondents in the sense of self-selection would be expected, as the specific contextual conditions of the research system were either accepted or those women who reacted with resistance at lower career levels did not advance in the hierarchy (Brosen Smidt et al., 2020).

H3. The difference between female researchers and male researchers who categorize themselves as bullied decreases with increasing hierarchy level.

Furthermore, it is hypothesized that section affiliation is an important contextual factor that influences differences in bullying probability by gender. The Max Planck Society divides its scientific institutes into the Biology and Medicine Section (BMS), the Chemistry, Physics and Technology Section (CPTS), and the Humanities and Social Sciences Section (HSS).

According to social identity theory, it is hypothesized that women researchers tend to categorize themselves as bullied more than male researchers, especially in those fields in which they are in a clear minority. In Germany, such fields of study are information and communication technologies and engineering, manufacturing, and construction, whereas in education studies, for example, women make up a clear majority of doctoral graduates (She Figures, 2018, p. 23). In the data set used here, the proportion of women researchers is 51.4% in BMS, 52.4% in HSS, and 26.2% in CPTS.⁷

H4. The difference between female and male researchers who classify themselves as bullied is most pronounced in the CPTS when comparing the sections of the Max Planck Society.

⁷*N* = 3,899.

In a meta-study of the role of ethnicity in workplace bullying, [Bergbom and Vartia \(2021\)](#) summarize that social identity theory and the similarity-attraction paradigm imply that “otherness” is regularly socially sanctioned. Concerning the cultural distance theory, they add that the respective cultural similarity of a person in relation to a target context has a decisive influence on the extent to which this person is perceived as “different.”

The hypothesis formulated here on the effect of nationality on researchers’ likelihood of self-reporting as bullied again draws on Hofstede’s (2001) cultural distance theory (also [Triandis, 1994](#)). Using a sample of employees of a transport company in Finland, [Bergbom et al. \(2015\)](#) showed that bullying risk increases with cultural distance and that no statistically significant differences were found between groups socialized in the same or a similar cultural space. Using a sample of Danish healthcare students, [Hogh et al. \(2011\)](#) similarly showed that “non-Western” immigrants exhibited increased vulnerability to bullying experiences.

It is also conceivable that a higher likelihood of self-labeling as bullied is a result of concrete contradictions in the clashing cultures. Using an Australian-Singaporean sample of employees, [Loh et al. \(2010\)](#) suggest that the power distance acceptance imparted in the two cultures may be crucial for the fact that experiences of workplace bullying had a higher impact on the job satisfaction of Australians than Singaporeans.

A third aspect could be a social integration barrier, which increases with increasing cultural distance. Accordingly, a higher bullying risk among non-EU researchers would not be a consequence of social group conflicts, but rather the result of greater language barriers, a greater geographical distance to relatives and friends, and possibly less familiarity with organizational structures and processes (see Gewinner in this collection). Certain experiences of foreignness are simply intrinsic to an internationally mobile research career, without these necessarily being the results of exclusion and marginalization processes.

H5. A higher proportion of non-EU than German and EU researchers categorize themselves as bullied.

In the same way as for the prediction of the interaction of gender and hierarchy on the bullying risk above, two perspectives are conceivable for the prediction of the interaction of nationality group and hierarchy. According to social identity theory, it is reasonable to assume that foreign researchers are more likely to experience bullying than German researchers, especially in the case of early career researchers. As discussed above, working abroad is inevitably accompanied by a certain degree of social disintegration. In this sense, the experiences of foreign researchers during the doctoral phase or the postdoc phase are different from those of local researchers. It presumably makes a considerable difference whether one’s cultural experiences abroad are as a researcher being courted for a leading position or as one of many young talents. In interviews with employees of the Max Planck Society, early career researchers also highlighted conflicts with non-scientific employees. It is plausible that doctoral candidates experience such conflicts more often than researchers who are more senior due to the hierarchical

structure of the Max Planck institutes. Typical conflicts arise, for example, from language barriers between the mostly German non-scientific employees and the scientific employees, who are very heterogeneous in terms of their nationality.

On the other hand, according to the role congruity theory, it could be assumed that, due to a higher cultural distance, directors and research group leaders from non-European cultures have greater problems being recognized as legitimate superiors compared to German and EU researchers (Eagly and Karau, 2002) and experience more bullying than early career researchers due to their exposed position. Both these ideas were tested with the following hypotheses:

H6a. The difference between German researchers compared to EU and non-EU researchers who categorize themselves as bullied decreases with increasing hierarchy level.

H6b. The difference between German and EU-researchers compared to non-EU researchers who categorize themselves as bullied increases with increasing hierarchy level.

To predict the influence of the interaction of nationality group and section, social identity theory can again be applied. According to this theory, differences in the bullying probability between German and foreign researchers would be particularly pronounced in those departments in which there is a considerably lower proportion of foreigners, that is, both EU and non-EU employees.

Table 6 shows that the proportional ratio of German, EU and non-EU researchers in the three sections of the Max Planck Society is largely similar. In this respect, it can be expected that no relevant interaction effect between nationality and section will result from the specific distribution of nationalities in the individual sections of the Max Planck sample investigated here.

However, it can be assumed that specific subject cultures exist in the sections that discriminate against nationality to varying degrees. It would be plausible, for example, that researchers in Humanities and Social Sciences are more

Table 6. Cross-tabulation of the Proportion of the Respective Nationality Groups of Researchers in the Sections of the Max Planck Society ($n = 3,904$).

	Biology and Medicine (BMS) (%)	Humanities and Social Sciences (HSS) (%)	Chemistry, Physics and Technology (CPTS) (%)	Total (%)
Other EU country	22.8	17.1	22.1	21.5
Non-EU country	20.7	23.9	19.2	20.5
German	56.5	59.1	58.7	58.0
Total	100.0	100.0	100.0	100.0

vulnerable to bullying because the German language may be more important here (e.g., in legal studies) and the research teams are smaller on average and, thus, more affected by personal relationships. Keashly (2021) provides a literature overview of studies considering the influence of disciplinary cultures. She concludes that all relevant studies could prove a corresponding effect. In explicit comparisons, a higher prevalence of bullying was found in more practice-oriented rather than theory-oriented disciplines, as well as in arts, humanities, and social studies (Keashly, 2021). However, it is unclear to what extent differences between the disciplines can be attributed to different working modes or cultures or to the disciplinary sensitization of the respondents (which would be plausible, e.g., in psychology).

It is to be noted that, first, an interaction effect between Max Planck sections and nationality does not already result from the distribution of the two characteristics in the sample, and second, it is likely that the sections have cultures that are more conducive to experiences of (self-reported) bullying in different ways. However, it can only be speculated how these different disciplinary cultures shape the interaction effect of section and nationality. Given the current state of research, one would expect HSS to have the highest prevalence of self-reported bullying. However, as mentioned, this does not necessarily mean that a nationality gap is associated with it. In fact, the opposite could be conceivable, namely that if all researchers are more likely to report having experienced bullying, there might even be weak or no differences between nationalities. Given these theoretical uncertainties, an open exploratory hypothesis was formulated.

H7. There are differences between the sections of the Max Planck Society in the degree to which EU and non-EU researchers classify themselves as bullied in contrast to German researchers.

Theoretical Framework: Non-scientific Employees and Categorical Predictors of Bullying

While the social role and social identity theories have been used to explain why a general gender gap in bullying self-labeling is assumed for researchers, the two theories suggest a comparatively lower gender gap for non-scientific employees. From the perspective of social role theory, employment relationships in the structural sector are more often of a permanent nature, can more easily be temporarily converted into part-time relationships, and are thus more family-friendly than the employment relationships of early career researchers in particular. Regarding social identity theory, female employees are more frequently represented in the non-scientific area and are thus not minorities in their respective fields of work. In the data set used here, there are six men and four women for every 10 researchers, whereas there are four men and six women for every 10 non-scientific employees.

At the same time, the existence of a gender gap in self-labeling as being bullied can also be expected among non-scientific personnel and the bullying probability is particularly high between two actors with a structural power imbalance (Keashly, 2021). This power relation is of a gendered nature, as supervisors, in

general, tend to more often be male and females are less likely to bully male employees whereas men bully both women and men (Salin and Hoel, 2013; Keashly, 2021; Gardner et al., 2020).

H8. A higher proportion of female than male non-scientific employees categorize themselves as bullied.

The likelihood that experiencing workplace bullying also increases with age can be hypothesized. In a study with a sample from the Australian Nursing and Midwifery Federation, De Cieri et al. (2019) showed that individuals aged 36 and older were significantly more likely to experience downward bullying (bullying exerted by a leader) than young employees in the age group 18–25. In turn, upward bullying, that is, bullying by subordinates, affected individuals aged 46 and older significantly more often than young employees. Notelaers et al. (2011) also came to similar conclusions based on a Belgian sample, whereas Ortega et al. (2009) did not find any statistically significant differences between the age groups using a sample of Danish employees.

Regarding age, this study predicts that of the four age categories examined here, the group of persons aged 60 and older most frequently categorizes themselves as being bullied. This hypothesis can be plausible in several ways. First, bullying constellations usually escalate over a longer period. There is a multi-step progression that roughly comprises a phase of conflict hardening, a phase of increasingly conscious self-defense, and an escalation phase in which increasingly ruthless attempts are made to defeat the perceived opponent (Mittelstaedt, 1998). The tenure of younger workers in an organization is often simply too brief to have fully experienced this dynamic. Second, younger workers are less likely to have leadership responsibilities, whereas middle managers may be equally exposed to downward and upward bullying. Third, the influence of ageism, or age discrimination, is conceivable and discrimination against employees according to their age group affects all employee groups equally (Triana et al., 2017). In this context, it can be deduced from the relative deprivation theory (Triana et al., 2017) that older employees, in particular, have clearer expectations than younger employees as to what kind of treatment they “deserve” from their colleagues and what kind of behavior they consider disrespectful, discriminatory, or inappropriate due to their more extensive work experience.

H9. The proportion of non-scientific employees who categorize themselves as bullied increases with age.

For the interaction of gender and age, a deepening of the gender gap in the categorization as being bullied with increasing age is presumed. This can also be explained in several ways (Kirton and Greene, 2010, p. 109). First, youth is sometimes a gendered requirement for certain jobs, conceivably for the event sector, for example. Second, potential employers discriminate against women with children and attribute lower levels of commitment and less time availability to them. Third, the social role of women is often accompanied by higher individual

care responsibilities, which means that women often invest less energy in their work than their male colleagues in the decisive career years. When women then invest more in their careers in later years, they suddenly find themselves competing against younger male colleagues as well.

H10. The difference between female and male non-scientific employees who categorize themselves as bullied increases with age group.

The effect of the interaction of gender and the work unit in which a non-scientific employee operates can be predicted using social identity theory. In the data set used here, the percentage of women in “Technology and IT” is 18.6%, in “Administration” 77.8%, and in “Other Services” 74.9%. Accordingly, it is reasonable to assume that the likelihood of categorizing oneself as bullied is higher for women in Technology and IT than for men. In the other two areas, men would be expected to categorize themselves as bullied more often than women.

H11. In the Technology and IT unit, a gender gap to the advantage of men can be found. In the Administration and Other Services units, a gender gap to the advantage of women can be found.

Context

The basis of the study conducted here is an online survey of employees of the Max Planck Society. With more than 23,600 employees and 86 institutes and facilities in Germany and abroad, the Max Planck Society is one of the largest non-university research institutions in Germany (Max-Planck-Gesellschaft [Max Planck Society], 2020).

As a research association solely committed to basic research, the Max Planck Society has several special features that set it apart from universities and other non-university research institutions in Germany such as the Helmholtz Association or the Fraunhofer Society. Striebing in his contribution on work climate (in this collection) already presents various specifics of the Max Planck Society, which are repeated only to the extent of adding aspects relevant here.

First, the Max Planck Society is a pure research organization and it thus places no teaching obligation on its scientific staff. Teaching, that is, the regular unavoidable contact with students, is one of the most frequent sources of bullying for scientific staff (Lampman et al., 2009). In this respect, it can be assumed that female researchers at universities generally have more frequent experiences of contrapower harassment, namely situations in which they are harassed by persons who have less formal power within the shared academic institution than are Max Planck scientists.

Second, the scientific staff of the Max Planck Society is significantly more international than the average German standards in academia. It can be assumed that the integration of foreign researchers and the interaction between German and foreign researchers as well as the interaction between mostly German non-scientific staff and foreign staff is commonplace. Accordingly, a foreign origin would be a

less frequent cause of bullying and discrimination experiences in the Max Planck Society than is presumably the case in other German research workplaces.

Research Approach

This section explains the data set used, describes the variables of the two binary logistic regression models, and the methodological procedure.

Data

A data set of the Max Planck Society was used, in which its scientific and non-scientific employees and scholarship holders were surveyed about their work climate and their experiences of bullying and sexual discrimination. The data set, which was collected in February and March 2019, is described in more detail in Striebing's contribution on work climate (in this collection).

To consider the different employment and career conditions of scientific and non-scientific employees, the data set was split and separate analyses were conducted for researchers and non-scientists. The data set contains 4,308 documented cases of researchers, of which 3,272 cases could be used for the analysis due to a sufficient variable coverage. Non-scientists are represented in the data set with 3,817 cases of which 2,995 cases could be processed.

The data set was treated as a full survey whereby the meaningfulness of the data interpretation is limited to the sample and its specific organizational and national context. Therefore, the interpretation of the results is focused on the effect sizes – here as conditional differences of the estimated marginal means. However, the results of the Wald test statistics including significance values of the conducted t-tests and the confidence intervals of the effect sizes were also provided to discuss the robustness of the effects.

Variables

In the survey, behavioral items and a general question for self-labeling were used to measure the prevalence of bullying at the Max Planck Society. In this study, only bullying according to self-labeling was analyzed and the respective question was positioned after the battery of behavioral items. Therefore, it can be assumed that the respondents were primed in some way with a broad concept of bullying. The original item wording was as follows:

“Bullying” here denotes repeated and persistent negative behavior directed towards one or several individuals, which creates a hostile work environment. The targeted individuals have difficulty defending themselves; in other words, bullying is not a conflict between parties of equal strength.

Have you been subjected to bullying at your current workplace at the Max Planck Society during the last 12 months? (Never – Occasionally – Monthly – Weekly – Daily)

Here, all those persons were defined as “bullied” who indicated in the self-ascription to have experienced bullying at least occasionally (or monthly, weekly, daily) in the sense of the above definition. In the questionnaires analyzed here, 8% of scientific employees and 12% of non-scientific employees reported having been bullied in the sense of the definition (see Table 7).⁸

As in other studies, the frequency of bullying in the Max Planck data set used here differs depending on how it is measured, that is, by self-labeling or through behavioral items (Schraudner et al., 2019, p. 61; Rosander et al., 2020). Both measurement approaches by no means lead to congruent results – not even in the analyses conducted here. In this study, only the influence of sociodemographic and organizational factors on self-labeling as bullied were examined. The relationship between the two approaches and the extent to which sensitivity to self-ascription to bullying and sexual discrimination varies by sociodemographic characteristics is the subject of Striebing’s contribution on gender aspects in self-reporting (in this collection).

The predictors of the study are shown in Table 7. For both non-scientific and scientific staff, gender was investigated. The gender of the respondents was differentiated into male and female. An alternative gender was only queried in the form “No answer/Other gender” and could therefore not be processed. This coding was necessary because, in addition to gender, other socio-demographic characteristics of the respondents were queried that would not have been possible while preserving the anonymity of the respondents when asking for another gender separately.

The other predictors were included either only for scientific or only for non-scientific employees. Data protection reasons were decisive for the division of the predictors. The variable nationality, for example, was not considered for non-scientific employees, as they have a lower proportion of foreigners and hence taking this category into account would have led to subcategories with very few cases, which would have made it possible to identify individual persons from the regression equations presented here.⁹

The predictors nationality, hierarchical position, and section were exclusively considered for scientific employees. As mentioned, the nationality of the respondents was differentiated into German, other EU countries, and Non-EU countries. For the position, respondents from scientific staff could choose between the

⁸There is some contradiction between the definition in the questionnaire and the coding done here. It is questionable to what extent it is valid that the respondents stated to have “occasionally” experienced a behavior defined as “repeated and persistent.” We do not evaluate respondents’ answers in terms of the extent to which self-attribution as “bullied” is valid compared to the scientific definition. The variable is considered to be an appropriate indicator of a repeated experience of social misconduct in the workplace that was sufficiently severe in nature that the respondent would classify it as bullying and, in particular, would perceive themselves as bullied.

⁹For the scientific employees, 207 of a total of 240 groups based on the regression predictors have a case number of 20 or more cases. The minimum group population is four. For non-scientific employees, 56 of the 60 possible groups have at least 20 cases and the minimum group population is 13.

Table 7. Descriptive Statistics of Outcome, and Predictor Variables in the Two Regression Models.

Variable Name	Category	Scientific Staff		Non-scientific Staff	
		N	Margin %	N	Margin %
Outcome					
Self-ascrption to occasional or more frequent bullying (yes/no)	No	3,011	92.0	2,637	88.0
	Yes	261	8.0	358	12.0
Predictors					
Age	15–29	-	-	265	8.0
	30–44	-	-	1,068	35.7
	60 and older	-	-	246	8.2
	45–59	-	-	1,416	47.3
Gender	Female	1,267	38.7	1,736	58.0
	Male	2,005	61.3	1,259	42.0
Nationality	Other EU country	664	20.3	-	-
	Non-EU country	669	20.4	-	-
	German	1,939	59.3	-	-
	Postdoc	965	29.5	-	-
Position of scientific staff	Other research associates employed	798	24.4	-	-
	Director, research group leader	368	11.2	-	-
	Doctoral candidate	1,141	34.9	-	-

(Continued)

Table 7. (Continued)

Variable Name	Category	Scientific Staff		Non-scientific Staff	
		N	Margin %	N	Margin %
Unit of non-scientific staff	Technology and IT	-	-	944	31.5
	Other services	-	-	910	30.4
	Administration	-	-	1,141	38.1
Section	Biology and Medicine	1,162	35.5	-	-
	Humanities and Social Sciences	518	15.8	-	-
	Chemistry, Physics and Technology	1,592	48.7	-	-
Valid		3,272	76.0	2,995	78.5
Missing		1,036	24.0	822	21.5
Total		4,308	100	3,817	100

answer options doctoral candidate, postdoc, other research associates employed, and director or research group leader. The scientific sections of the Max Planck Society are the BMS, CPTS, and HSS.

Age and the unit of the respondents were only included as predictors in the regression model for the non-scientific employees. The age was divided into the categories 15–29,¹⁰ 30–44, 45–59, and 60 years and older. The variable “unit of non-scientific staff” indicates whether a respondent is assigned to the Administration, Technology and IT, or Other Services area.

Methods

The questionnaire was reviewed in detail by a specially established task force of the Max Planck Society. The task force consisted of employee representatives, institute directors, and employees of the General Administration. This ensured that the questionnaire was formulated in a coherent and meaningful way for all employees of the Max Planck Society. The original English questionnaire was translated into German by a professional translation agency, pretested, and the German and English questionnaires were then proofread by the translation agency already involved.

Two binary logistic regression equations were set up for scientific employees and non-scientific employees. Using the respective regression equations, the *estimated marginal means* were calculated for groups of people of interest from a theoretical point of view. These estimated marginal means were compared using t-tests to examine the hypotheses formulated here. Furthermore, to test the formulated hypotheses, especially the *differences of differences* were examined. These tests which, for example, compare whether the gender gaps in the self-assessment as bullied differ statistically significantly between two sections, were either taken directly from the regression equations in Appendices 1 and 2 or calculated using the logistic regression parameters.¹¹ The conditional differences between the estimated marginal means and the differences between the regression parameters including their confidence intervals and *p* values were reported. The analyses were performed using SPSS. The syntax and output of the analyses can be viewed in the online appendix.¹²

¹⁰The age group starts at the age of 15 in order to include persons who pursue their dual vocational training at an institution of the Max Planck Society.

¹¹The following formula was used to manually calculate the hypothesis tests (Paternoster et al., 1998):

$$z = (\beta_1 - \beta_2) / \sqrt{((SE \beta_1)^2 + (SE \beta_2)^2)}.$$

The *p*-value was calculated using the following formula (Altman and Bland, 2011):

$$p = \exp(-0.717 * z - 0.416 * z^2).$$

Standard errors were calculated with the formula in Altman and Bland (2011):

$$SE = Estimate/z.$$

¹²The online appendix can be accessed at: https://github.com/clemensstriebling/diversity_and_discrimination_in_RPOs.

Results

For scientific employees of the Max Planck Society, the following binary logistic regression equation was established using the outcome and predictor variables presented:

$$P_{\text{Scientific employees}} (y = 1) = \frac{1}{1 + e^{-(\beta_0 + \beta_{\text{Female}} + \beta_{\text{EU}} + \beta_{\text{Non-EU}} + \beta_{\text{BMS}} + \beta_{\text{HSS}} + \beta_{\text{Postdocs}} + \beta_{\text{Other research associates}} + \beta_{\text{Directors and RGLs}} + \beta_{\text{Female*EU}} + \dots)}}$$

The equation is shortened due to space limitations. A full list of the predictors, the model effect tests, and their parameter estimates can be found in Appendix 1. The equation estimates the mean of researchers in the survey reporting to have been bullied at least occasionally at their workplace in the 12 months prior to the survey. These estimated marginal means, which are calculated and compared for different sociodemographic groups below, thus represent the mean values of the outcome for the respective characteristic values (e.g., female/male), controlled for the mean values of the other variables in the regression equation. The reference group for the regression is German male doctoral students at CPTS.

The regression equation set up for non-scientific employees is:

$$P_{\text{Non-scientific employees}} (y = 1) = \frac{1}{1 + e^{-(\beta_0 + \beta_{\text{Female}} + \beta_{15-29} + \beta_{30-44} + \beta_{60 \text{ and older}} + \beta_{\text{Technology\&IT}} + \beta_{\text{Other services}} + \beta_{\text{Female*25-29}} + \dots)}}$$

This equation is also shortened and reported in full including tests of model effects in Appendix 2. The reference group for the non-scientific employees is men from the Administration aged 45–59.

In the following, the differences in the estimated marginal means of the respective main groups of gender and nationality, of the subgroups of the interaction of gender with nationality, and of the subgroups of the interaction of gender and nationality with the context conditions of position and section are presented. Subsequently, the results of the group comparisons for the non-scientific employees are reported for the differences in the estimated marginal means of gender and age, the interaction of gender and age, and the interaction of gender and the context factor unit of non-scientific staff.

To test the formulated hypotheses, 65 t-tests were performed. Due to the large number of tests performed, there is a higher probability of a false positive error if the conventional significance level (usually $p = 0.05$ or $p = 0.1$) is not corrected (Benjamini and Hochberg, 1995). The Max Planck data set is considered an organization-specific full survey that is difficult to generalize, and the focus of the interpretation is therefore on the calculated effect sizes, that is, the magnitude of the differences in the estimated marginal means of the tested groups. Additionally, to assess the robustness of the results, the confidence intervals of the effects and their p values are also considered. To control the p values of the tests

performed for the problem of alpha error accumulation, the significance level can be corrected according to Bonferroni.¹³ The significance level of 0.05 corrected for the number of 65 tests is thus 0.0008. To allow the reader to apply an alternative alpha error correction, if necessary, the significance values presented in the following section are provided uncorrected.¹⁴ Only those effects that are below the corrected significance level are interpreted as “statistically significant.”

As described, however, the reader is advised to only take into account the significance rating as a secondary consideration and the relevance of the results should instead be assessed based on the effect sizes given. These are valid for the approximately 6,000 employees surveyed, regardless of their statistical significance.

Scientific Employees

a) H1: Effect of Gender

Fig. 3 shows the conditional differences in the estimated marginal means of the compared groups with a relationship to gender including their confidence intervals (95%). Tables 8–10, arranged section by section, contain the test statistics of these conditional differences. Furthermore, the tables contain the statistics of the tests that were carried out to check whether the estimated gender gaps are statistically significantly different between nationalities, positions, and sections.

The estimated marginal mean of male researchers is 7% and that of female researchers is 4 percentage points higher (95% CI: 0.009/0.061, SE = 0.013, $p = 0.008$).

b) H2: Interaction Effect of Gender and Nationality

The estimated marginal mean of German male researchers is 6%. In comparison, the estimated marginal mean of German female researchers is 3 percentage points higher. For male researchers from another EU country, the estimated marginal mean is 10%, which also corresponds to that of EU female researchers. The proportion of self-reported bullied male researchers from a non-EU country is estimated at 6%, while the estimated proportion of non-EU females is 8 percentage points higher.

It was hypothesized that the difference between male and female researchers (gender gap) in self-attribution as being bullied would be larger for researchers with an EU nationality than for German researchers and that the gender gap

¹³For the Bonferroni correction, the desired significance level is divided by the number of tests performed on the same data set. There are several different procedures for correcting for alpha error accumulation, of which the Bonferroni procedure is the most conservative with the least statistical power (Benjamini and Hochberg, 1995).

¹⁴For example, the number of tests to be included in the alpha error correction can also be discussed. Here, all 65 tests performed were included in the calculation of the Bonferroni correction. However, it is also conceivable to include only 38 tests directly relevant to the hypothesis tests, which would result in a significance level of 0.0013.

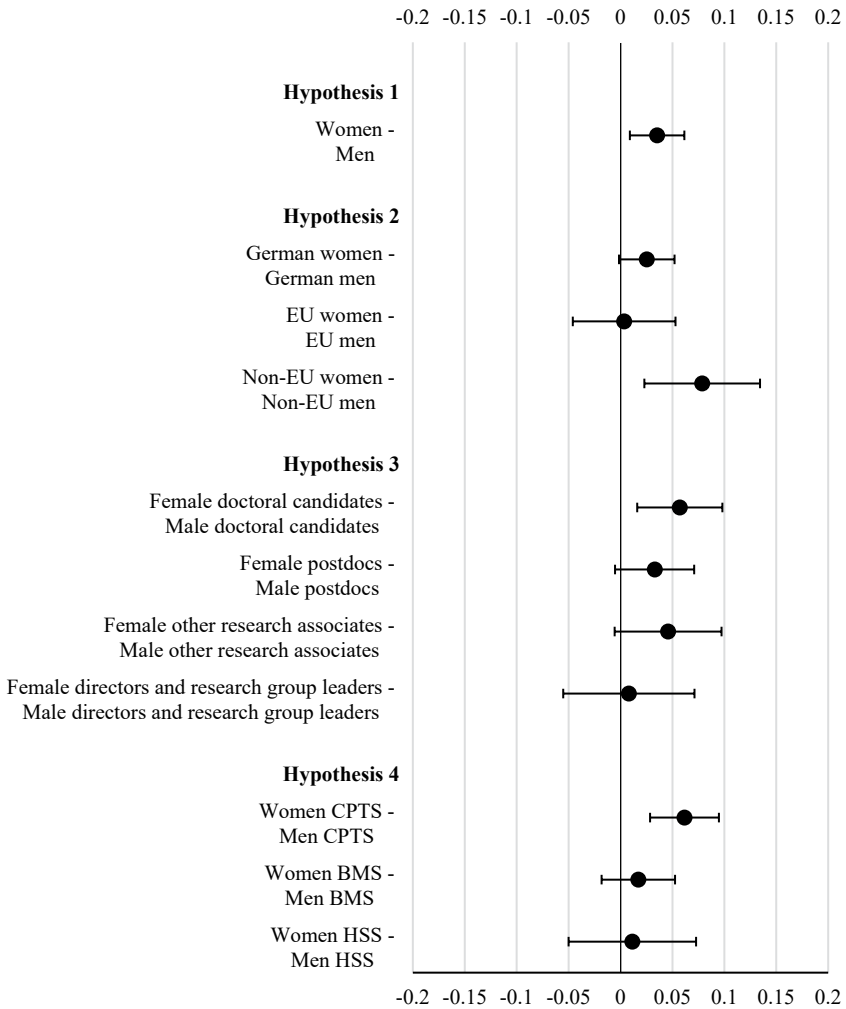


Fig. 3. Gender-related Conditional Differences Between the Estimated Marginal Means for the Hypothetical Relationships of Scientific Staff’s Self-ascription to Occasional or More Frequent Bullying (Yes/No). 95% Confidence Interval.

would be largest for non-EU researchers (German < EU < non-EU). This pattern cannot be supported based on the estimated marginal means. The gender gap of EU researchers is 2 percentage points lower than among German researchers ($\beta_{\text{Female*EU}}$). Between German and non-EU researchers, the difference is -5 percentage points ($\beta_{\text{Female*non-EU}}$). Gender gaps among EU and non-EU researchers differ by -8 percentage points ($\beta_{\text{Female*EU}} - \beta_{\text{Female*non-EU}}$).

Table 8. Test statistics for H2.

Tests for H2	Conditional Mean Differences	Differences in Logistic Regression Parameters	SE	Sig.	95% Wald Confidence Interval	
					Lower	Upper
Tests for Differences in Estimated Marginal Means						
German women – German men	0.025	/	0.014	0.064	-0.001	0.052
EU women – EU men	0.003	/	0.025	0.890	-0.046	0.053
Non-EU women – Non-EU men	0.079	/	0.028	0.006	0.023	0.135
Tests for Differences in Gender Gaps by Nationality (Tests based on Logistic Regression Parameters)						
Gender gap German – EU	0.022	-0.353	0.337	0.294	-1.012	0.307
Gender gap German – non-EU	-0.054	0.492	0.369	0.182	-0.231	1.125
Gender gap EU – non-EU	-0.076	-0.845	-0.499	0.090	-1.824	0.134

Table 9. Test statistics for H3.

Tests for H3	Conditional Mean Difference	Differences in Logistic Regression Parameters	SE	Sig.	95% Wald Confidence Interval	
					Lower	Upper
Tests for Differences in Estimated Marginal Means						
Female doctoral candidates – Male doctoral candidates	0.057	/	0.021	0.006	0.016	0.100
Female postdocs – Male postdocs	0.033	/	0.019	0.88	-0.005	0.071
Female other research associates – Male other research associates	0.046	/	0.026	0.081	-0.006	0.097
Female directors and research group leaders – Male directors and research group leaders	0.008	/	0.032	0.803	-0.055	0.071
Tests for Differences in Gender Gaps by Position (Tests based on Logistic Regression Parameters)						
Gender gap doctoral candidates – Postdocs	0.024	-0.169	0.341	0.619	-0.837	0.498
Gender gap postdocs – Other research associates	-0.013	0.115	0.500	0.830	-0.865	1.095
Gender gap other research associates – Directors or research group leaders	0.038	-0.353	-0.332	0.291	-1.004	0.298
Gender gap postdocs – Directors or research group leaders	0.025	-0.468	-0.350	0.182	-1.154	0.218

Table 10. Test Statistics for H4.

Tests for H4	Conditional Mean Difference	Differences in Logistic Regression Parameters	SE	Sig.	95% Wald Confidence Interval	
					Lower	Upper
Tests for Differences in Estimated Marginal Means						
Women CPTS – Men CPTS	0.062	/	0.017	0.000	0.028	0.095
Women BMS – Men BMS	0.017	/	0.018	0.342	-0.018	0.053
Women HSS – Men HSS	0.011	/	0.031	0.716	-0.050	0.073
Tests for Differences in Gender Gaps by Section (Tests based on Logistic Regression Parameters)						
Gender Gap CPTS – BMS	0.045	-0.768	0.304	0.011	-1.364	-0.173
Gender Gap CPTS – HSS	0.051	-0.880	0.360	0.014	-1.583	-0.178
Gender Gap BMS – HSS	0.006	-0.112	-0.470	0.823	-1.033	0.809

c) H3: Interaction Effect of Gender and Hierarchical Position

Among male doctoral candidates, an estimated 8% of the respondents indicated that they would describe themselves as bullied, while among females the proportion is 6 percentage points higher. Among male postdocs, the estimated marginal mean is 6% and among women, it is 3 percentage points higher. For other research associates, the estimated proportion of men bullied is 7% and is 5 percentage points higher for women. For male directors and research group leaders, the self-assessment of being bullied is 9%. The self-assessment of female directors and research group leaders differs by 1%.

It was hypothesized that the gender gap in self-labeling as bullied would decrease with increasing hierarchical level (PhDs > postdocs > other research associates > directors and research group leaders). This pattern can only be supported if the group of other research associates is not considered. The gender gaps at the level of doctoral candidates and postdocs differ by 2 percentage points ($\beta_{\text{Female*Postdocs}}$). The difference in gender gaps between postdocs and other research associates is -1 percentage point ($\beta_{\text{Female*Postdocs}} - \beta_{\text{Female*Other research associates}}$). Between other research associates and directors or research group leaders, the difference in the gender gap is 4 percentage points ($\beta_{\text{Female*Postdocs}}$). Since the hierarchical assignment of other research associates is complex and can have intersections with both postdocs and directors or research group leaders, the difference in gender gaps of postdocs and directors or research group leaders was also examined and was found to be 3 percentage points ($\beta_{\text{Female*Postdocs}}$).

d) H4: Interaction Effect of Gender and Section

Within the BMS, 8% of the men surveyed estimated themselves to be bullied. The conditional difference from the estimated marginal mean of female researchers is 2 percentage points. For the HSS, the estimated marginal mean among male researchers is 12%, from which the estimated marginal mean of females differs by 1 percentage point. For male researchers at CPTS, the estimated marginal mean of those bullied can be estimated at 4%. The estimated marginal mean of female researchers turns out to be 6 percentage points higher.

It was hypothesized that the gender gap would be most pronounced in CPTS in comparison to BMS and HSS (CPTS > BMS, CPTS > HSS, and HSS = BMS). This prediction can be considered true. There is a difference of 5 percentage points between the gender gaps of CPTS and BMS ($\beta_{\text{Female*BMS}}$). The CPTS and HSS difference are 5 percentage points ($\beta_{\text{Female*HSS}}$). The BMS and HSS difference in gender gaps is 1 percentage point ($\beta_{\text{Female*BMS}} - \beta_{\text{Female*HSS}}$).

e) H5: Effect of Nationality

Fig. 4 shows the results of the tests for the nationality-related groups with their confidence intervals (95%). The detailed test statistics are shown in Tables 11 and 12. These tables also contain the statistics of the tests to check whether the

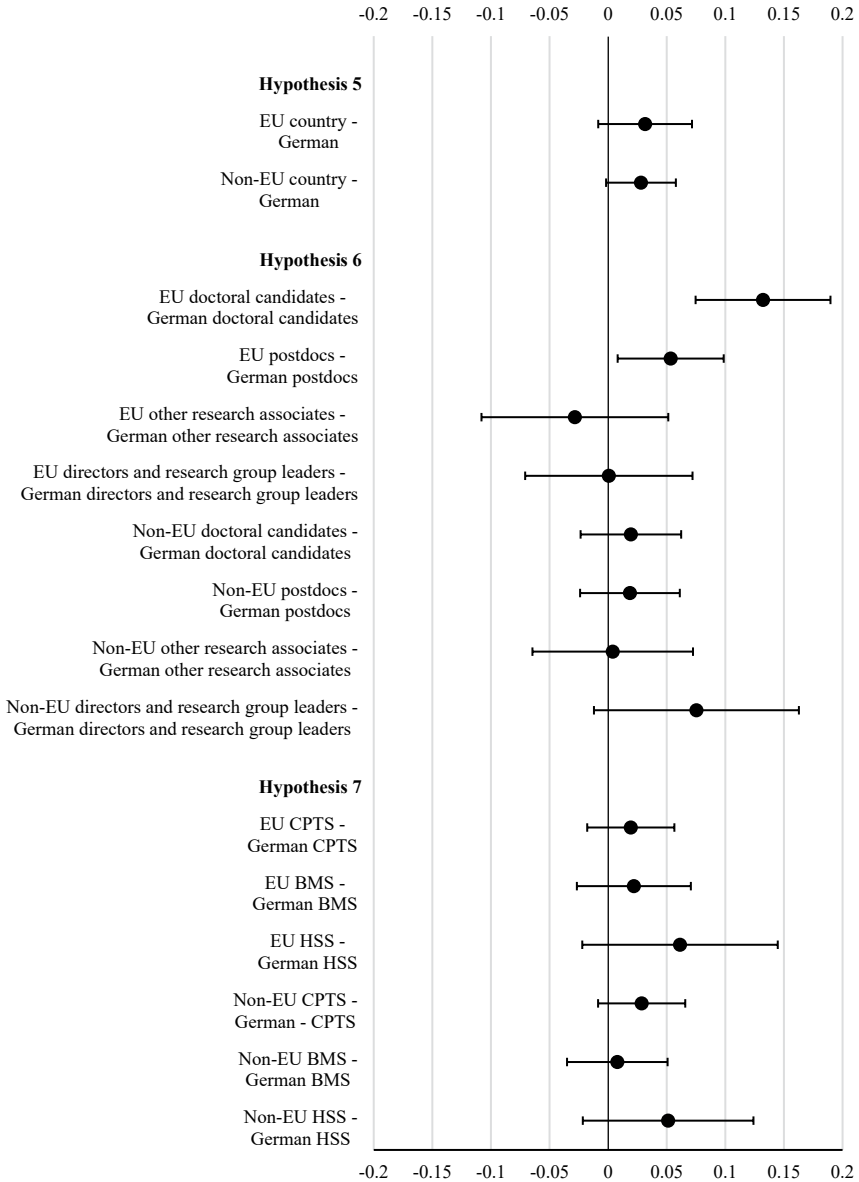


Fig. 4. Nationality-related Conditional Differences Between Estimated Marginal Means for the Hypothetical Relationships of Scientific Staff's Self-ascription to Occasional or More Frequent Bullying (Yes/No). 95% Confidence Interval.

Table 11. Test Statistics for H_6 .

Tests for H_6	Conditional Mean Difference	Differences in Logistic Regression Parameters	SE	Sig.	95% Wald Confidence Interval	
					Lower	Upper
Tests for Differences in Estimated Marginal Means						
EU doctoral candidates – German doctoral candidates	0.132	/	0.029	0.000	0.075	0.190
EU postdocs – German postdocs	0.053	/	0.023	0.021	0.008	0.099
EU other research associates – German other research associates	-0.028	/	0.041	0.485	-0.108	0.051
EU directors and research group leaders – German directors and research group leaders	0.001	/	0.063	0.987	-0.071	-0.072
Non-EU doctoral candidates – German doctoral candidates	0.019	/	0.022	0.376	-0.024	0.062
Non-EU postdocs – German postdocs	0.019	/	0.022	0.391	-0.024	0.061
Non-EU other research associates – German other research associates	0.004	/	0.035	0.911	-0.065	0.072
Non-EU directors and research group leaders – German directors and research group leaders	0.075	/	0.045	0.091	-0.012	0.163

Tests for Differences in Nationality Gaps by Position (Tests based on Logistic Regression Parameters)

<i>German – EU</i>						
Nationality gap doctoral candidates – postdocs	0.079	-0.574	0.383	0.134	-1.324	0.176
Nationality gap postdocs – other research associates	-0.081	1.097	0.773	0.156	-0.418	2.612
Nationality gap other research associates – directors or research group leaders	0.029	-0.388	-0.920	0.686	-2.192	1.416
Nationality gap postdocs – directors or research group leaders	0.052	-0.709	0.736	0.341	-0.735	2.153
<i>German – Non-EU</i>						
Nationality gap doctoral candidates – postdocs	0.000	0.009	0.455	0.983	-0.882	0.901
Nationality gap postdocs – other research associates	0.015	0.258	0.447	0.575	-0.617	1.133
Nationality Gap other research associates – directors or research group leaders	-0.071	-0.801	-0.731	0.277	-2.234	0.632
Nationality Gap postdocs – directors or other research group leaders	-0.056	-0.543	-0.708	0.452	-1.931	0.845

Table 12 Test Statistics for $H7$.

Tests for $H7$	Conditional Mean Difference	Differences in Logistic Regression Parameters	SE	Sig.	95% Wald Confidence Interval	
					Lower	Upper
Tests for Differences in Estimated Marginal Means						
EU CPTS – German CPTS	0.019	/	0.019	0.308	-0.018	0.057
EU BMS – German BMS	0.022	/	0.025	0.376	-0.027	0.071
EU HSS – German HSS	0.061	/	0.043	0.150	-0.022	0.145
Non-EU CPTS – German CPTS	0.029	/	0.019	0.132	-0.009	0.066
Non-EU BMS – German BMS	0.008	/	0.022	0.721	-0.035	0.051
Non-EU HSS – German HSS	0.051	/	0.037	0.168	-0.022	-0.124
Tests for Differences in Nationality Gaps by Section (Tests based on Logistic Regression Parameters)						
<i>German – EU</i>						
Nationality gap CPTS – BMS	-0.003	-0.069	0.345	0.842	-0.744	0.606
Nationality gap CPTS – HSS	-0.042	0.261	0.425	0.539	-0.572	1.094
Nationality gap BMS – HSS	-0.039	-0.330	-0.547	0.558	-1.402	0.742
<i>German – Non-EU</i>						
Nationality gap CPTS – BMS	0.021	-0.375	0.408	0.358	-1.175	0.424
Nationality gap CPTS – HSS	-0.022	0.042	0.445	0.924	-0.829	0.914
Nationality gap BMS – HSS	-0.043	-0.417	-0.603	0.500	-1.600	0.766

nationality gaps found are statistically significantly different between the hierarchical positions and the sections.

Among German researchers, an estimated 7% reported having been bullied occasionally, monthly, weekly, or daily at work in the 12 months prior to the survey. The value is 3 percentage points higher among researchers from other EU countries and also among researchers from non-EU countries.

f) H6: Interaction Effect of Nationality and Hierarchical Position

An estimated 6% of doctoral candidates with German nationality reported having experienced bullying. For EU doctoral candidates, this value is 13 percentage points higher and for non-EU doctoral candidates, it is 2 percentage points higher. German postdocs have an estimated self-labeling rate of 6%, while for EU postdocs the value is 5 percentage points higher and among non-EU postdocs, it is 2 percentage points higher. The estimated proportion of self-perceived bullied researchers among German other research associates is 10%. This value is 3 percentage points lower for EU other research associates and about the same for non-EU other research associates than for Germans. Directors and research group leaders with German nationality have an estimated probability of self-ascription as bullied of 7%. The value for scientific leaders from another EU country is just as high, whereas the value for non-EU scientific leaders is estimated to be 8 percentage points higher.

To describe the interaction of nationality and hierarchical position on self-labeling as bullied, two competing hypotheses were formulated. According to *H6a*, a decrease in the nationality gap between German and non-German (both EU and non-EU) researchers was predicted with an increase in hierarchical level (PhDs > postdocs > other research associates > directors and research group leaders). Alternatively, *H6b* predicted that an increase of the nationality gap between German and non-EU researchers with increasing hierarchy level was considered possible (German vs. non-EU: PhDs < postdocs < other research associates < directors and research group leaders). If the other research associates are not considered, the comparison of German and EU researchers suggests the validity of *H6a*, while the comparison of German and non-EU researchers suggests that *H6b* is valid.

The nationality gaps between German and EU researchers for doctoral candidates and postdocs differ by 8 percentage points ($\beta_{EU*Postdocs}$) and between postdocs and other research associates the difference in nationality gaps is -8 percentage points ($\beta_{EU*Postdocs} - \beta_{EU*Other\ research\ associates}$). For German and EU other research associates and directors or research group leaders, the difference in nationality gaps is 3 percentage points ($\beta_{EU*Other\ research\ associates} - \beta_{EU*directors\ and\ research\ group\ leaders}$). When comparing postdocs and directors or research group leaders, the difference in nationality gaps was found to be 5 percentage points ($\beta_{EU*Postdocs} - \beta_{EU*Directors\ and\ research\ group\ leaders}$).

The nationality gaps between German and non-EU researchers at the levels of doctoral candidates and postdocs do not show any difference ($\beta_{non-EU*Postdocs}$). When comparing postdocs and other research associates, the difference is 2

percentage points ($\beta_{\text{non-EU*Postdocs}} - \beta_{\text{non-EU*Other research associates}}$). The nationality gaps between German and non-EU researchers for other research associates and directors or research group leaders differ by -7 percentage points

($\beta_{\text{non-EU*Other research associates}} - \beta_{\text{non-EU*Directors and research group leaders}}$). When comparing postdocs and directors or research group leaders, the difference is -6 percentage points ($\beta_{\text{non-EU*Postdocs}} - \beta_{\text{non-EU*Directors and research group leaders}}$).

g) H7: Interaction Effect of Nationality and Section

In the CPTS, a proportion of self-labeled bullied people of 5% was calculated for German researchers. This proportion is 2 percentage points higher for EU researchers and 3 percentage points higher for non-EU researchers. In the BMS, an estimated 8% of German researchers categorized themselves as being bullied. For EU researchers, this value is 2 percentage points higher, while for non-EU researchers it is 1 percentage point higher. In the HSS, an estimated 9% of German researchers indicated that they would categorize themselves as bullied. For EU researchers, this proportion is 6 percentage points higher. For non-EU researchers, it is 5 percentage points higher.

It was hypothesized that no differences in nationality gaps would be found between the sections (BMS = CPTS = HSS). However, according to the results, it is only when looking at the estimated marginal means that this prediction cannot be supported. Based on the comparison between German and EU researchers, there was no difference in the nationality gaps of CPTS and BMS ($\beta_{\text{EU*BMS}}$), whereas between CPTS and HSS the nationality gaps differ by -4 percentage points ($\beta_{\text{EU*HSS}}$). There is a difference of -4 percentage points for BMS and HSS ($\beta_{\text{EU*BMS}} - \beta_{\text{EU*HSS}}$). When comparing German and non-EU researchers, a difference in nationality gaps of 2 percentage points was found between CPTS and BMS ($\beta_{\text{non-EU*BMS}}$), and between CPTS and HSS a difference of -2 percentage points ($\beta_{\text{non-EU*HSS}}$) was derived. Between BMS and HSS, the nationality gaps between German and non-EU researchers differ by -4 percentage points ($\beta_{\text{non-EU*BMS}} - \beta_{\text{non-EU*HSS}}$).

Non-scientific Employees

a) H8: Effect of Gender

Fig. 5 shows the conditional differences in the estimated marginal means of the groups calculated for the hypothesis tests of the non-scientific employees with their confidence intervals (95%). The detailed test statistics are reported in Tables 13–15. Table 14 also contains the statistics of the “difference of differences” analyses used to test whether the gender gaps between age groups were statistically significantly different.

Among non-scientific employees, an estimated 9% of men categorized themselves as bullied. For women, this figure is 3 percentage points higher (95% CI: $-0.003/0.066$, SE = 0.018, $p = 0.078$).

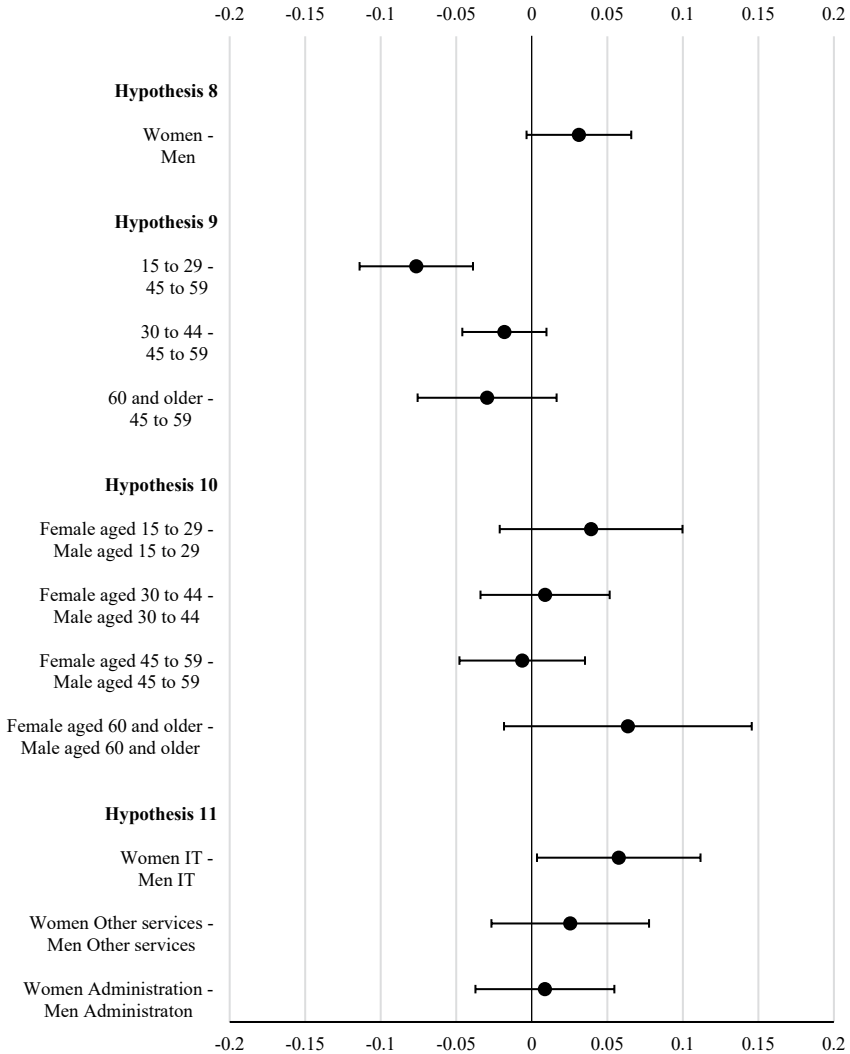


Fig. 5. Gender- and Age-related Conditional Differences Between Estimated Marginal Means for the Hypothetical Relationships of Non-scientific Staff’s Self-ascription to Occasional or More Frequent Bullying (Yes/No). 95% Confidence Interval.

b) H9: Effect of Age

In the reference age group 45–59 years, the proportion of those who categorize themselves as bullied is estimated at 14%. This proportion is 8 percentage points lower in the 15–29 age group, 2 percentage points lower in the 30–44 age group, and 3 percentage points lower in the 60 and older age group.

Table 13. Test statistics for *H9*.

Tests for <i>H9</i>	Conditional Mean Difference	SE	Sig.	95% Wald Confidence Interval	
				Lower	Upper
Tests for Differences in Estimated Marginal Means					
15–29 to 45–59	–0.076	0.019	0.000	–0.114	–0.040
30–44 to 45–59	–0.018	0.014	0.202	–0.046	0.010
60 and older – 45 to 59	–0.030	0.023	0.208	–0.076	0.016
15–29 to 30–44	0.058	0.019	0.003	0.020	0.097

It was hypothesized that the proportion of non-scientific employees who report being bullied increases with age (15–29 < 30–44 < 45–59 < 60 and older). To test the hypothesis, it was still necessary to examine the difference between the age groups 15–29 and 30–44. In the youngest age group, the percentage of staff who categorize themselves as bullied is 6%, which is 6 percentage points lower than in the 30–44 age group. Thus, the predicted pattern could only be supported by not considering the age group 60 and older.

c) H10: Interaction Effect of Gender and Age

Among men in the 15–29 age group, an estimated 5% describe themselves as bullied and the conditional difference in estimated marginal means compared to women in the same age group is 4 percentage points. For men in the 30–44 age group, the proportion of those who would categorize themselves as bullied was calculated to be 12%, while the value for women is 1 percentage point higher. In the 45–59 age group, the proportion of self-assessed bullied men is estimated to be 14% and the value for women is almost 1 percentage point lower. For men in the age group 60 and older, a value for self-categorization as bullied of 8% was calculated. For women in this age group, the value is 6 percentage points higher.

The gender gap in self-labeling as bullied was predicted to increase with age (15–29 < 30–44 < 45–59 < 60 and older) but this prediction was not supported by the data. The gender gap in the 30–44 age group is 3 percentage points lower than in the 15–29 age group ($\beta_{\text{Female}^*30-44} - \beta_{\text{Female}^*15-29}$), and in the 45–59 age group, the gender gap is nearly 2 percentage points smaller than in the 30–44 age group ($\beta_{\text{Female}^*30-44}$). In the age group 60 and older, the gender gap is 7 percentage points larger than in the group 45–59 ($\beta_{\text{Female}^*60 \text{ and older}} - \beta_{\text{Female}^*45-59}$).

d) H11: Interaction Effect of Gender and Section

Of the men in the Technology and IT unit, an estimated 7% categorize themselves as being bullied while for women in the same unit, the proportion is 6 percentage

Table 14 Test Statistics for *H10*.

Tests for <i>H10</i>	Conditional Mean Difference	Differences in Logistic Regression Parameters	Std. Error	Sig.	95% Wald Confidence Interval	
					Lower	Upper
Tests for Differences in Estimated Marginal Means						
Female aged 15–29 – Male aged 15 to 29	0.039	/	0.031	0.168	-0.021	0.100
Female aged 30–44 – Male aged 30–44	0.009	/	0.022	0.687	-0.034	0.052
Female aged 45 to 59 – Male aged 45–59	-0.006	/	0.021	0.765	-0.048	0.035
Female aged 60 and older – Male aged 60 and older	0.064	/	0.042	0.128	-0.018	0.146
Tests for Differences in Gender Gaps by Age (Tests based on Logistic Regression Parameters)						
Gender Gap 30–44 to 15–29	-0.030	-0.566	-0.619	0.367	-1.780	0.648
Gender Gap 45–59 to 30–44	-0.015	0.134	0.251	0.593	-0.358	0.627
Gender Gap 60 and older – 45–59	0.070	0.693	0.461	0.133	-0.211	1.597

Table 15. Test Statistics for *H11*.

Tests for <i>H11</i>	Conditional Mean Difference	SE	Sig.	95% Wald Confidence Interval	
				Lower	Upper
Tests for Differences in Estimated Marginal Means					
Women IT – Men IT	0.058	0.028	0.037	0.003	0.112
Women Other services – Men Other services	0.025	0.027	0.339	-0.027	0.078
Women Administration – Men Administration	0.009	0.023	0.711	-0.037	0.055

points. In the Other Services unit, the estimated proportion of self-ascribed bullied men is 11% and for women, the proportion is 3 percentage points higher. In the unit Administration, an estimated 10% of men categorize themselves as bullied. For women, it is nearly 1 percentage point higher. Thus, the prediction that men are more likely than women to have experiences of bullying in areas where they are in the minority cannot be supported.

Interpretation

The prevalence rates determined here for self-categorization as bullied are comparatively low and vary between 4 and 14% for the reference groups shown. Given these low prevalence rates, even small differences of a few percentage points in the estimated marginal means of the individual employee groups compared here mark relevant insights into the structural vulnerability of a group to bullying. In accordance with the nature of the study conducted as a full survey with validity for the Max Planck Society, the following interpretation is based on the differences in the estimated marginal means, that is, the effect sizes.

In summary, the following picture emerges (Table 16): Regarding the occurrence of the predicted effects, *H1*, *H4*, and *H8* can be accepted. With modifications or restrictions, *H2*, *H3*, *H6a*, *H6b*, *H9*, and *H11* might be accepted and *H7* and *H10* should be regarded as refuted. For none of the hypotheses do all the performed t-tests meet the strict Bonferroni-corrected significance threshold of 0.0008, especially none of the conducted “difference of difference” tests.

Accordingly, the validity of the hypothesis interpretations exclusively refers to the 6,267 individuals in the Max Planck cross-sectional sample. In the following, the interpretation focuses on the non-validated hypotheses. If individual significance tests meet the strict threshold for a hypothesis, this is stated explicitly.

H2 predicted for researchers that the nationality groups studied here have different gender role conceptions and that the potential for conflict between the norm prevailing in the German context and the gender role conceptions of non-EU researchers is potentially the greatest. The data partially support this

Table 16. Interpretation of the Hypotheses According to Effect Sizes.

Hypotheses	Factors on Self-ascription as bullied	Hypothesis	Interpretation	Condition of Confirmation
Scientific employees				
1	Gender	A higher proportion of female than male researchers categorize themselves as bullied	Supported	–
2	Gender* Nationality	The difference between female researchers and male researchers who categorize themselves as bullied is larger among researchers with EU nationality than among German researchers and largest among non-EU researchers	Conditionally supported	If only the gender gap of German and non-EU researchers is considered
3	Gender* Position	The difference between female researchers and male researchers who categorize themselves as bullied decreases with increasing hierarchical levels	Conditionally supported	If other research associates are excluded
4	Gender* Section	The difference between female and male researchers who classify themselves as bullied is most pronounced in the CPTS when comparing the sections of the Max Planck Society	Supported	–
5	Nationality	A higher proportion of non-EU than German and EU researchers categorize themselves as bullied	Not supported	
6a	Nationality* Position	The difference between German researchers and EU as well as non-EU researchers who categorize themselves as bullied decreases with increasing hierarchy level	Conditionally supported	If only the gap between German and EU researchers is considered.

(Continued)

Table 16. (Continued)

Hypotheses	Factors on Self-ascription as bullied	Hypothesis	Interpretation	Condition of Confirmation
6b	Nationality* Position	The difference between German, EU researchers, and non-EU researchers who categorize themselves as bullied increases with increasing hierarchical levels	Conditionally supported	If only the gap between early career researchers (doctoral candidates and postdocs) and directors and research group leaders is considered
7	Nationality* Section	There are differences between the sections of the Max Planck Society to the degree to which EU and non-EU researchers classify themselves as bullied in contrast to German researchers	Supported	–
Non-scientific employees				
8	Gender	A higher proportion of female than male non-scientific employees categorize themselves as bullied	supported	–
9	Age	The proportion of non-scientific employees who categorize themselves as bullied increases with age	Conditionally supported	If employees 60 years and older are excluded
10	Gender* Age	The difference between female and male non-scientific employees who categorize themselves as bullied increases with age group	Not supported	–
11	Gender* Section	In the Technology and IT unit, a gender gap to the advantage of men can be found. In the administration and other services units, a gender gap to the advantage of women can be found	Conditionally supported	If only IT is considered

hypothesis with regards to the role conception of “being female.” While the gender gap in self-categorization as being bullied is even lower for EU researchers than for Germans, it was correctly predicted to be largest for non-EU researchers. Regarding the corrected significance values of the conducted hypothesis test, the gender gap among non-EU researchers was found to be robust.

In *H3*, for researchers, it was assumed that the gender gap in bullying would decrease with an increase in hierarchical level. This hypothesis is supported by the data, but only insofar as other research associates are not considered. The gender gap is lower for postdocs than for doctoral candidates and lower for directors and research group leaders than for postdocs. The bullying self-categorization scores for women and men among other research associates are between doctoral candidates and postdocs.

H5 predicted that non-EU researchers would categorize themselves more often as bullied and that the differences in response behavior between German and EU researchers would be negligible. The results of the estimation performed partially support this hypothesis. A higher probability than German researchers of categorizing themselves as bullied was found for both EU and non-EU researchers.

To answer the question of how nationality group and hierarchical position interact, two possible hypotheses were formulated. *H6a* claimed that early career researchers are most vulnerable to bullying, whereas *H6b* formulated the opposite expectation, namely that senior researchers – and in particular non-EU researchers due to a more pronounced cultural distance on average – regard themselves as being bullied.

Regarding EU researchers, the data supported *H6a* if other research associates are not considered. Doctoral candidates and postdocs from other EU countries more frequently categorize themselves as bullied than do Germans. However, other research associates from EU countries categorize themselves as bullied even less frequently than Germans. At the level of directors and research group leaders, no difference between German and EU researchers is discernible and only the conditional differences found among the doctoral candidates are statistically robust with respect to the corrected significance level. For non-EU researchers, the data rather support *H6b*. At all hierarchical levels, non-EU researchers are somehow more likely to categorize themselves as bullied than Germans, but at the level of doctoral candidates, postdocs, and other research associates, there are only small and not robust conditional differences in the estimated marginal means. At the level of directors and research group leaders, non-EU researchers showed a considerably increased probability of being categorized as bullied.

In *H7*, the prediction was made for researchers that differences in the size of the nationality gaps regarding the comparison between German and EU and German and non-EU in the individual sections of the Max Planck Society would be detected. The results support this explorative hypothesis, at least for the sample analyzed here. In all three scientific sections of the Max Planck Society, foreign researchers categorized themselves more often as being bullied than their German counterparts. However, the difference is particularly apparent in the HSS. EU researchers are more likely to report having experienced bullying in HSS than in

CPTS and BMS. The same holds for non-EU researchers, with a lower difference in nationality gaps between CPTS and HSS.

For non-scientific personnel, the influence of age on the likelihood of categorizing oneself as bullied was examined. *H9* predicted that as age increases, more individuals will classify themselves as experiencing bullying and the results partially support this hypothesis. In the 15–29 age group, the proportion of employees who reported experiencing bullying was estimated to be lower than in the 45–59 age group. Comparable in its direction, but less pronounced, is the conditional difference between the age groups 30–44 and 45–59. Deviating from the formulated hypothesis, it was found that in the age group 60 years and older there is a lower bullying probability compared to the age group 45–59 years. Only the age gap between the groups 15–29 and 45–59 is robust with regards to the corrected significance level.

H10 assumed that women suffer more from age discrimination among non-scientific personnel than men, which is expressed in a higher bullying probability with increasing age. In this instance, the data provided differentiated results. In the middle age groups (30–44 and 45–59), only a small gender gap is evident, and the data here tend to support the null hypothesis. However, in the youngest and oldest age groups, the gender gap for the sample is more pronounced, but still not robust. The results suggest that young and older women in particular experience age-related discriminatory bullying.

With reference to the social identity theory, *H11* predicted that in the individual units of non-scientific personnel such as in Technology and IT, women classify themselves more frequently as bullied than men, whereas in the Administration and Other Service units, men would more frequently self-identify as being bullied. The hypotheses are partially supported as the conditional differences estimated for the sample suggest that women categorize themselves as bullied more frequently in all sections. This gender gap is particularly pronounced in Technology and IT.

Conclusion

This study aimed to examine the relevance of gender, age, and nationality for the individual bullying vulnerability of scientific and non-scientific employees in the academic field, taking the Max Planck Society as an example. Based on the state of research, it was assumed that individual demographic characteristics do not lead to experiences of discriminatory bullying across the board (Salin, 2021). This study sought to unpack the contextual conditions and intersectionality in which gender, age, and nationality influence the likelihood of self-categorization as affected by workplace bullying. The contextual factors considered for researchers were hierarchical position and their discipline (or scientific section in the Max Planck Society). In addition, the interaction of gender and nationality was examined. For non-scientific employees, the respective work unit was considered as a context factor and the interaction of gender and age was analyzed. The hypotheses underlying the study were mainly derived from the social role, social identity, and cultural distance theory as well as from role congruity and relative deprivation theory.

Theoretical Contributions

The results of the research conducted here support the hypothesis that women with scientific or non-scientific jobs in research organizations state bullying experiences more often than men (Keashly, 2021). However, it remains an open question whether this perceived gender gap is the result of differences in hierarchical gradients, conflicts in stereotypical role expectations or group identities, or the method of measurement used (Salin and Hoel, 2013). Similarly, conclusions about the main effects of age on non-scientific staff remain unclear as these may be a result of longer tenure, more frequent leadership responsibilities, or even a stronger claim to be treated with the respect due to age.

Regarding gender, the results support the social identity theory in particular. In organizational contexts in which women make up the minority of employees, they categorize themselves as bullied more often than their male colleagues. For researchers, this could be shown by comparing the sections of the Max Planck Society, and for non-scientific personnel by comparing the respective units. However, for men the reverse is not true: in the non-scientific units, where men are in the minority, women nevertheless more frequently state that they have been bullied. This result contradicts previous research findings (Eriksen and Einarsen, 2004). Within the framework of the current state of research, this imbalance could presumably be explained by the fact that women experience bullying from both genders, while men are more likely to experience bullying from other men (Gardner et al., 2020). A competing explanation is that the study conducted here differs from Eriksen and Einarsen's (2004) study which examined the nursing profession in terms of the gendered organizational setting. According to this view, research organizations are masculine, and women are in a minority even when they are the majority in a field of work (Hearn, 2020).

The results of this study contradict the role congruity theory according to which women experience more bullying than men as they advance in their (scientific) careers. The gender gap in the incidence of bullying is found exclusively at lower hierarchical levels and most prominently among doctoral candidates. One possible interpretation of this result is that female researchers might encounter a male-dominated culture in their institutes in which they may experience social role conflicts more frequently than their male colleagues (see also Striebing on work climate in this collection). Concrete, anecdotal examples of this elusive masculine culture are provided by the studies of Gewinner and of Pantelmann and Wälty in this collection.

Evidence for the social role theory can presumably above all be derived from the interaction of age group and gender. Accordingly, the assumption that gender roles in organizations lead to tangible inequalities in income or hierarchy with increasing age is supported by the fact that the age group 60 years and older shows a clear gender gap in bullying, whereas the age groups 30–44 years and 45–59 years do not. The fact that a gender gap in bullying was also found in the youngest age group suggests a biographical approach for future studies of bullying and gender discrimination in academia. Accordingly, it should be investigated how the distribution of the individual bullying items, for example, of the Negative

Acts Questionnaire or the Sexual Experience Questionnaire, varies between the individual age groups and to what extent young women experience different forms of bullying and discrimination than older women.

Concerning the general influence of nationality, the cultural distance theory is not supported by the data. According to this theory, a greater cultural distance would have led to a higher probability of self-categorization as bullied (Bergbom et al., 2015). However, no differences could be found here between affected persons from European and non-European countries. It can be speculated that different motivations and expectations between EU and non-EU researchers led to a convergence of the results: it is conceivable that non-EU researchers might generally be more tolerant of behavior at the workplace that appears inappropriate according to European norms since they already operate in a cultural context that they regard as foreign. In contrast, EU researchers might be more easily disappointed in the sense of the relative deprivation theory since they do not expect to be treated as “foreigners” within the European cultural area. Alternatively, it can be speculated that researchers from abroad are united in a sense of social uprootedness, regardless of the factual physical and cultural distance between Germany and their country of origin.

Similarly, EU and non-EU researchers alike were found to have an increased vulnerability to self-categorization as being bullied in the HSS. In the social sciences and humanities section, language and institutions defined by language (such as the legal system) play a prominent role, whereas scientific standardization in the form of formulas and quantitative methodology is more specific to CPTS and BMS. An obvious conjecture is that this salient role of language and cultural contextuality more frequently leads to experiences of exclusion among EU and non-EU researchers alike, and thus to a greater vulnerability to bullying.

The cultural distance theory is supported by the interaction of gender and nationality: female researchers from a non-EU country state bullying experiences considerably more often than their male colleagues from a non-EU country. However, the results concerning nationality and hierarchy are differentiated. Among EU researchers, especially doctoral candidates and postdocs show a higher tendency than Germans to categorize themselves as bullied, which again could be explained within the framework of the relative deprivation theory as a disappointment rather than an incomprehensible unequal treatment on the part of EU researchers. In the case of non-EU researchers, on the other hand, the role congruency theory seems more plausible, according to which leaders from a non-EU country have to struggle more with recognition problems and early career researchers have lower expectations of their social integration in the workplace.

Practical Implications

From a management perspective, the study conducted has relevant implications for the development of target group-oriented prevention programs against bullying or programs to promote professional behavior in the workplace. In principle, it should be noted that anyone can be affected by bullying. However, organizational resources can be used more efficiently and effectively if they are applied

according to need. In the scientific field of the Max Planck Society, the need for anti-bullying measures in research organizations is greatest among female and male non-EU doctoral candidates in the humanities and social sciences (calculated based on the parameter estimates in the Appendix) as every fourth person in this group describes themselves as having been bullied.¹⁵ In contrast, among male German or non-EU doctoral candidates and postdocs in chemistry, physics, and technology the demand for support measures is lowest.¹⁶ Among non-scientific employees, the prevalence of bullying experiences is generally higher among female employees, but peaks with men in Other services.¹⁷ Men between the ages of 15 and 29 in the field of Technology and IT are the least likely to report having been bullied.¹⁸

The exemplary presentation of the minimum and maximum values of the model estimation illustrates that the target groups of anti-bullying measures can easily be over-simplified as neither are women more affected by bullying than men nor are foreigners more affected than Germans. The study also points to the special role of contextual conditions in the workplace and suggests that a sociodemographic group is more vulnerable to bullying when it is in a minority position in the workplace and when the conditions in the workplace, which are shaped by the majority, are exclusionary in their character.

Furthermore, from a practical perspective, the study can be used to legitimize awareness-raising measures through training, workshops, or online courses. The results of Kmec et al. (in this collection) indicate that there sometimes is a variance not only in awareness but even in the ability of managers to recognize misconduct in the workplace. The present study provides complementary evidence of the “uneven distribution” of managers’ own experiences with social misconduct in the workplace. This finding, which is not new, is once again supported here with concrete data. Depending on the contextual conditions, there are “dominant” socio-demographic groups that experience their workplace as a “safe space” without perhaps ever questioning this, and there are other groups that are dependent on the empathy of this dominant group due to the hierarchical relationships at the workplace.

Limitations

The data set used, and the study design enabled unprecedented quantitative analyses of the interactions of demographic characteristics with contextual factors of the (academic) workplace – but also have relevant limitations. The results obtained in the binary logistic regressions conducted for researchers

¹⁵ $P_{\text{Female}} = 0.26$, 95% CI: 0.15/0.41, SE = 0.067; $P_{\text{Male}} = 0.28$, 95% CI: 0.16/0.45, SE = 0.076.

¹⁶ $P_{\text{German PhDs}} = 0.03$, 95% CI: 0.02/0.04, SE = 0.007; $P_{\text{non-EU PhDs}} = 0.03$, 95% CI: 0.01/0.07, SE = 0.013; $P_{\text{German Postdocs}} = 0.03$, 95% CI: 0.01/0.05, SE = 0.008; $P_{\text{non-EU Postdocs}} = 0.03$, 95% CI: 0.01/0.06, SE = 0.012.

¹⁷ $P = 0.17$, 95% CI: 0.12/0.24, SE = 0.030.

¹⁸ $P = 0.04$, 95% CI: 0.02/.09, SE = 0.017.

and non-scientific staff were for the most part not robust according to conventional standards. The significance values of the t-tests performed were – in most cases – higher than the significance threshold corrected according to Bonferroni and the confidence intervals of the conditional differences in the estimated marginal means also included the null hypothesis in most cases. Thus, the results can only be applied with great caution to research organizations that are considered comparable to the Max Planck Society. In this context, as has been shown, the Max Planck Society represents a very specific case within Germany, if not worldwide, due to its pure research orientation in combination with strong excellence and hierarchy orientation. The data set used here is treated as a full survey, which means that it provides definitive data for the case of the Max Planck Society in terms of the specific time of the survey and the specific response rate.

Another limitation lies in the exclusive measurement of bullying based on the self-attribution of those affected. To be able to consider more complex constellations of the predictors in detail, a more limited validity of the outcome was accepted. It was presented that the respective operationalizations of bullying have a substantial impact on the identified associations with demographic characteristics (Salin and Hoel, 2013). There is still a research gap concerning whether women tend to more frequently ascribe to self-attributions of bullying because they are more sensitive than men, it is more acceptable for them to be vulnerable, or whether a structural power imbalance is expressed here since men hold leadership positions more often than women.

Research Opportunities

This work has opened new psychological and sociological research perspectives that are sensitive to the academic contextual conditions within which gendered, ethnicized, and age-specific interactions take place. Particularly exciting seem to be the puzzles that have been raised regarding the interaction of gender and nationality, and nationality and hierarchy: Why do women researchers with non-EU nationality seem to feel significantly less comfortable in their German research workplace than non-EU men? Why does the likelihood of bullying decrease for researchers from other EU countries compared to their German colleagues as they move up the hierarchy, while it increases for researchers from non-EU countries in leading positions?

Finally, this study points to the explanatory potential of relative deprivation theory to better understand bullying conflicts in general and those with discriminatory character in particular. In life and work, we draw self-esteem from a wide variety of aspects of our identity. As we age, we sometimes expect more respect from those around us, which we also do as we gain leadership responsibility, as we gain work experience, and possibly because of our gender. In organizations, such expectations can subtly clash, for example, in disputes between older and more experienced non-scientific employees and early career researchers. Such status conflicts can form structural starting points for bullying conflicts.

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Appendix A

1. Test of Model Effects and Parameter Estimates of Regression for Scientific Staff

Table A1. Test of Model Effects for Non-scientific Staff’s Self-ascription to Occasional or More Frequent Bullying (Yes/No).

Source	Type III		
	Wald Chi-square	df	Sig.
(Intercept)	599.187	1	0.000
Gender	7.399	1	0.007
Nationality	5.419	2	0.067
Section	13.413	2	0.001
Position	2.608	3	0.456
Gender * Nationality	4.426	2	0.109
Gender * Position	1.372	3	0.712
Nationality * Position	13.452	6	0.036
Gender * Section	8.614	2	0.013
Nationality * Section	1.585	4	0.811

Table A2. Parameter Estimates With Robust Estimators for Scientific Staff's Self-ascription to Occasional or More Frequent Bullying (Yes/No).

Parameter	B	SE	95% Wald Confidence Interval		Hypothesis Test		
			Lower	Upper	Wald Chi-square	df	Sig.
Intercept	-3.619	0.2733	-4.155	-3.084	175.397	1	0.000
Gender (Female)	1.127	0.3334	0.474	1.781	11.434	1	0.001
Gender (Male)	Reference						
Nationality (EU)	1.405	0.3563	0.706	2.103	15.544	1	0.000
Nationality (Non-EU)	0.158	0.4606	-0.745	1.060	0.117	1	0.732
Nationality (German)	Reference						
Section (BMS)	0.828	0.2585	0.321	1.334	10.250	1	0.001
Section (HSS)	1.019	0.3054	0.420	1.617	11.126	1	0.001
Section (CPTS)	Reference						
Position (Postdocs)	-0.006	0.3247	-0.642	0.631	0.000	1	0.986
Position (Other research associates)	0.508	0.2942	-0.069	1.084	2.977	1	0.084
Position (Directors and research group leaders)	0.328	0.3926	-0.442	1.097	0.697	1	0.404
Position (Doctoral candidate)	Reference						
Gender (Female) * Nationality (EU)	-0.353	0.3365	-1.012	0.307	1.100	1	0.294
Gender (Female) * Nationality (Non-EU)	0.492	0.3690	-0.231	1.215	1.778	1	0.182

Gender (Female) * Position (Postdocs)	-0.169	0.3405	-0.837	0.498	0.247	1	0.619
Gender (Female) * Position (Other research associates)	-0.054	0.3661	-0.772	0.664	0.022	1	0.883
Gender (Female) * Position (Directors and research group leaders)	-0.522	0.4648	-1.433	0.389	1.262	1	0.261
Nationality (EU) * Position (Postdocs)	-0.574	0.3828	-1.324	0.176	2.247	1	0.134
Nationality (EU) * Position (Other research associates)	-1.671	0.6716	-2.987	-0.354	6.188	1	0.013
Nationality (EU) * Position (Directors and research group leaders)	-1.283	0.6292	-2.516	-0.049	4.156	1	0.041
Nationality (Non-EU) * Position (Postdocs)	0.009	0.4546	-0.882	0.901	0.000	1	0.983
Nationality (Non-EU) * Position (Other research associates)	-0.249	0.4898	-1.209	0.711	0.258	1	0.611
Nationality (Non-EU) * Position (Directors and research group leaders)	0.552	0.5429	-0.512	1.616	1.033	1	0.309
Gender (Female) * Section (BMS)	-0.768	0.3037	-1.364	-0.173	6.402	1	0.011
Gender (Female) * Section (HSS)	-0.880	0.3585	-1.583	-0.178	6.030	1	0.014
Nationality (EU) * Section (BMS)	-0.069	0.3445	-0.744	0.606	0.040	1	0.842
Nationality (EU) * Section (HSS)	0.261	0.4249	-0.572	1.094	0.377	1	0.539
Nationality (Non-EU) * Section (BMS)	-0.375	0.4080	-1.175	0.424	0.846	1	0.358
Nationality (Non-EU) * Section (HSS)	0.042	0.4446	-0.829	0.914	0.009	1	0.924
(Scale)	1						

2. Test of Model Effects and Parameter Estimates of Regression for Non-Scientific Staff

Table A3. Test of Model Effects for Non-scientific Staff's Self-ascription to Occasional or More Frequent Bullying (Yes/No).

Source	Type III		
	Wald Chi-Square	df	Sig.
(Intercept)	492.691	1	0.000
Age	10.536	3	0.015
Gender	2.930	1	0.087
Unit	2.856	2	0.240
Age * Gender	3.453	3	0.327
Gender * Unit	2.947	2	0.229

Table A4. Parameter Estimates With Robust Estimators for Non-scientific Staff's Self-ascription to Occasional or More Frequent Bullying (Yes/No).

Parameter	B	SE	95% Wald Confidence Interval		Hypothesis Test		
			Lower	Upper	Wald Chi-Square	df	Sig.
Intercept	-1.725	0.2075	-2.131	-1.318	69.118	1	0.000
Age (15-29)	-1.221	0.4759	-2.153	-0.288	6.580	1	0.010
Age (30-44)	-0.226	0.1950	-0.609	0.156	1.346	1	0.246
Age (60 and older)	-0.617	0.3692	-1.340	0.107	2.790	1	0.095
Age (45-59)	Reference						
Gender (Female)	-0.286	0.2436	-0.763	0.192	1.376	1	0.241
Gender (Male)	Reference						
Unit (Technology & IT)	-0.320	0.2242	-0.759	0.119	2.038	1	0.153
Unit (Other Services)	0.141	0.2688	-0.386	0.668	0.274	1	0.600
Unit (Administration)	Reference						
Age (15-29) * Gender (Female)	0.700	0.5663	-0.410	1.810	1.528	1	0.216
Age (30-44) * Gender (Female)	0.134	0.2511	-0.358	0.627	0.286	1	0.593
Age (60 and older) * Gender (Female)	0.693	0.4611	-0.211	1.597	2.258	1	0.133
Gender (Female) * Unit (Technology & IT)	0.557	0.3316	-0.093	1.207	2.825	1	0.093
Gender (Female) * Unit (Other services)	0.143	0.3095	-0.464	0.749	0.212	1	0.645
(Scale)	1						

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Chapter 4

Exploring Gender Aspects of Self-Reported Bullying and Sexual Discrimination

Clemens Striebing

Abstract

Purpose: Previous research identified a measurement gap in the individual assessment of social misconduct in the workplace related to gender. This gap implies that women respond to comparable self-reported acts of bullying or sexual discrimination slightly more often than men with the self-labeling as “bullied” or “sexually discriminated and/or harassed.” This study tests this hypothesis for women and men in the scientific workplace and explores patterns of gender-related differences in self-reporting behavior.

Basic design: The hypotheses on the connection between gender and the threshold for self-labeling as having been bullied or sexually discriminated against were tested based on a sample from a large German research organization. The sample includes 5,831 responses on bullying and 6,987 on sexual discrimination (coverage of 24.5 resp. 29.4 percentage of all employees). Due to a large number of cases and the associated high statistical power, this sample for the first time allows a detailed analysis of the “gender-related measurement gap.” The research questions formulated in this study were addressed using two hierarchical regression models to predict the mean values of persons who self-labeled as having been bullied or sexually discriminated against. The status of the respondents as scientific or non-scientific employees was included as a control variable.

Results: According to a self-labeling approach, women reported both bullying and sexual discrimination more frequently. This difference between women and men disappeared for sexual discrimination when, in addition to the gender of a person, self-reported behavioral items were considered

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in the prediction of self-labeling. For bullying, the difference between the two genders remained even in this extended prediction. No statistically significant relationship was found between the frequency of self-reported items and the effect size of their interaction with gender for either bullying or sexual discrimination. When comparing bullying and sexual discrimination, it should be emphasized that, on average, women report experiencing a larger number of different behavioral items than men.

Interpretation and relevance: The results of the study support the current state of research. However, they also show how volatile the measurement instruments for bullying and sexual discrimination are. For example, the gender-related measurement gap is considerably influenced by single items in the Negative Acts Questionnaire and Sexual Experience Questionnaire. The results suggest that women are generally more likely than men to report having experienced bullying and sexual discrimination. While an unexplained “gender gap” in the understanding of bullying was found for bullying, this was not the case for sexual discrimination.

Keywords: Negative Acts Questionnaire (NAQ); Sexual Experiences Questionnaire (SEQ); measurement bias; validity; gaslighting; victim blaming; academia

According to the Current State of Research, ...

... the measurement of the prevalence of bullying and sexual discrimination among women and men is considerably influenced by the specific measurement instruments. Comparisons of self-labeling and behavioral inventory measures widely used in surveys indicate that men have a slightly higher tolerance for workplace misconduct and apply a stricter definition when assessing whether they would consider themselves to have been bullied or sexually discriminated against. This measurement gap and its implications lie at the focus of this study.

Current research leaves open the question of whether the measurement gap is in fact merely the result of the different nature of various socio-psychological measurement instruments or whether it is founded on manifest differences between men and women. This question is relevant because in everyday work in organizations, an organizational myth of women as “sensitive souls” is perpetuated. According to this myth based on stereotypes, women are constructed as sensitive individuals who react inappropriately strongly to even mild experiences of workplace misconduct (Hinze, 2004). This organizational myth probably influences the willingness of women affected by workplace misconduct to report it, and also how the management in an organization responds to cases of conflict among employees, that is, whether known cases of bullying or sexual discrimination are dealt with promptly and effectively. In this context, conscious or unconscious victim blaming is a strategy to deny one’s own responsibility in a conflict situation or, from the management’s perspective, to justify non-intervention (Konovsky and Jaster, 1989).

Furthermore, in academia, from whence the sample examined here derives, there is a widespread tendency to refer to an affected person's supposed weaknesses and thus to individualize what may be a structural problem (Burkinshaw and White, 2017; Kelan, 2020). Symptoms include the slogan prominent in the academic gender equality community, "Fix the system, not the women" (World Economic Forum, 2020; Morrissey and Schmidt, 2008; Clayton, 2011). The slogan expresses the sentiment that the low level of representation of women in scientific leadership positions, and especially in STEM fields, cannot be solved by measures aimed at changing the behavior of female scientists, but only by measures that improve the integrative capacity of research organizations with respect to female professionals. In identity studies, "victim blaming" is especially encountered in a context where members of a majority group defend themselves against claims or accusations made by members of a marginalized group by attempting to devalue the credibility of this group. Another example is the increase in the number of scholarly publications on "academic gaslighting." The term gaslighting refers to the manipulation of a person B by one or more person(s) A, whereby A portrays B's beliefs, opinions, or assessments regarding perceived social misconduct as exaggerated, false, or completely baseless, which results in B not being able to actively defend him- or herself against the misconduct (Rodrigues et al., 2021; Abramson, 2014; Christensen and Evans-Murray, 2014; Grant, 2021).

This study examines the current state of research on women and men's threshold to understanding themselves as having been bullied or sexually discriminated against in the research workplace. For this purpose, the largest survey sample on bullying and sexual discrimination in a single research organization in the world to date was used. The sample, which originates from the Max Planck Society in Germany, enables a detailed analysis of gender bias in measuring instruments for bullying and sexual discrimination widely used in psychology and occupational science due to its high number of cases and the associated high statistical power. Hierarchical linear regressions were used to predict the mean values of persons who self-labeled as having been bullied or sexually discriminated against and thus answer whether:

- there are differences between women and men in self-labeling as having been bullied or having experienced sexual discrimination and/or harassment;
- a gender gap in self-labeling persists even when men and women report the same behavioral items¹;
- women and men respond differently to the specific behavioral items regarding self-labeling; and
- the gender-specific interaction effects of the behavioral items are related to the frequency and severity of the items.

The results show whether and how the perception threshold for social misconduct varies according to the male or female gender of scientific and non-scientific

¹For example, withholding information, being insulted, being shouted at; as measured by the Negative Acts Questionnaire-revised and the Sexual Experience Questionnaire-DoD.

employees. Thus, the article undertakes an empirically-based assessment of the different conceptions of workplace misconduct between men and women.

Literature Review

In the following, the state of research on gender differences in workplace bullying and sexual discrimination is presented. It is shown that the respective method of measurement has a considerable influence on whether and to what extent gender differences can be determined. The hypotheses of the study are presented and the extent to which the study contributes to a deeper understanding of the measurement gap is outlined. Finally, the contextual conditions of the survey sample used here from a large German research organization, the Max Planck Society, are discussed.

Gender and the Measurement Gap in Surveys on Bullying and Sexual Discrimination

The current state of the research is first explained here with regard to sexual discrimination and then concerning bullying. Previous studies on gender differences in self-reported experiences of sexual discrimination in the workplace paint a clear picture. According to these studies, women are affected by sexual discrimination to a significantly greater extent than men (e.g., [Steinþórsdóttir et al., 2018](#); [Vargas et al., 2020](#); [Bondestam and Lundqvist, 2020](#); [Australian Human Rights Commission, 2017](#)). One example is an analysis based on the European Working Conditions Survey. The study included data from more than 60,000 employees from 33 countries and took into account several control variables such as occupational position, workplace gender ratio, or migration background. Sexual harassment was reported by 0.4% of men and 1.3% of women while unwanted sexual attention was reported by 0.8% of men and 2.6% of women ([Reuter et al., 2020](#)).

[Bondestam and Lundqvist \(2020\)](#) conducted a meta-study on sexual discrimination in higher education. After comparing the most-cited research papers, they estimated the level of exposure to sexual harassment in higher education for women at between 11% and 73% (median 49%) and for men at between 3% and 26% (median 15%).² The European Working Conditions Survey and [Bondestam and Lundqvist's](#) meta-study both concluded that – among others – precariously employed individuals are more likely to experience sexual harassment.

In a study conducted on a representative sample of over 2,300 Norwegian employees, [Nielsen et al. \(2010a\)](#) pointed out that the way the measurement and data analyses are conducted can considerably influence the identification of gender differences. This measurement gap is the subject of this paper.

Fundamentally, sexual discrimination and workplace bullying can be measured from the inside perspective on the part of those affected (e.g., using surveys,

²The figures are not comparable with the results of the study by [Reuter et al. \(2020\)](#).

diary-keeping, interviews, or focus groups) or from an outside perspective (e.g., using observational methods, officially reported incidents or peer nominations) (Cowie et al., 2002). Measurement by surveys usually involves a one-item self-labeling approach (e.g., “Have you been subjected to bullying at your current workplace?”) or a whole battery of possibly experienced behaviors (Nielsen et al., 2010b).

In their studies, Nielsen et al. (2010a, 2010b) demonstrated that the measurement approach applied in a survey significantly influences both general prevalence rates and gender effects. Regarding sexual discrimination, they were able to show that after evaluation of one-item-self-labeling and cluster analysis using data from the query of a behavioral item battery, women are statistically significantly more likely to self-report negative experiences at work than men. However, no statistically significant gender difference was found for the indicator of whether at least one of the behaviors from the item battery was experienced within the six months prior to the interview. Similar results were also obtained by Kriegh (2019) who, in a master’s thesis using a sample of 295 undergraduate students, was able to show that female students attribute a higher severity to almost all types of sexual discrimination and harassment than male students. This finding also implies that women tend to self-assess more strongly as having been sexually discriminated against when the overall item score is the same as for men. The gender effect of this measurement gap is even more striking and better researched for bullying.

In general, the results of studies investigating the influence of gender on self-reported experiences of workplace bullying differ somewhat more. Salin and Hoel (2013, p. 236) provided an overview of large-scale nationwide studies that found no or statistically insignificant differences between the sexes (e.g., in the UK, Belgium, Sweden, and Norway) and studies that did (e.g., Ireland, Finland, Spain). In a representative study for Germany, Meschkutat et al. (2005) found that women report experiencing workplace bullying more often than men.

Zapf et al. (2020, p. 112 f.) showed that although the proportion of women among those reporting experiences of bullying at work clearly dominates in numerous studies, this can often be attributed to an overrepresentation of women in the underlying sample. They concluded that there appears to be little evidence that women are more likely to experience bullying because of specific female socialization. Instead, contextual factors appear to play a considerable role and bullying experiences seem to be linked to minority status in the sense of social identity theory. Typical here would be that Steinþórsdóttir and Pétursdóttir (2018) determined that women in the Icelandic police are more likely than men to self-report acts of bullying. Using the opposite logic, Eriksen and Einarsen (2004) were able to show a higher bullying prevalence of male assistant nurses. Striebing’s findings (in this collection) on bullying experiences among the more than 20,000 scientific and non-scientific employees of the Max Planck Society also point to the validity of social identity theory and the relevance of minority status.³

³In his study, however, Striebing found that minority status seems to only be associated with a higher prevalence of bullying among women. This effect was not found for men.

In general, the gender effect in bullying, if it is detectable, is smaller than in sexual discrimination. The smaller effect size could presumably be a factor in why the gender effect is not detectable in studies of bullying with smaller samples (e.g., [Zabrodska and Květon, 2013](#); [Dick and Rayner, 2012](#)). Perhaps because of the smaller effect size of gender on bullying, the measurement gap between the one-item-self-labeling approach and behavioral item batteries appears to warrant even more scholarly attention. Several studies have demonstrated that women are more likely to label self-reported negative experiences at work as bullying ([Rosander et al., 2020](#); [Salin and Hoel, 2013](#), p. 237; [Salin, 2003](#); [Jóhannsdóttir and Ólafsson, 2004](#)). Using a convenience sample of about 250 employees from Spain and Costa Rica, [Escartín et al. \(2011\)](#) also highlighted different conceptions of bullying between men and women. While women emphasized emotional abuse and professional discredit more strongly in their understanding of workplace bullying, men emphasized abusive working conditions.

In their detailed study on the relationship of measuring bullying through behavioral items versus self-labeling, [Rosander et al. \(2020\)](#) concluded that the measurement gap in relation to gender effects may be a potential explanation for the inconclusive and mixed results of previous research on bullying prevalence by gender.

Previous research also examined the relationship between different approaches to measuring workplace misconduct, health, and work-related outcomes for respondents, differentiated according to gender. [Rosander et al. \(2020\)](#) determined that exposure to negative acts is equally associated with mental health impairment in both genders, whereas self-labeling as having been bullied is only associated with mental health impairment in men. [Niedhammer et al. \(2006\)](#) examined the association between workplace bullying and depressive symptoms in a sample of over 7,500 employees in France. Exposure to bullying was measured by an indicator that combined self-report and behavioral items. Accordingly, men who reported having experienced bullying had significantly higher odds of depressive symptoms than women. For women, the odds of having depressive symptoms were slightly higher than for men if the person was exposed to and observed bullying in the workplace.

In the case of sexual discrimination, it was shown that men react more strongly to the specific items, especially in the case of strong forms such as sexual coercion. For example, a study on experiences of sexual harassment in the U.S. Army showed that self-reported experiences of sexual coercion had an impact on the turnover intention of male soldiers only ([Rosen and Martin, 1998](#)). [Nielsen et al. \(2010a\)](#) showed that exposure to sexual harassment had a stronger negative influence on job satisfaction and mental health problems in men than in women, using a cluster analysis based on the behavioral items for the analysis.

In summary, in general, the “threshold” seems to be higher for men than for women as to when an individual considers themselves bullied or sexually discriminated against, and severe acts of sexual discrimination appear to have stronger mental health and workplace integration consequences for men. Thus, previous research suggests that a gender-related measurement gap exists between the single-item approach and the behavioral item approach.

Hypothesizing

This study aimed to take a deeper look at the gender-related measurement gap in bullying and sexual discrimination. It was investigated which specific items men and women tend to react to more often with a self-labeling as having been bullied or sexually discriminated in comparison to each other and whether a pattern is hidden behind these effects. For this purpose, a sample of a large German research organization with several national and international institutes and facilities and around 24,000 employees was used.

To be able to examine the measurement gap in more detail, it was necessary to check whether it could also be identified in the data set used here. The first question was whether the surveyed women self-identified as having experienced bullying or sexual discrimination and/or harassment in the twelve months prior to the survey more frequently than the men. As described above, due to mixed research results it cannot be assumed in general that women self-label more often than men, at least for bullying. However, under the context conditions of the research workplace, a corresponding prediction can plausibly be derived based on social identity theory and social role theory. The theoretical explanations are elaborated in more detail in the other contributions of Striebing in this collection. In summary: women comprise the minority among the scientific employees in the research organization studied and thus represent an out-group in the sense of social identity theory (Tajfel and Turner, 2004). Although women make up the majority among the non-scientific employees, due to the nature of the research system and the governance of the research organization studied here, the non-scientific employees are regularly in a relationship of subordination to the predominantly male and scientific institute management and in a service relationship with the other scientific employees (Keashly, 2019). Furthermore, in the sense of social role theory, the career and working conditions of the research system also structurally sanction single parents and mothers in partnerships with a conventional social role distribution. An evident expression of this is the “leaky pipeline” concept (Zacharia et al., 2020).

H1. More women than men self-label as having experienced workplace bullying and sexual discrimination.

In the next step, the question arises whether the predicted gender effect is still present when controlling for the specific behavioral items. This means the behavioral items measured for this study are included as control variables in the linear regression equation for the relationship between gender and self-labeling. This allows one to test whether women report self-labeling more often than men, even when the values of the behavioral items are held constant. As already outlined, previous research supports the assumption of a gender-related measurement gap.

Rosander et al. (2020) undertook a theoretical classification of the measurement gap. (1) Within the framework of social role theory, it would be plausible that men would be more reluctant to self-label as having been bullied or sexually discriminated against since they consider such social vulnerability to be

incompatible with their image of masculinity (vice versa, a greater level of openness could be attributed to women).⁴ (2) Another explanation is derived from social power theory. According to this, women are more frequently in a relationship of subordination than men, which is linked to stronger feelings of vulnerability and stress when experiencing negative acts (Anderson and Berdahl, 2002; Rosander et al., 2020). This assumption could also be applied to the research organization studied here, as will be shown below. (3) Furthermore, it seems conceivable that men and women are not “more sensitive” or “more tolerant” of negative experiences at work, but simply have different conceptions of bullying or sexual discrimination and tend to include different types of acts under this (Escartin et al., 2011). Rosander et al. see this explanatory approach as consistent with their findings. (4) A final explanation for a measurement gap – especially regarding bullying – is that women, when they self-label themselves as having been bullied, often implicitly include experiences of sexual discrimination, which, however, are not queried in the behavioral item batteries.

H2. Even when controlling for the specific self-reported behaviors, women are still more likely to self-label as having experienced bullying and sexual discrimination at work.

As the third step, the view was followed that different conceptualizations of bullying and sexual discrimination are decisive for the measurement gap between men and women. For this purpose, the state of research on sexual discrimination was also applied to bullying. Following Rosen and Martin (2009) and Nielsen et al. (2010a), it was assumed that men react more often than women with self-labeling to less frequent but more severe acts of bullying and sexual discrimination. Here, the frequency of the examined behaviors is used as an indicator for their “extra-ordinariness” and severity.

H3. Women are more likely to respond with self-labeling to those behaviors of workplace bullying and sexual discrimination that are more prevalent.

The theoretical explanation for this can be derived from social role theory and is based on different typical gender roles internalized by men and women. On average, men are socialized to be more competitive than women (Andersen et al., 2013; Saccardo et al., 2018), which presumably results in a higher tolerance for workplace aggression.

Furthermore, social power theory was also considered. It is conceivable that one and the same item, such as “Being ordered to do work below your level of competence” is framed differently for the average woman in the sample than for

⁴It should be noted that this image of masculinity can have just the opposite effect and lead to men being more likely to describe themselves as having been bullied or sexually discriminated against because of a sexist or homophobic attitude. Thus, men could conceivably be quicker than women to perceive bullying behavior from a woman or sexual comments from a woman or another man as inappropriate and a form of misbehavior.

the men and is, therefore, more frequently assessed as bullying or sexual discrimination. The reason for this, according to social power theory, is that women are on average more often in a position of subordination to men in the scientific workplace (e.g., non-scientific staff that provide services for scientific staff, or a female PhD with a male supervisor).

Context: The Case of the Max Planck Society

The data set used here was derived from an organization-wide online survey among all scientific and non-scientific employees of the Max Planck Society (MPG). The survey was conducted from February 13 to March 13, 2019. Due to the high number of cases (more than 9,000), the data set has high statistical power as even with only small effects, the probability of a false negative error is low. In addition, the respondents belong to a homogeneous context compared to previous studies: the workplace in top-level research. As a result, the presented results show a high degree of context specificity while making the gender effect easily comparable, which means that the influences of different gendered industries, fields of activity, and other control variables are minimized.

With more than 23,600 employees, the MPG is one of the largest non-university research organizations in Germany (Max-Planck-Gesellschaft [Max Planck Society], 2020). It is organized in a decentralized manner and comprises 86 national and international research institutes and facilities from different disciplines, which are linked by a common umbrella organization (Max-Planck-Gesellschaft [Max Planck Society], 2020).

The contextual conditions of the MPG are explained in detail in Striebing's contribution on work climate (in this collection) and are only briefly listed here insofar as they are considered relevant to the present study:

- The MPG is a pure research organization and there is no teaching obligation for its scientific employees. The significantly lower level of contact with students in the MPG presumably influences the nature of bullying and sexual discrimination. For example, those surveyed here are less likely to experience “contra power harassment” (student incivility, bullying, and sexual attention aimed at faculty) than scientists at universities (Lampman et al., 2009).
- The governance of the MPG has been characterized by the so-called Harnack principle since the German imperial era (until the early twentieth century) (Max-Planck-Gesellschaft [Max Planck Society], 2010). Among other things, this leads to a pronounced hierarchical gradient. Institute directors are given a high degree of financial planning security and freedom to shape the content of their work. However, they also bear a great degree of responsibility for the development and success of their institute. In some cases, the departure of an institute director has led to a reorganization of the entire institute's staff (Leendertz, 2020).

Today, the proportion of men in the non-scientific area is 45% and in the scientific area 68% (Max-Planck-Gesellschaft [Max Planck Society], 2020, p. 33).

In the scientific area, the proportion of men increases with each hierarchical level from 61% for doctoral candidates to 84% for W3 researchers (which is the highest academic rank in the German research system). In the non-scientific field, no data are available on the distribution of gender across hierarchical levels (e.g., in many organizations, the secretariat or “anteroom” still shows a strong gender imbalance). However, a functional differentiation is recognizable. In the area of “Technology” (often IT service), the proportion of men is 60% and in “Administration” it is 32%.⁵

Since there are more men than women in the higher hierarchical research positions and more women than men in the lower hierarchical positions, women would be affected more frequently than men in the case of misconduct by superiors toward subordinates. Service relationships, on the other hand, seem to be gendered differently today (not only) in the MPG, as a male-dominated technology sector has emerged alongside a female-dominated administrative sector.

Research Approach

The following section describes the data set used to investigate the hypotheses formulated and the variables used. The analytical procedure is subsequently explained.

Data

In the full survey on the work climate at the MPG, in addition to team climate, an assessment of the superior, the work-life balance, the commitment to one’s own research institute, and – in particular – experiences of bullying and sexual discrimination at the workplace were queried. Both bullying and sexual discrimination were surveyed by a list of behavioral items and a general question for self-labeling. The item lists were prefixed to the general assessment of whether a person would describe themselves as having been bullied or sexually discriminated against.

The questionnaire for the online survey, which was largely based on previous English-language studies, was translated into German by a professional translation agency, and both language versions were subjected to a pretest and evaluated by a task force⁶ set up by the MPG to check whether they were formulated coherently and sensibly for all MPG employees. Subsequently, the

⁵The breakdown of work units in the annual report differs from the breakdown in the survey. In the survey, a distinction was made between “Technology and IT,” “Other Services” and “Administration.” Among the 3,113 relevant cases in the survey, the proportions of men are markedly different from those in the annual report (Tech & IT: 81%, Other services: 25%, Admin: 22%).

⁶This task force consisted of directors of the Max Planck Institutes as well as central officers and employee representatives.

German and English questionnaires were proofread by the translation agency already involved.

More than half of the MPG employees participated in the online survey. After data cleaning, evaluable questionnaires were available from 38% of the employees ($n = 9,078$). The data set is described in more detail in Striebing's contribution on work climate (in this collection). For the analyses carried out here on bullying, sufficient data were available in 5,831 cases and for sexual discrimination in 6,987 cases. This results in coverage of 24.5 resp. 29.4% of all employees.

Variables

The study investigated gender-related differences in self-reporting of bullying and sexual discrimination. Table 17 shows the descriptive statistics of the two samples, differentiated by the respective dependent variables.

The first dependent variable is the respondents' self-assessment concerning whether they have experienced workplace bullying in the 12 months prior to the survey ($M_{\text{bullied}} = 0.083$, $SD = 0.276$). For this binary variable, all those persons were defined as "bullied" who indicated in the self-ascription to have been subjected to bullying at least occasionally (or monthly, weekly, daily) in the sense of

Table 17. Descriptive Statistics of Dependent, Independent, and Control Variables in the Two Regression Models.

Variable Name	Category	Bullying		Sexual Discrimination	
		<i>N</i>	Margin %	<i>N</i>	Margin %
Outcome					
Self-ascription to occasional or more frequent ... (yes/no)	No	5,345	91.7	6,732	96.4
	Yes	486	8.3	255	3.6
Predictors					
Gender	Female	3,134	53.7	3,635	52.0
	Male	2,697	46.3	3,352	48.0
Form of employment	Non-scientific staff	2,492	42.7	3,187	45.6
	Scientific staff	3,339	57.3	3,800	54.4
Valid		5,831	64.2	6,987	77.0
Missing		3,247	35.8	2,091	23.0
Total		9,078	100	9,078	100

the definition below (no = 0, yes = 1). The original item wording was modeled after Nielsen et al. (2010b, p. 958) and reads as follows:

“Bullying” here denotes repeated and persistent negative behavior directed toward one or several individuals, which creates a hostile work environment. The targeted individuals have difficulty defending themselves; in other words, bullying is not a conflict between parties of equal strength.

Have you been subjected to bullying at your current workplace at the Max Planck Society during the last 12 months? (Never – Occasionally – Monthly – Weekly – Daily)

The second dependent variable is the respondents’ self-assessment on whether they had experienced sexual discrimination by colleagues or supervisors at work in the year prior to the survey ($M_{\text{discriminated}} = 0.037$, $SD = 0.188$). For this variable, all those persons were coded as “sexually discriminated [against]” who indicated having experienced sexual discrimination and/or harassment at least occasionally (or monthly, weekly, daily) (no = 0, yes = 1). No distinction was made between discrimination and harassment in the item wording.⁷

⁷In retrospect, the author does not consider it optimal that a formulation was used for the self-labeling item that does not differentiate between sexual discrimination and sexual harassment. Both are legally and sociologically different concepts, albeit with considerable overlaps. In the process of formulating the questionnaire, the problem was seen that respondents might apply a too narrow understanding of the term when asked about experiences of sexual harassment, because sexual harassment is a criminal offence in the sense of the German Criminal Code. Such a narrow understanding, it was feared, would not be compatible with the broader understanding of the term as measured in the SEQ-DoD. To suggest to the respondents that the item is also intended to capture broader experiences of sexism, the questioning of sexual harassment and discrimination was combined into one item.

In the terminology of survey methodology, this created a “double barreled question,” which ultimately no longer allows a clear distinction as to whether respondents have had experiences of sexual discrimination or sexual harassment or both. More effective alternatives would have been to formulate two single-item measures with accompanying definitions to measure sexual discrimination and harassment separately, or just ask for experiences of sexual harassment alongside a definition, or, as Carr et al. (2000) did, to query both constructs via a very compact index.

Nevertheless, the single-item-measures used here are compatible with the SEQ-DoD. Especially within the SEQ-DoD subconstruct “sexist hostility,” the item battery has intersections with the concepts of sexism and sexual discrimination.

In fact, in the self-labeling as having experienced sexual discrimination and/or harassment measured here, on the one hand, a narrow understanding of the term seems to have prevailed. An indicator for this is the low prevalence of self-labeling of 3.7% in the sample (Appendix 2). In comparison, the more discrimination-related item “.... treated you differently because of your gender?” of the SEQ-DoD has a significantly higher prevalence of 18.9% in the sample. At the same time, self-labeling seems to be

Please select the appropriate answer.

While working at the Max Planck Society, have you at any point during the last 12 months experienced any behavior that you would call “sexual harassment and/or discrimination”? (Never – Occasionally – Monthly – Weekly – Daily)

A substantial difference between the concepts of bullying and sexual discrimination conveyed by the item wording is that in the case of sexual discrimination, respondents were explicitly asked to also count one-time experiences (“[...] have you experienced [...] any behavior [...]”) whereas, in the case of bullying, the restriction was that only “repeated and persistent” experiences are to be taken into account. Such differentiation is anchored in both social science and (German) legal conceptual understandings.

The independent variables of the equation for estimating the self-labeling as having been bullied are the gender of the respondents, whether they are non-scientific or scientific employees, and a total of 22 behavioral items from the Negative Acts Questionnaire revised (NAQ-rev). The items from the NAQ-rev were taken from [Einarsen et al. \(2009\)](#) and adapted based on pretesting and the feedback from the MPG task force ([Table 18](#)). All independent variables were binary coded. In the case of gender (male = 0, female = 1), the questionnaire did not explicitly ask for a third gender.⁸ The main reason for this was due to data protection considerations. As a result of the small number of non-binary cases anticipated, it would have been very easy to identify individuals within the MPG in combination with other variables such as their section or hierarchical level.⁹

characterized by experiences of discrimination as well as harassment. The regression parameters of model 2 in Appendix 4 indicate that the item “... put you down or was/were condescending to you because of your gender?” and the items more related to sexual harassment “... made unwanted attempts to stroke, fondle, or kiss you?” and “... implied that you would be promoted faster or given better treatment or be otherwise rewarded if you engage in sexual behavior?” correlate most strongly with positive self-labeling.

As a result, the mixing of sexual discrimination in the questionnaire design at that time is a limitation of this study but does not categorically imply its invalidity compared to other studies that asked about sexual harassment via a single item without mixing it with sexual discrimination.

⁸Specifically, the response option “No answer/Other gender” was offered.

⁹The research team and task force were thus faced with the consideration of surveying a third gender and, in return, dispensing with a whole series of other sociodemographic data deemed essential, or querying gender in a binary manner and mixing an alternative gender with the category “Not specified.” The decision in favor of the second option, which was made after lengthy consideration, allowed people who feel they belong to a different gender to have a response option while still preserving data protection. The author is aware that this is a pragmatic solution, but not an ideal one.

Table 18. Introduction of the Question and Queried Items on the Frequency of Self-reported Experiences With Workplace Bullying.

These statements describe your interactions with your coworkers (including superiors). Please rate whether and how often you have experienced one or more of the following at your current workplace during the last 12 months.

Work-related Items	Person-related Items	Physically Intimidating Items
1. Someone withholding information, which affects your performance	8. Others spreading gossip or rumors about you	20. Being shouted at or being the target of spontaneous anger
2. Being ordered to do work below your level of competence	9. Having key areas of responsibility removed or replaced with more trivial or unpleasant tasks	21. Intimidating behavior such as finger-pointing, invasion of personal space, shoving, or having your way blocked
3. Having your opinions ignored	10. Being humiliated or ridiculed in connection with your work	22. Threats of violence or physical abuse, or actual abuse
4. Being given an unmanageable workload	11. Being ignored or excluded	
5. Being given tasks with unreasonable deadlines	12. Having insulting or offensive remarks made about your person, your views, or your private life	
6. Excessive monitoring of your work	13. Having unjustified allegations made against you	
7. Pressure not to claim something to which you are rightfully entitled (e.g., sick leave, parental leave, holiday)	14. Being the target of practical jokes by people with whom you don't get along	
	15. Hints or signals from others that you should quit your job	
	16. Being the subject of excessive teasing and sarcasm	
	17. Unjustified persistent criticism of your errors or mistakes	
	18. Unfair repeated reminders of your errors or mistakes	
	19. Being ignored or facing a hostile reaction when you approach a coworker or group of coworkers	

Scaling: Never, Occasionally, Monthly, Weekly, Daily.

For the control variable “Scientific or non-scientific staff,” non-scientific employees were coded 0, and scientific employees were coded 1. The variable was taken into account because the gender ratios vary substantially between the scientific and non-scientific fields. The items of the NAQ-rev were coded 0 if a person indicated that they had “never” experienced the specific behavior in the 12 months prior to the survey. The items were each coded 1 if a person reported experiencing them occasionally, monthly, weekly, or daily in the past year. The Cronbach’s alpha of the 22 binary NAQ-rev items is 0.889 ($n = 6,676$).¹⁰

Based on the binary variables listed, the binary variables for the interaction of gender and the bullying items, which are the focus of this study, were developed. A value of 0 for the interaction variable “Female*[Someone withholding information, which affects your performance]” thus represents either a male who reported to have never, occasionally, or more often experienced this bullying item or a female who reported to have not experienced this item. A value of 1 represents a female who confirmed having experienced the item in question at least occasionally. In addition, to control for the scientific or non-scientific work focus of an employee, the regression model also includes the interaction of the variable “Scientific or non-scientific staff” with the bullying items coded in the same form.

The equation used to estimate the average proportion of people who classify themselves as having been sexually discriminated against or harassed includes the same independent variables. However, 15 items were used here that were taken from the short version of the Sexual Experience Questionnaire-DoD (SEQ-DoD short) according to Stark et al. (2002) (Table 19). The Cronbach’s alpha of the binary SEQ-DoD items is 0.751 ($n = 8,018$).

The descriptive statistics of the variables in the equation estimating the average self-labeling as having been bullied are provided in Appendix 1, and those for sexual discrimination are in Appendix 2. For an overview of the descriptive distribution of the analyzed behavioral and self-labeling items by gender and status as scientific or non-scientific, see Schraudner et al. (2019).

To check the robustness of the results, further regression models were run to see whether the significance values and confidence intervals of the interaction of gender with the bullying items changed. The tests performed are summarized in the Robustness section in Appendix 5.

¹⁰Different approaches can be found in research on the question of which response values should mark the cut-off in order to assess a person as being bullied and/or sexually discriminated against based on their self-assessment. The different cut-offs (e.g., Leymann criterion, Mikkelsen/Einarsen criterion) and calculation techniques (additive or by latent class analysis) and their implications for the resulting prevalence rates based on the sample used here are described in detail in Schraudner et al. (2019, p. 60, 71 f). It is noteworthy that different calculation techniques leading to comparably high prevalence rates show only a partial overlap in the relevant cases.

Table 19. Introduction of the Question and Queried Items on the Frequency of Self-reported Experiences With Sexual Discrimination.

These statements describe types of unwanted behavior of a sexualized nature. In the past 12 months, have you found yourself in situations involving your coworkers (including superiors) at the Max Planck Society where one or more of these individuals...

Sexist Hostility	Sexual Hostility	Unwanted Sexual Attention	Sexual Coercion
1. ... treated you differently because of your gender?	5. ... repeatedly told sexual stories or jokes that were offensive to you?	9. ... made unwanted attempts to establish a romantic or sexual relationship with you?	13. ... made you feel threatened with some sort of retaliation for not being sexually cooperative?
2. ... displayed, used, or distributed sexist or sexually suggestive materials?	6. ... made unwelcome attempts to draw you into a discussion on sexual matters?	10. ... continued to ask you out on dates (drinks, dinner, etc.), even though you said "No"?	14. ... treated you badly for refusing to have sex?
3. ... made personally offensive sexist remarks?	7. ... made offensive remarks about your appearance, body, or sexual activities?	11. ... touched you in a way that made you feel uncomfortable?	15. ... implied that you would be promoted faster or given better treatment or be otherwise rewarded if you engage in sexual behavior?
4. ... put you down or was/were condescending to you because of your gender?	8. ... made gestures or used body language of a sexual nature which embarrassed or offended you?	12. ... made unwanted attempts to stroke, fondle, or kiss you?	

Scaling: Never, Occasionally, Monthly, Weekly, Daily.

Methods

To test the study hypotheses, two hierarchical regression models were constructed, with each estimating the mean values of MPG employees who self-labeled as having been bullied or sexually discriminated against.

All variables included in the regression models were transformed into binary variables. The main reason for this was to achieve better interpretability of the regression parameters.¹¹ Moreover, with respect to the ordinal baseline variables of the bullying and sexual discrimination items, there was not always a consistent linear relationship to the respective dependent variables.

Since the two dependent variables are binary, a binary logistic regression would be logical as this has the highest estimation accuracy for binary dependent variables. However, since the focus of this study was on the regression parameters of the tested models and in particular on the interactions of the bullying and sexual discrimination items with the gender of the respondents, linear regression equations were set up. As a result, a lower estimation precision was accepted while providing greater sensitivity in identifying interaction effects and more interpretable interaction effects (Best and Wolf, 2010). Unlike binary logistic regression, the parameters of the interactions in the linear model can also be used as a measure of effect size. By using linear regressions, the values of the interaction effect patterns shown in Figs. 6 and 8 can be meaningfully interpreted. At the same time, however, the implications of logistic models for the hypotheses tested were considered in the robustness tests for this study (Annex 5).

The two hierarchical regression models tested have a four-stage structure, which is explained here based on the bullying overall model:

$$\text{Model 1: } Y_{\text{Bullying}} = \beta_0 + \beta_{\text{Female}} + \beta_{\text{Scientist}} + e$$

In the first model, the average proportion of MPG employees who describe themselves as having been bullied is estimated depending on gender and scientific or non-scientific activity. Based on its regression parameters, the model allows the evaluation of *HI*, namely that women generally report having experienced bullying at work more often than men.

$$\text{Model 2: } Y_{\text{Bullying}} = \beta_0 + \beta_{\text{Female}} + \beta_{\text{Scientist}} + \beta_{\text{NAQ-item 1}} + \dots + \beta_{\text{NAQ-item 22}} + e$$

In the second model, the binary items of the adjusted NAQ-rev and the SEQ-DoD are also included in the equation. The regression parameters of the second

¹¹A typical interpretation using ordinal variable scaling would be: With each additional level on the Likert scale on which item *xy* is based, the average proportion of people who describe themselves as bullied increases by 4 percentage points. A typical interpretation with binary variable scaling is: the self-reported experience of item *xy* leads to an average increase of 12 percentage points in the proportion of respondents who describe themselves as bullied.

model enable the evaluation of *H2* according to which women, on average, still label themselves as having been bullied or sexually discriminated against more often than men, even when considering the specific behaviors, they report experiencing.

$$\text{Model 3: } Y_{\text{Bullying}} = \beta_0 + \beta_{\text{Female}} + \beta_{\text{Scientist}} + \beta_{\text{NAQ-item 1}} + \dots + \beta_{\text{NAQ-item 1*Female}} + \dots + \beta_{\text{NAQ-item 22*Female}} + e$$

The third model also includes the interaction variables of the behavioral items with the gender of the respondents. The model thus enables the identification of items that, depending on the gender of the respondent, contribute to varying degrees to the respondents self-labeling themselves as having been bullied or sexually discriminated against.

$$\text{Model 4: } Y_{\text{Bullying}} = \beta_0 + \beta_{\text{Female}} + \beta_{\text{Scientist}} + \beta_{\text{NAQ-item 1}} + \dots + \beta_{\text{NAQ-item 1*Female}} + \dots + \beta_{\text{NAQ-item 1*Scientist}} + \beta_{\text{NAQ-item 22*Scientist}} + e$$

In model 4, to control the gender interaction, the interaction variables between scientific or non-scientific employment and the behavioral items were also included. The regression parameters of model 4 were used to analyze the size of the interaction effects between gender and the individual NAQ items.

To assess *H3*, a new data set was built based on the gender-related interaction effects identified in the model. First, the data set includes the variable “bullying interaction effects.” The values of this variable correspond to the regression parameters of the 22 interaction effects of gender and the NAQ items from model 4 in Appendix 3 ($M = -0.002$, $SD = 0.059$, $Max. = 0.069$, $Min. = -0.216$, $n = 22$). Secondly, the variable “bullying item frequency” was created. The frequency variable ($M = 0.205$, $SD = 0.140$, $Max. = 0.562$, $Min. = 0.007$, $n = 22$) indicates the relative frequency of a bullying item in the sample according to the descriptive statistics in Appendix 1. Thirdly, to operationalize severity, a variable was created using the regression parameters reported in model 2 for the individual bullying items ($M = 0.045$, $SD = 0.050$, $Max. = 0.154$, $Min. = -0.016$, $n = 22$). These parameters can be considered as indicators for the severity of an item, as they display the average contribution of the respective items to the self-assessment as having been bullied. The three variables, interaction effects ($M = 0.021$, $SD = 0.248$, $Max. = 0.598$, $Min. = -0.562$, $n = 15$), frequency ($M = 0.039$, $SD = 0.048$, $Max = 0.189$, $Min. = 0.001$, $n = 15$), and severity ($M = 0.093$, $SD = 0.096$, $Max. = 0.365$, $Min. = -0.032$, $n = 15$), were also calculated for sexual discrimination.

The newly built interaction variable was used as an outcome in two linear regression models for bullying and sexual discrimination with the predictor “item frequency” to test whether there is a statistically significant relationship between the direction and strength of the gender-related interaction effects and the frequency of a respective item. In addition, Pearson’s r was used to check whether the frequency of the items was also related to their “severity.”

The data set of scientific and non-scientific employees of the MPG used here is the result of an organization-wide full survey. This means that the evaluation results are valid under the specific contextual conditions of the MPG as a decentrally organized and nationally and internationally active institution oriented toward basic research without teaching operations. Statements about the generalizability of the study results beyond this specific context should therefore not be made on the basis of the data set. Although they were given for all estimated regression parameters, the confidence intervals of the effect sizes and p -values are only of secondary interest due to the absolute validity of the results for the MPG and their lack of generalizability.

All analyses were performed using SPSS 26. The syntax of the tests and the SPSS output of the regressions reported here, as well as other robustness tests, can be viewed in the online appendix.¹² The regression tables in the Appendix also include the collinearity statistics used to check the predictors of the regression equations for multicollinearity. The maximum variance influence factor (VIF) of the four bullying equations is 7.289 and thus can be considered non-critical. The maximum VIF of the four sexual discrimination equations is 44.991. Overall, 10 of 97 predictors of the four-stage hierarchical model for sexual discrimination show a critical VIF equal to or greater than 10. The test revealed high correlations (≥ 0.9) between individual items of the SEQ-DoD and their respective interaction variables. The correlations thus always resulted when there was a particularly pronounced interaction effect of, for example, gender and an item. The increased VIF values can be considered unproblematic precisely because they were found exclusively between interactions and the corresponding independent variables. In such cases, there is no multicollinearity problem in the sense of inflation of the standard errors and the interaction effects can be interpreted without further adjustments (Disatnik and Sivan, 2016).

Results

In the following, the model summaries for bullying and sexual discrimination are explained. The hypothesis tests that were conducted to evaluate $H1-H3$ and further evaluations to enrich the interpretation of the hypotheses are also subsequently reported.

Bullying

Table 20 presents the statistics estimating the explanatory power of the four regression models tested. Equation 1, which includes only gender and a scientific or non-scientific type of job, explains only 0.6% (R^2) of the variance in self-labeling as having been bullied at work. The R^2 , that is, the explanatory power of the regression equation, increases markedly by 39.5 percentage points with the addition of the NAQ-rev items in model 2. Adding the interaction effect of gender and the NAQ-rev items in model 3 improves the model quality statistically

¹²The online appendix can be accessed at: https://github.com/clemensstriebling/diversity_and_discrimination_in_RPOs.

Table 20. Model Summary Statistics for the Estimation of the Average Proportion of MPG Employees Who Self-label as Having Been Bullied.

Model	R	R Square	Adjusted R Square	SE of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	0.075	0.006	0.005	0.276	0.006	16.624	2	5,828	0.000
2	0.633	0.401	0.398	0.214	0.395	174.074	22	5,806	0.000
3	0.642	0.413	0.408	0.213	0.012	5.252	22	5,784	0.000
4	0.651	0.424	0.417	0.211	0.011	5.216	22	5,762	0.000

significantly by another 1.2 percentage points.¹³ Model 4, which also takes into account the interaction of the variable scientist/non-scientist with the bullying items, again shows a statistically significant 1.1 percentage points higher R^2 while model 4 explains 42.4% of the variance of the dependent variable.

The first question that was addressed was whether the women in the data set self-label as having been bullied more often than men (*H1*). According to model 1, women are on average 3 percentage points more likely to self-label as having been bullied (95% CI: 0.016/0.045, SE = 0.007, $p = 0.000$).¹⁴

Secondly, there was the question of whether this gender effect is still present when the individual items of the NAQ-rev are included in the regression model (*H2*). In model 2, the average proportion of women who rate themselves as having been bullied is 1.7 percentage points higher than that of men (95% CI: 0.006/0.028, SE = 0.006, $p = 0.003$). The effect is statistically significant. The difference between the gender effects in models 1 and 2 is 1.3 percentage points (95% CI : -0.005/0.031, SE = 0.009, $p = 0.159$).¹⁵

In the following, a closer look is taken at the specific interaction effects between gender and the NAQ-rev items. It is questionable whether women react to all the individual items with self-labeling as having been bullied more often than men in general or whether men and women react very specifically toward the single items. Fig. 6 shows the interaction effects between gender and bullying items (the parameters from model 4 are applied, which also controls for interaction effects of scientific and non-scientific employees). The individual bullying items are divided into work-related, person-related, and physically intimidating items based on their theoretical classification.

In general, Fig. 6 shows that the strength of the interaction effects increases from the work-related to the person-related to the physically intimidating items. Partial patterns can be found, for example, women who self-identified as having experienced bullying at work also stated more frequently that they had experienced

¹³As the threshold for assessing statistical significance, $\alpha = 0.05$ was set for all conducted tests.

¹⁴The conditional estimated marginal mean of male researchers in the sample who describe themselves as bullied is 6%. The average of female researchers in the sample who describe themselves as bullied is 9%. In the estimate for non-scientific employees, around 2 percentage points each are to be added for men and women, resulting in values of 8 and 11%, respectively.

¹⁵The following formula was used to manually calculate the difference of difference tests (Paternoster et al., 1998):

$$z = (\beta_1 - \beta_2) / \sqrt{((SE \beta_1)^2 + (SE \beta_2)^2)}.$$

The p -value was calculated using the following formula (Altman and Bland, 2011):

$$p = \exp(-0.717 * z - 0.416 * z^2).$$

Standard errors were calculated with the formula in Altman and Bland (2011):

$$SE = \text{Estimate} / z.$$

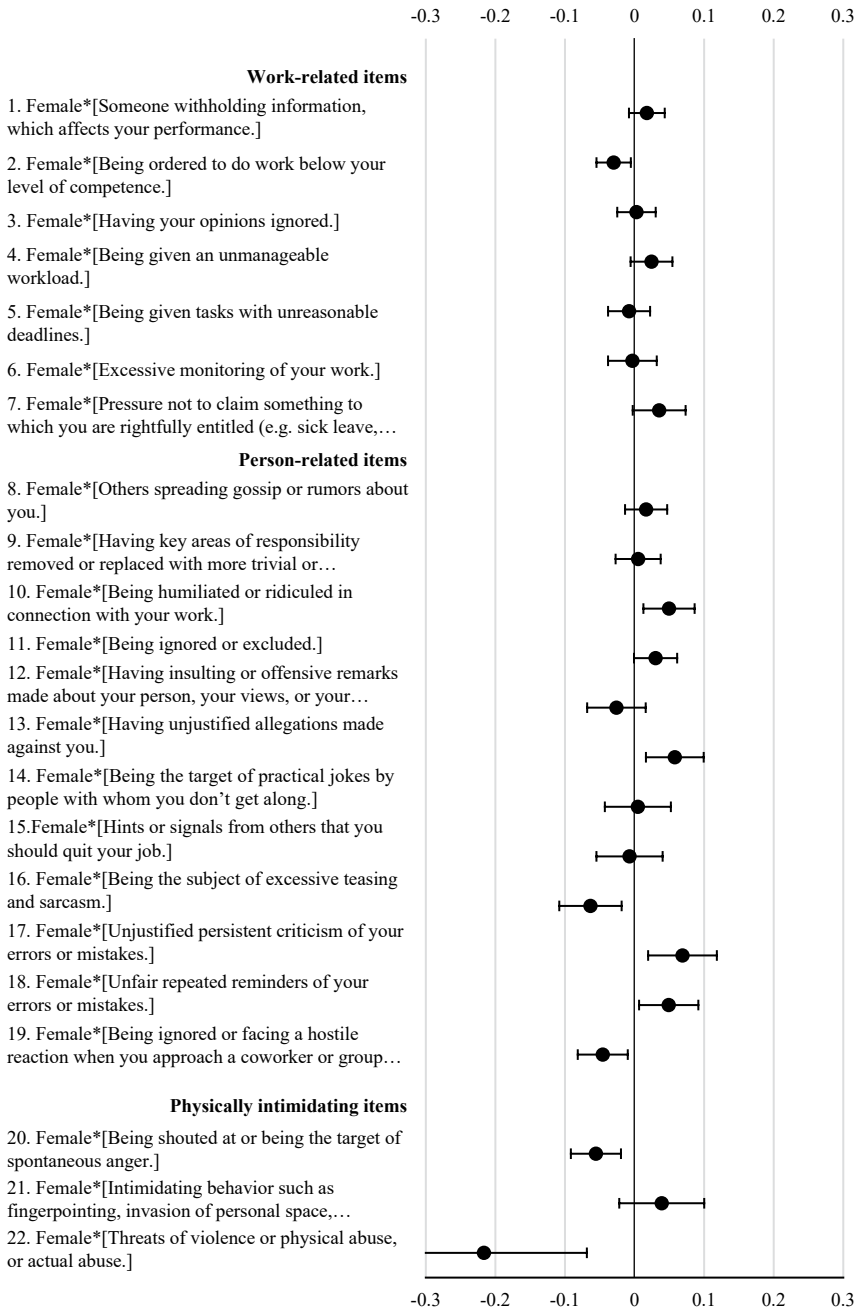


Fig. 6. Regression Coefficients of the Interaction Effects of the NAQ-rev Items with Gender, Related to the Self-ascription to Having Been Bullied Occasionally or More Frequently (Yes/No), Model 4. 95% Confidence Interval.

criticism of their work that was perceived as unjustified (see the items: “Having unjustified allegations made against you” (13), “Unjustified persistent criticism of your errors or mistakes” (17), and “Unfair repeated reminders of your errors or mistakes” (18)). In part, however, interaction effects can also be found that at first glance appear to be contradictory. For example, women who considered themselves as having been bullied more often stated that they were ignored or excluded. For men, on the other hand, the self-reported experience of “Being ignored or facing a hostile reaction when you approach a coworker or group of coworkers” reacts more strongly with the self-assessment as having been bullied.

In general, men seem to self-label as being bullied more often when they report experiencing situations that measure immediate aggression (“Being the subject of excessive teasing and sarcasm” (16), “Being ignored or facing a hostile reaction when you approach a coworker or group of coworkers” (19), “Being shouted at or being the target of spontaneous anger” (20), and “Threats of violence or physical abuse, or actual abuse” (22)).

It is questionable whether a pattern in the sense of *H3* can be identified behind the interaction effects of gender and the individual items. Fig. 7 shows that particularly those bullying items occur frequently in the sample to which women react somewhat more frequently with the self-labeling of having been bullied. Or the other way round: men on average react more frequently with the self-labeling as having been bullied to those items that occur less frequently in the sample. The dots represent the individual items of the NAQ-rev. The ordinate axis represents the calculated interaction effects between gender and the individual items (as shown in Fig. 6). The abscissa axis indicates the relative frequency of the respective items in the sample (see Appendix 1).

The pattern found is very weak. In view of the small effect size and the p-value, it cannot be claimed that men tend to respond more frequently than women to less frequent bullying items with the self-labeling as having been bullied. The estimated regression line starts at the constant -0.019 (95% CI : $-0.067/0.028$, SE = 0.023, $p = 0.408$) and runs with a slope of 0.082 (95% CI : $-0.110/0.274$, SE = 0.092, $p = 0.382$). The effect sizes of the NAQ-rev items in model 2 (Appendix 3) as a measure of the severity of an item are statistically significantly negatively related to the frequency of the items ($r(20) = -0.739$, $p = 0.000$). Subsequently, the most frequent items in Fig. 7 also tend to be those that have a smaller effect on self-attribution as having been bullied.

Table 21 shows the relationship between the men and women surveyed who describe themselves as having been bullied and the other person or persons involved. The table does not reveal any considerable differences in terms of distribution between men and women. The very weak differences imply that the men in question reported bullying by their immediate superior slightly more often, whereas the women in the sample indicated experiencing “cross-hierarchical” bullying by multiple parties slightly more often. Furthermore, women on average also reported experiencing a higher number of different specific bullying items than men ($M_{\text{men}} = 4.312$, $M_{\text{women}} = 4.746$, $M_{\text{men}} - M_{\text{women}} = -0.424$, 95% CI : $-0.657/-0.190$, SE = 0.119, $p = 0.000$).

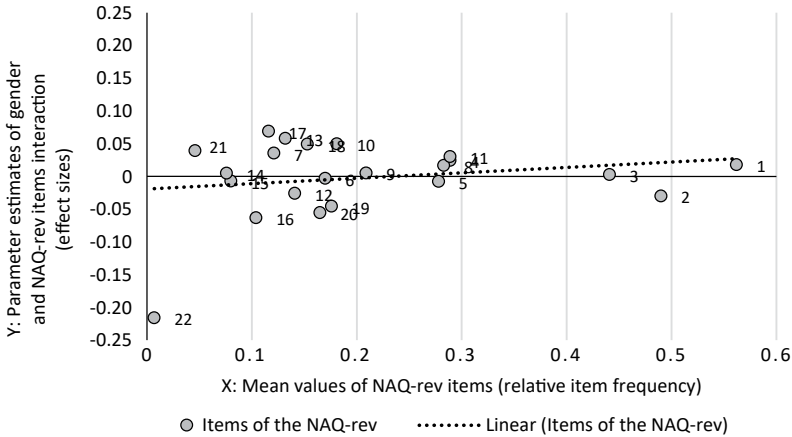


Fig. 7. Positioning of the NAQ-rev Items According to Their Descriptive Mean Values (Their Relative Frequency) and Their Parameter Estimates for the Interaction With Gender (Taken From Model 4).

Table 21. Statements by Individuals Who Stated They Had Experienced Bullying in the 12 Months Prior to the Survey, Categorizing the People From Whom the Bullying Originated, Differentiated by Gender.

Relationship to Other Persons Involved		Male	Female	Total
Immediate superior	Count	40	41	81
	% Within gender	20.70	15.60	17.80
Other superior	Count	15	21	36
	% Within gender	7.80	8.00	7.90
Fellow group member	Count	40	57	97
	% Within gender	20.70	21.70	21.30
Other colleague	Count	20	28	48
	% Within gender	10.40	10.60	10.50
Multiple parties	Count	78	116	194
	% Within gender	40.40	44.10	42.50
Total	Count	193	263	456
	% Within gender	100.00	100.00	100.00

Sexual Discrimination

An overview of the summary statistics of the four equations tested for calculating the average proportion of MPG employees who consider themselves as having experienced sexual discrimination and/or harassment can be found in Table 22.

Table 22. Model Summary Statistics for the Estimation of the Average Proportion of MPG Employees Who Self-label as Having Been Sexually Discriminated Against.

Model	R	R Square	Adjusted R Square	SE of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	0.109	0.012	0.012	0.186	0.012	41.794	2	6,984	0.000
2	0.509	0.259	0.257	0.166	0.247	155.171	15	6,969	0.000
3	0.529	0.280	0.276	0.160	0.020	13.105	15	6,954	0.000
4	0.541	0.293	0.288	0.158	0.013	9.126	14	6,940	0.000

According to this, gender and the status as a scientific or non-scientific employee explain 1.2% of the variance (R^2) of the dependent variable. When also considering the items of the SEQ-DoD in model 2, the R^2 increases by 24.7 percentage points. Including the interaction effect of gender and the items of specific acts of sexual discrimination increases the proportion of variance explained by an additional statistically significant 2 percentage points. In model 4, which also accounts for the interaction of the SEQ-DoD items with status as non-scientifically or scientifically employed, R^2 also increases statistically significantly by an additional 1.3 percentage points to 29.3%.

H1 was first tested to determine whether women are generally more likely than men to self-label as having experienced sexual discrimination. The average proportion of female MPG employees who consider themselves to have experienced sexual discrimination is 4 percentage points higher than the proportion of male employees (95% CI: 0.031/0.049, SE = 0.005, $p = 0.000$).¹⁶

Contrary to *H2*, this gender effect disappears in model 2, which also considers the individual items of the SEQ-DoD ($\beta = 0.000$, 95% CI: -0.008/0.008, SE = 0.004, $p = 0.960$). The gender effect in model 1 and the gender non-effect of model 2 accordingly show a statistically significant difference to each other.

With the falsification of *H2*, *H3* also lacks its basis as it was predicted that women would respond more strongly than men to the items of the SEQ-DoD that occur more frequently in the sample with the self-labeling as having experienced behaviors of sexual discrimination and/or harassment. Fig. 8 shows the interaction effects of gender and the items measuring sexual discrimination. The items were grouped based on their theoretical classification as sexist hostility, sexual hostility, unwanted sexual attention, and sexual coercion.

Considering the interaction plot of Fig. 8, in the category “sexual coercion,” gender has a considerably greater influence on the extent to which the respective items contribute to the self-labeling as having been sexually discriminated against than in the other types of sexual discrimination. Partial patterns in the interaction effects of sexual discrimination are also apparent. For example, female employees more frequently react with self-labeling on sexist remarks, sayings and materials more critically (“... made personally offensive sexist remarks” (3), “... repeatedly told sexual stories or jokes that were offensive to you?” (5), and “... displayed, used, or distributed sexist or sexually suggestive materials?” (2)). Males, on the other hand, tended to respond somewhat more frequently with self-labeling to more abstract sexist hostility (“... put you down or was/were condescending to you because of your gender?” (4) and “... treated you differently because of your gender?” (1)). Some interactions also seem somewhat contradictory, such as when women more frequently react to unwanted attempts to establish a romantic or sexual relationship (9) with a self-labeling as having been sexually discriminated against, while men react more often with the same self-labeling in response to repeated and already

¹⁶For sexual discrimination, the conditional estimated marginal mean is 3% for male researchers and 7% for female researchers. For non-scientifically employed men it is 0% and for women 4%.

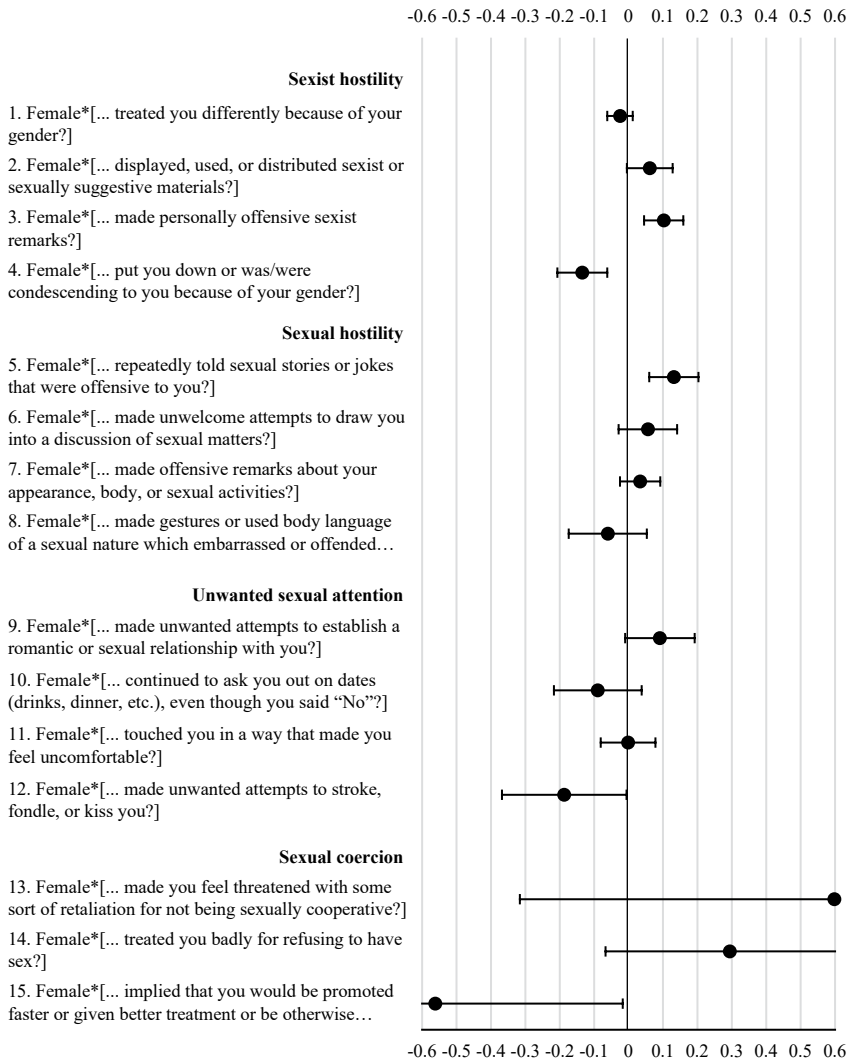


Fig. 8. Regression Coefficients of the Interaction Effects of the SEQ-DoD Items With Gender, Related to the Self-ascription of Having Experienced Sexual Discrimination and/or Harassment, Occasionally or More Frequently (Yes/No), Model 4.

denied requests for dates (10). The surveyed men and women thus react in a comparable way to unwanted attempts to initiate contact and relationships, whereby men react more frequently to the first steps toward initiating contact – dating – by self-labeling themselves as having experienced sexual discrimination.

Fig. 9 visualizes the effect size distribution by item frequency as described above for bullying. The calculated regression line has the constant 0.033 (95% CI:

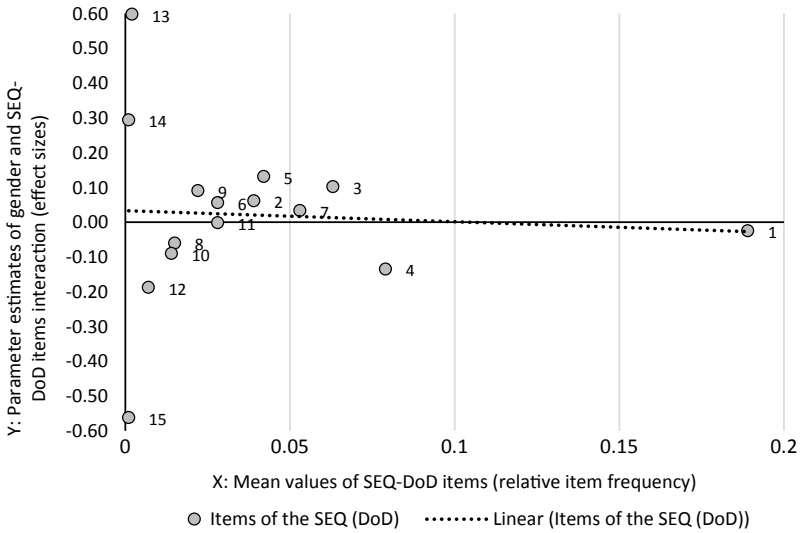


Fig. 9. Positioning of the SEQ-DoD Short Items According to Their Descriptive Mean Values (Their Relative Frequency) and Their Parameter Estimates for the Interaction With Gender (Taken from Model 4).

-0.155/0.221, SE = 0.087, $p = 0.711$) and runs with the parameter -0.317 (95% CI: -3.429/2.794, SE = 1.440, $p = 0.829$). The individual items of the SEQ-DoD short for the most part appear only rarely in the sample studied. The factual gender differences in the individual items thus have no clear implications for the correlation between the items and the self-rating as having been sexually discriminated against.

Table 23 shows the hierarchical relationship between persons who perceive themselves as having been sexually discriminated against or harassed at work and the other persons involved. The women surveyed did not report experiencing sexual discrimination by immediate or other superiors less or more often than the men. A clearer difference can be seen in the role of other colleagues, as the data implies that they are considerably more frequently involved in cases of sexual discrimination against women than against men.

However women report experiencing, on average, more than twice as many different items in the workplace than men ($M_{men} = 0.342$, $M_{women} = 0.841$, $M_{men} - M_{women} = -0.499$, 95% CI: -0.562/-0.437, SE = 0.032, $p = 0.000$).

Interpretation

The results of the hypothesis tests conducted are summarized in Table 22. For persons who self-labeled as having been bullied or as sexually discriminated against, the predicted gender effect is supported by the analyses. However, the

Table 23. Statements by Individuals Who Stated They Had Experienced Sexual Discrimination and/or Harassment in the 12 Months Prior to the Survey, Categorizing the People From Whom the Bullying Originated, Differentiated by Gender.

Relationship to other Persons Involved		Male	Female	Total
Immediate superior	Count	11	24	35
	% Within gender	18.6	12.8	14.2
Other superior	Count	3	19	22
	% Within gender	5.1	10.1	8.9
Fellow group member	Count	12	29	41
	% Within gender	20.3	15.4	16.6
Other colleague	Count	14	64	78
	% Within gender	23.7	34.0	31.6
Multiple parties	Count	19	52	71
	% Within gender	32.2	27.7	28.7
Total	Count	59	188	247
	% Within gender	100.0	100.0	100.0

gender-related measurement gap predicted in *H2* between the measurement of social misconduct based on behavioral items and based on the self-labeling approach, could only be determined for bullying. However, *H3* is not supported for bullying. The patterns that are shown in [Figs. 6](#) and [8](#) indicate that the individual items are associated with self-labeling to a varying degree for men and women. Neither in the case of bullying nor in that of sexual discrimination a statistically significant correlation was found between the gender-related interaction effects of the individual items and the frequency of their occurrence in the sample.

The model summary statistics ([Tables 20](#) and [22](#)) show that for both bullying and sexual discrimination, gender can only explain a very small fraction of the variance between respondents concerning self-labeling and that the specific presence of the self-reported behavioral items is much more relevant.

For the theoretical implications of this study presented below, it is also relevant that women on average mentioned experiencing statistically significantly more different behavioral items of bullying or sexual discrimination, and that women in the sample did not report experiencing bullying or sexual discrimination by supervisors more often, that is, in the context of a subordinate relationship.

Table 24 Interpretation of the Hypotheses.

Hypotheses	Factors on Self-labeling as having Experienced Workplace Misconduct	Hypothesis	Bullying	Sexual Discrimination and/or Harassment
1	Gender	More women than men self-label as having experienced workplace bullying and sexual discrimination	Supported	Supported
2	Gender, NAQ-rev items, SEQ-DoD short items	Even when controlling for the specific self-reported behaviors, women are still more likely to self-label as having experienced bullying and sexual discrimination at work	Supported	Not supported
3	Gender*NAQ-rev items, Gender*SEQ-DoD short items	Women are more likely to respond with self-labeling to those behaviors of workplace bullying and sexual discrimination that are more prevalent	Not supported	Not supported

Robustness

To assess the robustness of the results, it was checked whether:

- a) calculating with binary logistic regression models would have different implications for the hypotheses tested here;
- b) calculating with a sum index instead of the individual items would have other implications for the hypotheses tested here;
- c) effect directions and statistical significance of the interaction effects from model 4 (Figs. 6 and 8) differed from those of model 3;
- d) the results differ with a rescaling of the dependent variable;
- e) model 4 reacts sensitively to the inclusion of control variables; and
- f) gender as the moderation variable might be confounded by other variables.

The results of the robustness checks are described in more detail in Appendix 5 and all calculations can be found in the online appendix. In summary, almost all robustness checks came to the same results regarding *H1–H3* for bullying and sexual discrimination.

If a sum index had been used instead of the individual behavioral items (see Appendix 5b), the result for *H2* for sexual discrimination would have different implications: a sum index would have displayed a gender-related measurement gap. In this study, the behavioral items were preferred, since they depict individual experiences that might be perceived as sexual discrimination in more detail than a summation of them. Especially since calculating with the individual items is the prerequisite for testing *H3* in the first place and is thus the theoretical focus of this paper.

Rescaling the dependent variable also has important implications for the results of the study (see Appendix 5d). If only cases of persons who reported having experienced bullying or sexual discrimination at least monthly were coded with “1,” the corresponding number of cases of self-labeled persons in the sample would be greatly reduced. In the case of bullying, the measurement gap would disappear and thus *H2* would have to be falsified. In the case of sexual discrimination, the gender gap itself would disappear and *H1* would have to be falsified.

The researcher thus faces the challenge of choosing a scaling that is not unjustifiably sweeping and not overly precise (assuming, e.g., linear relationships between each item of the NAQ-rev and the SEQ-DoD short). This paper considers a scaling of whether, in principle, there was a specific experience of social misconduct in the workplace in the 12 months prior to the survey to be most appropriate.

Conclusions

In the concluding remarks, the theoretical and practical implications of the findings are discussed, limitations of the work are presented, and suggestions for further research are made.

Theoretical Implications

First and foremost, the present study joins the canon of those who support the predictions of social identity and social role theory based on empirical evidence on the marginalization of women in the research system. It could be shown that women in the Max Planck Society statistically significantly more frequently reported having been bullied and sexually discriminated against than men. This observation also holds true when considering the fact that women are more strongly represented among the non-scientific staff than among the scientific staff.

The validation of *H2* for bullying supports the theoretical considerations of Escartín et al. (2011) and Rosander et al. (2020) about different conceptions of bullying between men and women. According to the idea of “gendered conceptions,” which is only one possible approach to explain *H2* women and men interpret the individual bullying items differently and have different understandings of “being bullied.”¹⁷ However, the hypothetical assumption derived from social role theory, according to which men might have a greater tolerance for misconduct at work due to their more competitive socialization (*H3*), is not supported.

The individual items of the indices used here each have a considerable influence on the slope of the regression line shown in Fig. 7, that is, the relationship between the frequency of an item and its gender-related interaction effect. From this, it can be concluded that the size of the gender-related measurement gap measured by the comparison of self-labeling with a bullying index is also considerably influenced by the addition or omission of the items mentioned. In comparison, the results for *H2* and *H3* regarding sexual discrimination show greater robustness to the inclusion or omission of individual items due to the fundamentally very low frequencies of the SEQ-DoD short items.

¹⁷A first alternative explanation for the gender-related measurement gap would be that women experience a higher number of bullying items in everyday worklife. Due to the stronger individual aggregation of bullying experiences, even fewer “severe” items would be associated with a self-reporting as having been bullied among women. In fact, on average, women report having experienced statistically significantly more individual bullying items. However, this explanation is clearly contradicted by the fact that no gender-related measurement gap was found for sexual discrimination, although the difference in the average number of bullying items reported by women and men is many times greater.

A second alternative explanation for why *H2* could be validated for bullying would be that women and men experience the same items with different severity. Accordingly, for example, women would experience the item “Threats of violence or physical abuse, or actual abuse” (22) with a lower severity, for example, because they experience threats more often and the threats seem less binding than in men or because men experience actual abuse more often. This explanation cannot be ruled out based on the analyses conducted.

The study also partly provides arguments against competing theoretical approaches to explain the gender-related measurement gap in bullying. From the perspective of social power theory, women would therefore react “more intensively” to bullying experiences with self-labeling as having been bullied, since they are more often in a hierarchical relationship of subordination at work than men. This theory cannot be considered relevant here, as the women in the sample who described themselves as having been bullied did not report experiencing bullying from superiors more often than men (Table 23) and the integration of a hierarchy variable for scientific employees does not change the hypothesis assessments (Appendix 5f).

Another competing explanation was that the self-labeling of women as having been bullied is more strongly influenced by experiences of sexual discrimination, which are not measured by the NAQ-rev. In principle, this explanation cannot be ruled out. In the questionnaire-based survey, the NAQ-rev items and the self-assessment as having been bullied were collected first, followed by the SEQ-DoD items and the self-labeling as having been sexually discriminated against and/or harassed. The respondents were therefore not aware of the extent to which experiences of sexual discrimination were collected and thus it cannot be ruled out that in many cases they might have implicitly included experiences of sexual discrimination in their self-assessment as having been bullied.

For sexual discrimination, both *H2* and *H3* could not be validated. This means, firstly, that the result of Kriegh (2019), according to which female students attribute a higher severity to almost all types of sexual discrimination and harassment than male students, is not supported by the approach of this study. Using the methodology chosen here, a more complex pattern of the relationship between the individual SEQ-DoD items and the self-labeling as having experienced sexual discrimination becomes visible. Second, it was suggested that the findings of Rosen and Martin (2009) and Nielsen et al. (2010a) that men who self-label as having been sexually discriminated against have lower job satisfaction and health status than women who self-identify as being discriminated against also suggest a stricter conceptualization of sexual discrimination among men. This prediction appears to be incorrect.

Overall, the individual items of the SEQ-DoD short for the measurement of sexual discrimination show a significantly lower variance in their frequency distribution than the items of the NAQ-rev for measuring bullying. Experiences of sexual discrimination were very rarely reported in the sample studied, except for the item “... treated you differently because of your gender?” (1). It can only be speculated here that the scarcity of the corresponding items could be the main reason why *H2* and *H3* were falsified by the sample. The low frequencies also level out the significance of the existing gender-specific interaction effects. A complementary explanation for the non-existence of the measurement gap here would be that acts of sexual discrimination are equally “extra-ordinary” for the women and men in the sample due to their rarity. Socialization-related differences between men and women would therefore be

less relevant since the members of both genders equally classify experiences of sexual discrimination as unusual and “abnormal.”

Practical Implications

The gender-related interaction patterns in Figs. 6 and 8 give a diffuse picture. By adding or omitting individual items, the measurement gap concerning gender can be considerably influenced. In view of this, even cautious conclusions about a higher item threshold for men for self-labeling as affected by social misconduct at work or the conclusion of a higher sensitivity of women appear to be inadmissible oversimplifications.

By considering the items of the NAQ-rev and SEQ-DoD individually, the study also implies that the individual items have different severities. The regression parameters of the items in model 2 (Appendices 3 and 4) show, for example, that item 22 “Threats of violence...” is associated many times more strongly with self-labeling than item 1 “Some withholding information...” This suggests that concrete threats or experiences of violence are more quickly classified as bullying than more passive and discreet behavior.

For researchers, this points to the importance of extended robustness testing if they are conducting a study with a gender-related topic and apply a definition of bullying or sexual discrimination based on behavioral items (e.g., by tentatively excluding individual behavioral items). Given the highly variable item severity, all benchmarks based on an unweighted summation of items to classify individuals as having been bullied or sexually discriminated against should be critically questioned or rejected. Surprisingly, these benchmarks are widely used in research practice. Leymann recommends being affected by at least one negative act weekly over a six-month period as a benchmark (Nielsen et al., 2009) whereas in Mikelsen and Einarsen it is at least two negative acts (ibidem). Notelaers and Einarsen (2013) define a series of cutoff scores based on the addition of item values.

From the author’s point of view (see also Salin and Hoel, 2013), a self-labeling approach is preferable, as it allows a more holistic assessment and classification of negative actions than an item threshold. The items can be complementary and might be weighted by their frequency or their relative contribution to self-labeling as having experienced workplace misconduct. Furthermore, clustering methods (Nielsen et al., 2010a) are also preferable to benchmarking by addition.

In terms of practical action, the study encourages research managers to examine each reported case of social misconduct in detail. According to this study, women are more likely than men to respond to more frequent and less severe bullying items with a self-labeling as having been bullied, but women also report, on average, a higher number of different social transgressions in their daily work lives.

Ultimately, the interaction effects between gender and the self-reported experiences of social misconduct identified here are too complex in their patterns and the identified interaction effects in the case of bullying are too weak or – in the case of sexual discrimination – are too rare to understand them as confirmation of practical relevant differences in sensitivity to workplace misconduct between women

and men. Research management should thus be alert to and avoid gender stereotypes in conflict resolution processes. As the theoretical literature on gaslighting and victim blaming cited at the beginning implies, such expressed prejudices are more likely to serve – from a perpetrator or management perspective – to relativize, negate, or manipulate the perceptions of those affected and to strengthen one's own conflict position or justify inaction.

Finally, those affected by social misconduct in the workplace are advised to conscientiously record all conflict-related experiences to be able to point out the regularity of the incidents and their systematic character in case they are accused of complaining about incidents that are allegedly not severe enough.

Limitations

The study has several limitations that especially seem worth mentioning. Firstly, the study exclusively examined scientific and non-scientific personnel in a large German research organization. The MPG is focused on scientific qualification and, although the scientific personnel has no obligation to teach, many of the researchers also teach at a university. This also applies to PhD students, for example in the context of the International Max Planck Research Schools organized by MPG institutes in cooperation universities. However, as the questionnaire only asked about experiences of social misconduct at work in the MPG, in this respect the sample used here presumably differs from a sample from university research regarding experiences of bullying and sexual discrimination.

Secondly, a methodological strength and at the same time a limitation of the study is that, unlike previous studies, the items of the NAQ-rev and the SEQ-DoD were not aggregated into one or more indices, but were analyzed individually. With the consideration of the different interaction effects, this leads to an unusually high number of predictors in the regression equations (e.g., model 4 on bullying has 68 predictors). With regression models that include a large number of predictors, the problem of multicollinearity and overfitting can arise. Critical multicollinearity is not present, as shown above. Overfitting can occur if the sample is too small, especially if the number of predictors is high. For an appropriate ratio of the sample size to the number of predictors, a (not uncontroversial) rule of thumb of at least 10 events per predictor has been established (Riley et al., 2020). This rule of thumb is fulfilled for all predictors of the bullying models. For the predictors of sexual discrimination, however, the rule of thumb is not consistently met. The items measuring the sexual coercion subconstruct have a lower number of events, especially in the interactions with gender and scientific/non-scientific. Overfitting can lead to overly optimistic estimates (Riley et al., 2020), which can be an explanation for the large size of the interaction effects of the sexual coercion items shown in Fig. 8. However, precisely because the items occur so rarely, their influence on the validity of *H2* and *H3*, that is, the results on the existence of the gender-related measurement gap and the correlation of the gender-related interaction effects with the frequency of an item, is to be assessed as low.

A third limitation is the number of control variables used. While consideration of the hierarchical position could be informative in measuring respondents' tendency to self-label as having been bullied or sexually discriminated against, this variable was only collected and analyzed here for scientific employees.

Fourth, a limitation is that self-labeling in experiences of sexual harassment and sexual discrimination was measured using a double-barreled question. The problem is discussed in detail in the Research Approach section when introducing the variables. The question wording limits the interpretability of the study as it is not clear whether the respondents answered the self-labeling question in the affirmative because of experiences of sexual discrimination or sexual harassment or both. However, this does not necessarily call into question the validity of the results, as has been discussed. Overall, it was shown that the estimates of $H3$ based on the distribution of interaction effects by effect frequency (Fig. 9) are very robust due to the overall low effect frequencies.

Finally, it should be noted that the present study examined gender differences in self-identification as having been bullied or sexually discriminated against, but not the willingness of those affected to report it or whether the self-reported acts of social misconduct actually took place. It cannot be ruled out that there are gender differences in official reporting and complaints and that there is a considerable gray area between perceived and factual misconduct.

Directions for Further Research

Three possible starting points for future research are highlighted here. Firstly, it is noteworthy that a very large proportion of unexplained variance remains in the regression models (R^2), that is, the behavioral items are only able to capture the self-labeling of a person as having been bullied or sexually discriminated against to a very limited extent. This indicates that the currently established scales of the NAQ and the SEQ leave many blind spots if one wants to explain a person's self-assessment based on them and that alternative scales could potentially have better results in this context. It also suggests that scales should be developed that capture the regularity, severity, or power imbalance of a conflict situation at the workplace in a more comprehensive way.

Secondly, the interaction analysis of gender with the individual items showed that a whole range of forms of social misconduct is more often assessed as bullying or sexual discrimination by women than by men and vice versa. These patterns could only be touched on superficially here and could be better justified theoretically using expert interviews with psychological service personnel at research institutions or focus groups.

Thirdly, it could be assumed that awareness of sexual discrimination in particular increases with increasing educational attainment, as in these cases the abstract concept of equality is more easily adapted and transferred to everyday working life (see relative deprivation theory). In this respect, a higher awareness of sexual discrimination would be assumed among scientific personnel. As can be seen from Appendix 3, non-scientific employees are indeed less likely to report

having been sexually discriminated against, but the status-related interaction effects in the behavioral items are similarly diffuse regarding the gender of the respondents. As with the gender interactions, a preliminary evaluation of these results suggests an influence of the different situational circumstances between scientists and non-scientists rather than an effect of their educational level. More in-depth research on how the context of scientists and non-scientists' employment shapes their experiences of sexual discrimination seems promising.

Acknowledgments

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Appendices

1. Descriptive Statistics for the Bullying Regression Model

Table A1. Descriptive Statistics of Dependent, Independent, and Control Variables in the Regression Model for Bullying.

Variable Name	Mean	SD	N(1)	N
Dependent Variable				
Self-ascription to occasional or more frequent bullying, binary	0.083	0.276	486	5,831
Independent Variables				
Please indicate your gender	0.463	0.499	2,697	5,831
Scientific or non-scientific staff	0.573	0.495	3,339	5,831
[Someone withholding information, which affects your performance]	0.562	0.496	3,279	5,831
[Being humiliated or ridiculed in connection with your work]	0.181	0.385	1,058	5,831
[Being ordered to do work below your level of competence]	0.490	0.500	2,859	5,831
[Having key areas of responsibility removed or replaced with more trivial or unpleasant tasks]	0.209	0.407	1,218	5,831
[Others spreading gossip or rumors about you]	0.283	0.451	1,651	5,831
[Being ignored or excluded]	0.289	0.453	1,682	5,831
[Having insulting or offensive remarks made about your person, your views, or your private life]	0.141	0.348	821	5,831
[Being shouted at or being the target of spontaneous anger]	0.165	0.371	960	5,831
[Intimidating behavior such as finger-pointing, invasion of personal space, shoving, or having your way blocked]	0.046	0.209	267	5,831
[Hints or signals from others that you should quit your job]	0.080	0.271	466	5,831

(Continued)

Table A1. (*Continued*)

Variable Name	Mean	SD	N(1)	N
[Unfair repeated reminders of your errors or mistakes]	0.153	0.360	894	5,831
[Being ignored or facing a hostile reaction when you approach a coworker or group of coworkers]	0.176	0.381	1,024	5,831
[Unjustified persistent criticism of your errors or mistakes]	0.116	0.320	677	5,831
[Having your opinions ignored]	0.441	0.497	2,569	5,831
[Being the target of practical jokes by people with whom you don't get along]	0.076	0.265	444	5,831
[Being given tasks with unreasonable deadlines]	0.278	0.448	1,620	5,831
[Having unjustified allegations made against you]	0.132	0.339	770	5,831
[Excessive monitoring of your work]	0.170	0.376	992	5,831
[Pressure not to claim something to which you are rightfully entitled (e.g., sick leave, parental leave, holiday)]	0.121	0.326	706	5,831
[Being the subject of excessive teasing and sarcasm]	0.104	0.305	604	5,831
[Being given an unmanageable workload]	0.289	0.453	1,687	5,831
[Threats of violence or physical abuse, or actual abuse]	0.007	0.080	38	5,831
Female*[Someone withholding information, which affects your performance]	0.281	0.449	1,636	5,831
Female*[Being ordered to do work below your level of competence]	0.228	0.419	1,328	5,831
Female*[Having your opinions ignored]	0.208	0.406	1,213	5,831
Female*[Being given tasks with unreasonable deadlines]	0.126	0.332	736	5,831
Female*[Excessive monitoring of your work]	0.085	0.278	494	5,831
Female*[Pressure not to claim something to which you are rightfully entitled (e.g., sick leave, parental leave, holiday)]	0.061	0.239	355	5,831

Table A1. (Continued)

Variable Name	Mean	SD	N(1)	N
Female*[Being given an unmanageable workload]	0.143	0.350	834	5,831
Female*[Being humiliated or ridiculed in connection with your work]	0.092	0.289	536	5,831
Female*[Having key areas of responsibility removed or replaced with more trivial or unpleasant tasks]	0.099	0.298	575	5,831
Female*[Others spreading gossip or rumors about you]	0.138	0.345	804	5,831
Female*[Being ignored or excluded]	0.132	0.338	768	5,831
Female*[Having insulting or offensive remarks made about your person, your views, or your private life]	0.074	0.262	433	5,831
Female*[Hints or signals from others that you should quit your job]	0.039	0.193	227	5,831
Female*[Unfair repeated reminders of your errors or mistakes]	0.074	0.262	432	5,831
Female*[Being ignored or facing a hostile reaction when you approach a coworker or group of coworkers]	0.088	0.283	512	5,831
Female*[Unjustified persistent criticism of your errors or mistakes]	0.058	0.233	335	5,831
Female*[Being the target of practical jokes by people with whom you don't get along]	0.038	0.192	223	5,831
Female*[Having unjustified allegations made against you]	0.065	0.247	381	5,831
Female*[Being the subject of excessive teasing and sarcasm]	0.051	0.220	296	5,831
Female*[Being shouted at or being the target of spontaneous anger]	0.085	0.280	498	5,831
Female*[Intimidating behavior such as finger-pointing, invasion of personal space, shoving, or having your way blocked]	0.024	0.154	142	5,831
Female*[Threats of violence or physical abuse, or actual abuse]	0.002	0.049	14	5,831
Scientist*[Someone withholding information, which affects your performance]	0.275	0.446	1,602	5,831

(Continued)

Table A1. (Continued)

Variable Name	Mean	SD	N(1)	N
Scientist*[Being ordered to do work below your level of competence]	0.241	0.427	1,403	5,831
Scientist*[Having your opinions ignored]	0.242	0.429	1,413	5,831
Scientist*[Being given tasks with unreasonable deadlines]	0.161	0.367	936	5,831
Scientist*[Excessive monitoring of your work]	0.085	0.279	495	5,831
Scientist*[Pressure not to claim something to which you are rightfully entitled (e.g., sick leave, parental leave, holiday)]	0.077	0.266	447	5,831
Scientist*[Being given an unmanageable workload]	0.156	0.363	910	5,831
Scientist*[Being humiliated or ridiculed in connection with your work]	0.101	0.302	590	5,831
Scientist*[Having key areas of responsibility removed or replaced with more trivial or unpleasant tasks]	0.103	0.304	599	5,831
Scientist*[Others spreading gossip or rumors about you]	0.147	0.354	855	5,831
Scientist*[Being ignored or excluded]	0.179	0.383	1,041	5,831
Scientist*[Having insulting or offensive remarks made about your person, your views, or your private life]	0.083	0.275	482	5,831
Scientist*[Hints or signals from others that you should quit your job]	0.050	0.218	293	5,831
Scientist*[Unfair repeated reminders of your errors or mistakes]	0.079	0.269	459	5,831
Scientist*[Being ignored or facing a hostile reaction when you approach a coworker or group of coworkers]	0.100	0.300	585	5,831
Scientist*[Unjustified persistent criticism of your errors or mistakes]	0.059	0.236	346	5,831
Scientist*[Being the target of practical jokes by people with whom you don't get along]	0.037	0.190	218	5,831
Scientist*[Having unjustified allegations made against you]	0.064	0.244	372	5,831

Table A1. (Continued)

Variable Name	Mean	SD	N(1)	N
Scientist*[Being the subject of excessive teasing and sarcasm]	0.054	0.227	317	5,831
Scientist*[Being shouted at or being the target of spontaneous anger]	0.095	0.293	554	5,831
Scientist*[Intimidating behavior such as finger-pointing, invasion of personal space, shoving, or having your way blocked]	0.029	0.167	168	5,831
Scientist*[Threats of violence or physical abuse, or actual abuse]	0.004	0.063	23	5,831

2. Descriptive Statistics for the Sexual Discrimination Regression Model

Table A2. Descriptive Statistics of Dependent, Independent, and Control variables in the Regression Model for Sexual Discrimination.

Variable Name	Mean	SD	N(1)	N
Dependent Variable				
Self-ascription to occasional or more frequent sexual discrimination, binary	0.036	0.188	255	6,987
Independent Variables				
Please indicate your gender	0.480	0.500	3,352	6,987
Scientific or non-scientific staff	0.544	0.498	3,800	6,987
[... treated you differently because of your gender?]	0.189	0.392	1,321	6,987
[... displayed, used, or distributed sexist or sexually suggestive materials?]	0.039	0.193	271	6,987
[... made personally offensive sexist remarks?]	0.063	0.242	437	6,987
[... put you down or was/were condescending to you because of your gender?]	0.079	0.269	549	6,987
[... repeatedly told sexual stories or jokes that were offensive to you?]	0.042	0.200	292	6,987

(Continued)

Table A2. (Continued)

Variable Name	Mean	SD	N(1)	N
[... made unwelcome attempts to draw you into a discussion on sexual matters?]	0.028	0.166	198	6,987
[... made offensive remarks about your appearance, body, or sexual activities?]	0.053	0.223	367	6,987
[... made gestures or used body language of a sexual nature which embarrassed or offended you?]	0.015	0.122	105	6,987
[... made unwanted attempts to establish a romantic or sexual relationship with you?]	0.022	0.147	155	6,987
[... continued to ask you out on dates (drinks, dinner, etc.), even though you said "No"?]	0.014	0.116	95	6,987
[... touched you in a way that made you feel uncomfortable?]	0.028	0.165	195	6,987
[... made unwanted attempts to stroke, fondle, or kiss you?]	0.007	0.083	49	6,987
[... made you feel threatened with some sort of retaliation for not being sexually cooperative?]	0.002	0.040	11	6,987
[... treated you badly for refusing to have sex?]	0.001	0.038	10	6,987
[... implied that you would be promoted faster or given better treatment or be otherwise rewarded if you engage in sexual behavior?]	0.001	0.034	8	6,987
Female*[... treated you differently because of your gender?]	0.141	0.348	982	6,987
Female*[... displayed, used, or distributed sexist or sexually suggestive materials?]	0.018	0.134	128	6,987
Female*[... made personally offensive sexist remarks?]	0.039	0.193	272	6,987
Female*[... put you down or was/were condescending to you because of your gender?]	0.069	0.254	483	6,987
Female*[... repeatedly told sexual stories or jokes that were offensive to you?]	0.025	0.157	177	6,987
Female*[... made unwelcome attempts to draw you into a discussion on sexual matters?]	0.017	0.129	118	6,987

Table A2. (Continued)

Variable Name	Mean	SD	N(1)	N
Female*[... made offensive remarks about your appearance, body, or sexual activities?]	0.032	0.175	220	6,987
Female*[... made gestures or used body language of a sexual nature which embarrassed or offended you?]	0.010	0.098	68	6,987
Female*[... made unwanted attempts to establish a romantic or sexual relationship with you?]	0.016	0.127	114	6,987
Female*[... continued to ask you out on dates (drinks, dinner, etc.), even though you said "No"?]	0.010	0.100	70	6,987
Female*[... touched you in a way that made you feel uncomfortable?]	0.018	0.134	128	6,987
Female*[... made unwanted attempts to stroke, fondle, or kiss you?]	0.005	0.073	37	6,987
Female*[... made you feel threatened with some sort of retaliation for not being sexually cooperative?]	0.001	0.038	10	6,987
Female*[... treated you badly for refusing to have sex?]	0.001	0.032	7	6,987
Female*[... implied that you would be promoted faster or given better treatment or be otherwise rewarded if you engage in sexual behavior?]	0.001	0.029	6	6,987
Scientist*[... treated you differently because of your gender?]	0.116	0.320	808	6,987
Scientist*[... displayed, used, or distributed sexist or sexually suggestive materials?]	0.025	0.155	173	6,987
Scientist*[... made personally offensive sexist remarks?]	0.045	0.208	316	6,987
Scientist*[... put you down or was/were condescending to you because of your gender?]	0.046	0.209	319	6,987
Scientist*[... repeatedly told sexual stories or jokes that were offensive to you?]	0.026	0.158	179	6,987
Scientist*[... made unwelcome attempts to draw you into a discussion on sexual matters?]	0.016	0.126	112	6,987

(Continued)

Table A2. (Continued)

Variable Name	Mean	SD	N(1)	N
Scientist*[... made offensive remarks about your appearance, body, or sexual activities?]	0.030	0.171	211	6,987
Scientist*[... made gestures or used body language of a sexual nature which embarrassed or offended you?]	0.011	0.103	75	6,987
Scientist*[... made unwanted attempts to establish a romantic or sexual relationship with you?]	0.014	0.119	100	6,987
Scientist*[... continued to ask you out on dates (drinks, dinner, etc.), even though you said "No"?]	0.008	0.089	56	6,987
Scientist*[... touched you in a way that made you feel uncomfortable?]	0.014	0.117	97	6,987
Scientist*[... made unwanted attempts to stroke, fondle, or kiss you?]	0.004	0.060	25	6,987
Scientist*[... made you feel threatened with some sort of retaliation for not being sexually cooperative?]	0.001	0.029	6	6,987
Scientist*[... treated you badly for refusing to have sex?]	0.001	0.036	9	6,987
Scientist*[... implied that you would be promoted faster or given better treatment or be otherwise rewarded if you engage in sexual behavior?]	0.001	0.029	6	6,987

3. Parameter Estimates of Regression for Self-Ascription to Bullying

Table A3. Parameter Estimates for Self-ascription to Occasional or More Frequent Bullying (Yes/No).

Model	Unstandardized Coefficients		t	Sig.	95% Confidence Interval for B	
	B	SE			Lower Bound	Upper Bound
1 (Constant)	0.083	0.007	11.965	0.000	0.069	0.097
Please indicate your gender	0.030	0.007	4.093	0.000	0.016	0.045
Scientific or non-scientific staff with employment contract	-0.024	0.007	-3.220	0.001	-0.038	-0.009
2 (Constant)	-0.003	0.007	-0.370	0.711	-0.017	0.011
Please indicate your gender	0.017	0.006	2.936	0.003	0.006	0.028
Scientific or non-scientific staff with employment contract	-0.019	0.006	-3.139	0.002	-0.031	-0.007
[Someone withholding information, which affects your performance]	-0.008	0.007	-1.169	0.242	-0.021	0.005
[Being humiliated or ridiculed in connection with your work]	0.054	0.009	5.764	0.000	0.036	0.073
[Being ordered to do work below your level of competence]	-0.012	0.006	-1.914	0.056	-0.024	0.000
[Having key areas of responsibility removed or replaced with more trivial or unpleasant tasks]	0.054	0.008	6.555	0.000	0.038	0.070

(Continued)

Table A3. (Continued)

Model	Unstandardized Coefficients		<i>t</i>	Sig.	95% Confidence Interval for <i>B</i>	
	<i>B</i>	SE			Lower Bound	Upper Bound
[Others spreading gossip or rumors about you]	0.027	0.008	3.442	0.001	0.011	0.042
[Being ignored or excluded]	0.014	0.008	1.791	0.073	-0.001	0.030
[Having insulting or offensive remarks made about your person, your views, or your private life]	0.078	0.011	7.277	0.000	0.057	0.099
[Being shouted at or being the target of spontaneous anger]	0.025	0.009	2.705	0.007	0.007	0.043
[Intimidating behavior such as finger-pointing, invasion of personal space, showing, or having your way blocked]	0.126	0.016	8.055	0.000	0.095	0.156
[Hints or signals from others that you should quit your job]	0.120	0.012	9.822	0.000	0.096	0.144
[Unfair repeated reminders of your errors or mistakes]	0.008	0.011	0.765	0.444	-0.013	0.029
[Being ignored or facing a hostile reaction when you approach a coworker or group of coworkers]	0.054	0.009	5.892	0.000	0.036	0.072
[Unjustified persistent criticism of your errors or mistakes]	0.073	0.013	5.817	0.000	0.048	0.097

[Having your opinions ignored]	-0.016	0.007	-2.350	0.019	-0.030	-0.003
[Being the target of practical jokes by people with whom you don't get along]	0.051	0.012	4.228	0.000	0.028	0.075
[Being given tasks with unreasonable deadlines]	-0.014	0.008	-1.805	0.071	-0.029	0.001
[Having unjustified allegations made against you]	0.119	0.011	11.158	0.000	0.098	0.140
[Excessive monitoring of your work]	0.002	0.009	0.229	0.819	-0.015	0.020
[Pressure not to claim something to which you are rightfully entitled (e.g., sick leave, parental leave, holiday)]	0.010	0.010	0.988	0.323	-0.009	0.029
[Being the subject of excessive teasing and sarcasm]	0.071	0.012	6.144	0.000	0.048	0.093
[Being given an unmanageable workload]	-0.005	0.008	-0.652	0.514	-0.020	0.010
[Threats of violence or physical abuse, or actual abuse]	0.154	0.037	4.172	0.000	0.081	0.226
3 (Constant)	0.010	0.008	1.260	0.208	-0.006	0.026
Please indicate your gender	-0.010	0.010	-0.985	0.325	-0.029	0.010
Scientific or non-scientific staff with employment contract	-0.021	0.006	-3.542	0.000	-0.033	-0.010
[Someone withholding information, which affects your performance]	-0.014	0.009	-1.556	0.120	-0.032	0.004

(Continued)

Table A3. (Continued)

Model	Unstandardized Coefficients		t	Sig.	95% Confidence Interval for B	
	B	SE			Lower Bound	Upper Bound
[Being humiliated or ridiculed in connection with your work]	0.026	0.013	1.958	0.050	0.000	0.052
[Being ordered to do work below your level of competence]	0.002	0.009	0.229	0.819	-0.015	0.019
[Having key areas of responsibility removed or replaced with more trivial or unpleasant tasks]	0.053	0.011	4.668	0.000	0.030	0.075
[Others spreading gossip or rumors about you]	0.016	0.011	1.487	0.137	-0.005	0.036
[Being ignored or excluded]	0.000	0.011	-0.001	1.000	-0.021	0.021
[Having insulting or offensive remarks made about your person, your views, or your private life]	0.096	0.015	6.266	0.000	0.066	0.125
[Being shouted at or being the target of spontaneous anger]	0.053	0.013	4.153	0.000	0.028	0.079
[Intimidating behavior such as finger-pointing, invasion of personal space, shoving, or having your way blocked]	0.096	0.023	4.204	0.000	0.051	0.140
[Hints or signals from others that you should quit your job]	0.125	0.017	7.299	0.000	0.091	0.158

[Unfair repeated reminders of your errors or mistakes]	-0.011	0.015	-0.731	0.465	-0.040	0.018
[Being ignored or facing a hostile reaction when you approach a coworker or group of coworkers]	0.071	0.013	5.553	0.000	0.046	0.097
[Unjustified persistent criticism of your errors or mistakes]	0.042	0.017	2.487	0.013	0.009	0.075
[Having your opinions ignored]	-0.016	0.010	-1.683	0.092	-0.035	0.003
[Being the target of practical jokes by people with whom you don't get along]	0.055	0.017	3.212	.001	0.021	0.088
[Being given tasks with unreasonable deadlines]	-0.011	0.010	-1.099	0.272	-0.032	0.009
[Having unjustified allegations made against you]	0.092	0.015	6.301	0.000	0.063	0.120
[Excessive monitoring of your work]	0.001	0.012	0.104	0.917	-0.023	0.025
[Pressure not to claim something to which you are rightfully entitled (e.g., sick leave, parental leave, holiday)]	-0.010	0.014	-0.721	0.471	-0.037	0.017
[Being the subject of excessive teasing and sarcasm]	0.094	0.016	5.995	0.000	0.063	0.125
[Being given an unmanageable workload]	-0.017	0.011	-1.606	0.108	-0.038	0.004
[Threats of violence or physical abuse, or actual abuse]	0.260	0.047	5.533	0.000	0.168	0.353

(Continued)

Table A3. (Continued)

Model	Unstandardized Coefficients		t	Sig.	95% Confidence Interval for B	
	B	SE			Lower Bound	Upper Bound
Female*[Someone withholding information, which affects your performance]	0.014	0.013	1.078	0.281	-0.011	0.039
Female*[Being ordered to do work below your level of competence]	-0.027	0.012	-2.164	0.030	-0.051	-0.003
Female*[Having your opinions ignored]	-0.001	0.014	-0.057	0.955	-0.028	0.027
Female*[Being given tasks with unreasonable deadlines]	-0.005	0.015	-0.358	0.721	-0.036	0.025
Female*[Excessive monitoring of your work]	-0.002	0.018	-0.125	0.901	-0.037	0.033
Female*[Pressure not to claim something to which you are rightfully entitled (e.g., sick leave, parental leave, holiday)]	0.040	0.019	2.060	0.039	0.002	0.078
Female*[Being given an unmanageable workload]	0.028	0.015	1.851	0.064	-0.002	0.058
Female*[Being humiliated or ridiculed in connection with your work]	0.056	0.019	2.969	0.003	0.019	0.092
Female*[Having key areas of responsibility removed or replaced with more trivial or unpleasant tasks]	0.002	0.016	0.100	0.920	-0.031	0.034
Female*[Others spreading gossip or rumors about you]	0.021	0.015	1.398	0.162	-0.009	0.052

Female*[Being ignored or excluded]	0.037	0.016	2.385	0.017	0.007	0.068
Female*[Having insulting or offensive remarks made about your person, your views, or your private life]	-0.037	0.021	-1.725	0.085	-0.079	0.005
Female*[Hints or signals from others that you should quit your job]	-0.005	0.024	-0.187	0.852	-0.052	0.043
Female*[Unfair repeated reminders of your errors or mistakes]	0.037	0.022	1.736	0.083	-0.005	0.080
Female*[Being ignored or facing a hostile reaction when you approach a coworker or group of coworkers]	-0.036	0.018	-1.949	0.051	-0.072	0.000
Female*[Un]justified persistent criticism of your errors or mistakes]	0.066	0.025	2.627	0.009	0.017	0.115
Female*[Being the target of practical jokes by people with whom you don't get along]	-0.003	0.024	-0.119	0.905	-0.050	0.045
Female*[Having unjustified allegations made against you]	0.052	0.021	2.462	0.014	0.011	0.094
Female*[Being the subject of excessive teasing and sarcasm]	-0.053	0.023	-2.302	0.021	-0.098	-0.008
Female*[Being shouted at or being the target of spontaneous anger]	-0.060	0.018	-3.312	0.001	-0.096	-0.025
Female*[Intimidating behavior such as finger-pointing, invasion of personal space, shoving, or having your way blocked]	0.049	0.031	1.573	0.116	-0.012	0.110

(Continued)

Table A3. (Continued)

Model	Unstandardized Coefficients		t	Sig.	95% Confidence Interval for B	
	B	SE			Lower Bound	Upper Bound
Female*[Threats of violence or physical abuse, or actual abuse]	-0.237	0.075	-3.136	0.002	-0.384	-0.089
4 (Constant)	0.002	0.010	0.232	0.817	-0.018	0.022
Please indicate your gender	-0.005	0.010	-0.517	0.605	-0.025	0.014
Scientific or non-scientific staff with employment contract	-0.007	0.011	-0.695	0.487	-0.028	0.013
[Someone withholding information, which affects your performance]	-0.027	0.013	-2.124	0.034	-0.052	-0.002
[Being humiliated or ridiculed in connection with your work]	0.042	0.018	2.366	0.018	0.007	0.077
[Being ordered to do work below your level of competence]	0.007	0.012	0.557	0.578	-0.017	0.030
[Having key areas of responsibility removed or replaced with more trivial or unpleasant tasks]	0.045	0.015	3.016	0.003	0.016	0.074
[Others spreading gossip or rumors about you]	0.038	0.014	2.681	0.007	0.010	0.066
[Being ignored or excluded]	0.036	0.016	2.283	0.022	0.005	0.066
[Having insulting or offensive remarks made about your person, your views, or your private life]	0.080	0.021	3.709	0.000	0.038	0.122

[Being shouted at or being the target of spontaneous anger]	0.030	0.018	1.671	0.095	-0.005	0.065
[Intimidating behavior such as finger-pointing, invasion of personal space, showing, or having your way blocked]	0.142	0.031	4.535	0.000	0.080	0.203
[Hints or signals from others that you should quit your job]	0.191	0.024	7.810	0.000	0.143	0.239
[Unfair repeated reminders of your errors or mistakes]	-0.040	0.020	-1.999	0.046	-0.079	-0.001
[Being ignored or facing a hostile reaction when you approach a coworker or group of coworkers]	0.128	0.018	7.226	0.000	0.094	0.163
[Unjustified persistent criticism of your errors or mistakes]	0.027	0.023	1.194	0.232	-0.018	0.072
[Having your opinions ignored]	-0.032	0.013	-2.415	0.016	-0.059	-0.006
[Being the target of practical jokes by people with whom you don't get along]	0.038	0.021	1.788	0.074	-0.004	0.079
[Being given tasks with unreasonable deadlines]	-0.005	0.014	-0.326	0.744	-0.033	0.023
[Having unjustified allegations made against you]	0.042	0.019	2.246	0.025	0.005	0.079

(Continued)

Table A3. (Continued)

Model	Unstandardized Coefficients		t	Sig.	95% Confidence Interval for B	
	B	SE			Lower Bound	Upper Bound
[Excessive monitoring of your work]	0.003	0.016	0.185	0.853	-0.029	0.035
[Pressure not to claim something to which you are rightfully entitled (e.g., sick leave, parental leave, holiday)]	-0.002	0.019	-0.098	0.922	-0.039	0.036
[Being the subject of excessive teasing and sarcasm]	0.097	0.021	4.565	0.000	0.055	0.138
[Being given an unmanageable workload]	-0.004	0.014	-0.296	0.767	-0.032	0.024
[Threats of violence or physical abuse, or actual abuse]	0.302	0.064	4.715	0.000	0.177	0.428
Female*[Someone withholding information, which affects your performance]	0.018	0.013	1.348	0.178	-0.008	0.043
Female*[Being ordered to do work below your level of competence]	-0.030	0.013	-2.383	0.017	-0.055	-0.005
Female*[Having your opinions ignored]	0.003	0.014	0.197	0.844	-0.025	0.030
Female*[Being given tasks with unreasonable deadlines]	-0.008	0.015	-0.510	0.610	-0.038	0.022
Female*[Excessive monitoring of your work]	-0.003	0.018	-0.173	0.863	-0.038	0.032
Female*[Pressure not to claim something to which you are rightfully entitled (e.g., sick leave, parental leave, holiday)]	0.035	0.019	1.825	0.068	-0.003	0.073

Female*[Being given an unmanageable workload]	0.024	0.015	1.591	0.112	-0.006	0.054
Female*[Being humiliated or ridiculed in connection with your work]	0.050	0.019	2.639	0.008	0.013	0.086
Female*[Having key areas of responsibility removed or replaced with more trivial or unpleasant tasks]	0.005	0.017	0.312	0.755	-0.027	0.038
Female*[Others spreading gossip or rumors about you]	0.017	0.015	1.077	0.282	-0.014	0.047
Female*[Being ignored or excluded]	0.030	0.016	1.911	0.056	-0.001	0.061
Female*[Having insulting or offensive remarks made about your person, your views, or your private life]	-0.026	0.021	-1.213	0.225	-0.068	0.016
Female*[Hints or signals from others that you should quit your job]	-0.007	0.024	-0.297	0.766	-0.055	0.040
Female*[Unfair repeated reminders of your errors or mistakes]	0.049	0.022	2.261	0.024	0.007	0.092
Female*[Being ignored or facing a hostile reaction when you approach a coworker or group of coworkers]	-0.046	0.018	-2.491	0.013	-0.082	-0.010
Female*[Unjustified persistent criticism of your errors or mistakes]	0.069	0.025	2.735	0.006	0.020	0.118

(Continued)

Table A3. (Continued)

Model	Unstandardized Coefficients		<i>t</i>	Sig.	95% Confidence Interval for <i>B</i>	
	<i>B</i>	SE			Lower Bound	Upper Bound
Female*[Being the target of practical jokes by people with whom you don't get along]	0.005	0.024	0.197	0.844	-0.043	0.052
Female*[Having unjustified allegations made against you]	0.058	0.021	2.733	0.006	0.016	0.099
Female*[Being the subject of excessive teasing and sarcasm]	-0.063	0.023	-2.773	0.006	-0.108	-0.019
Female*[Being shouted at or being the target of spontaneous anger]	-0.056	0.018	-3.023	0.003	-0.092	-0.020
Female*[Intimidating behavior such as finger-pointing, invasion of personal space, shoving, or having your way blocked]	0.039	0.031	1.255	0.210	-0.022	0.100
Female*[Threats of violence or physical abuse, or actual abuse]	-0.216	0.075	-2.869	0.004	-0.364	-0.069
Scientist*[Someone withholding information, which affects your performance]	0.022	0.013	1.636	0.102	-0.004	0.049
Scientist*[Being ordered to do work below your level of competence]	-0.007	0.013	-0.527	0.598	-0.032	0.018
Scientist*[Having your opinions ignored]	0.026	0.014	1.818	0.069	-0.002	0.054
Scientist*[Being given tasks with unreasonable deadlines]	-0.010	0.016	-0.616	0.538	-0.040	0.021

Scientist*[Excessive monitoring of your work]	-0.005	0.018	-0.262	0.794	-0.040	0.030
Scientist*[Pressure not to claim something to which you are rightfully entitled (e.g., sick leave, parental leave, holiday)]	-0.010	0.020	-0.499	0.618	-0.049	0.029
Scientist*[Being given an unmanageable workload]	-0.019	0.015	-1.211	0.226	-0.049	0.012
Scientist*[Being humiliated or ridiculed in connection with your work]	-0.026	0.019	-1.364	0.173	-0.063	0.011
Scientist*[Having key areas of responsibility removed or replaced with more trivial or unpleasant tasks]	0.004	0.017	0.255	0.799	-0.028	0.037
Scientist*[Others spreading gossip or rumors about you]	-0.038	0.016	-2.458	0.014	-0.069	-0.008
Scientist*[Being ignored or excluded]	-0.051	0.016	-3.089	0.002	-0.083	-0.019
Scientist*[Having insulting or offensive remarks made about your person, your views, or your private life]	0.020	0.022	0.896	0.370	-0.024	0.063
Scientist*[Hints or signals from others that you should quit your job]	-0.097	0.025	-3.797	0.000	-0.147	-0.047
Scientist*[Unfair repeated reminders of your errors or mistakes]	0.042	0.022	1.949	0.051	0.000	0.085

(Continued)

Table A3. (Continued)

Model	Unstandardized Coefficients		<i>t</i>	Sig.	95% Confidence Interval for <i>B</i>	
	<i>B</i>	SE			Lower Bound	Upper Bound
Scientist*[Being ignored or facing a hostile reaction when you approach a coworker or group of coworkers]	-0.090	0.019	-4.797	0.000	-0.127	-0.053
Scientist*[Unjustified persistent criticism of your errors or mistakes]	0.020	0.025	0.812	0.417	-0.029	0.070
Scientist*[Being the target of practical jokes by people with whom you don't get along]	0.026	0.024	1.080	0.280	-0.021	0.074
Scientist*[Having unjustified allegations made against you]	0.082	0.021	3.874	0.000	0.041	0.124
Scientist*[Being the subject of excessive teasing and sarcasm]	0.001	0.023	0.030	0.976	-0.045	0.046
Scientist*[Being shouted at or being the target of spontaneous anger]	0.034	0.019	1.829	0.067	-0.002	0.071
Scientist*[Intimidating behavior such as finger-pointing, invasion of personal space, shoving, or having your way blocked]	-0.068	0.032	-2.111	0.035	-0.131	-0.005
Scientist*[Threats of violence or physical abuse, or actual abuse]	-0.085	0.075	-1.132	0.258	-0.231	0.062

4. Parameter Estimates of Regression for Self-Ascription to Sexual Discrimination

Table A4. Parameter Estimates With Robust Estimators for Non-scientific Staff's Self-ascription to Occasional or More Frequent Sexual Discrimination (Yes/No).

Model	Unstandardized Coefficients		t	Sig.	95% Confidence Interval for B	
	B	SE			Lower Bound	Upper Bound
1 (Constant)	0.006	0.004	1.445	0.148	-0.002	0.015
Please indicate your gender	0.040	0.005	8.679	0.000	0.031	0.049
Scientific or non-scientific staff with employment contract	0.021	0.005	4.568	0.000	0.012	0.030
2 (Constant)	-0.001	0.004	-0.360	0.719	-0.009	0.006
Please indicate your gender	0.000	0.004	0.050	0.960	-0.008	0.008
Scientific or non-scientific staff with employment contract	0.003	0.004	0.849	0.396	-0.004	0.011
[... treated you differently because of your gender?]	0.033	0.006	5.422	0.000	0.021	0.044
[... displayed, used, or distributed sexist or sexually suggestive materials?]	0.018	0.011	1.585	0.113	-0.004	0.040
[... made personally offensive sexist remarks?]	0.063	0.010	6.552	0.000	0.044	0.081
[... put you down or was/were condescending to you because of your gender?]	0.129	0.009	14.480	0.000	0.111	0.146

(Continued)

Table A4. (Continued)

Model	Unstandardized Coefficients		<i>t</i>	Sig.	95% Confidence Interval for <i>B</i>	
	<i>B</i>	SE			Lower Bound	Upper Bound
[... repeatedly told sexual stories or jokes that were offensive to you?]	0.064	0.012	5.409	0.000	0.041	0.087
[... made unwelcome attempts to draw you into a discussion on sexual matters?]	0.070	0.014	4.917	0.000	0.042	0.097
[... made offensive remarks about your appearance, body, or sexual activities?]	0.055	0.010	5.616	0.000	0.036	0.074
[... made gestures or used body language of a sexual nature which embarrassed or offended you?]	0.093	0.018	5.059	0.000	0.057	0.129
[... made unwanted attempts to establish a romantic or sexual relationship with you?]	0.095	0.016	6.082	0.000	0.064	0.126
[... continued to ask you out on dates (drinks, dinner, etc.), even though you said "No"?]	0.078	0.019	4.091	0.000	0.040	0.115
[... touched you in a way that made you feel uncomfortable?]	0.020	0.013	1.542	0.123	-0.006	0.046
[... made unwanted attempts to stroke, fondle, or kiss you?]	0.266	0.026	10.129	0.000	0.214	0.317
[... made you feel threatened with some sort of retaliation for not being sexually cooperative?]	0.075	0.061	1.227	0.220	-0.045	0.195

[... treated you badly for refusing to have sex?]	-0.032	0.057	-0.561	0.575	-0.144	0.080
[... implied that you would be promoted faster or given better treatment or be otherwise rewarded if you engage in sexual behavior?]	0.365	0.069	5.257	0.000	0.229	0.501
3 (Constant)	0.004	0.004	0.929	0.353	-0.004	0.011
Please indicate your gender.	-0.005	0.004	-1.101	0.271	-0.014	0.004
Scientific or non-scientific staff with employment contract	0.003	0.004	0.817	0.414	-0.005	0.011
[... treated you differently because of your gender?]	0.045	0.010	4.534	0.000	0.026	0.065
[... displayed, used, or distributed sexist or sexually suggestive materials?]	-0.004	0.015	-0.241	0.810	-0.033	0.026
[... made personally offensive sexist remarks?]	0.001	0.015	0.072	0.943	-0.028	0.030
[... put you down or was/were condescending to you because of your gender?]	0.243	0.022	10.825	0.000	0.199	0.287
[... repeatedly told sexual stories or jokes that were offensive to you?]	-0.010	0.018	-0.562	0.574	-0.046	0.025
[... made unwelcome attempts to draw you into a discussion on sexual matters?]	0.035	0.022	1.628	0.104	-0.007	0.078
[... made offensive remarks about your appearance, body, or sexual activities?]	0.023	0.015	1.559	0.119	-0.006	0.052

(Continued)

Table A4. (Continued)

Model	Unstandardized Coefficients		<i>t</i>	Sig.	95% Confidence Interval for <i>B</i>	
	<i>B</i>	SE			Lower Bound	Upper Bound
[... made gestures or used body language of a sexual nature which embarrassed or offended you?]	0.113	0.030	3.731	0.000	0.054	0.173
[... made unwanted attempts to establish a romantic or sexual relationship with you?]	0.001	0.028	0.023	0.982	-0.055	0.056
[... continued to ask you out on dates (drinks, dinner, etc.), even though you said "No"?]	0.150	0.037	4.072	0.000	0.078	0.222
[... touched you in a way that made you feel uncomfortable?]	0.025	0.021	1.195	0.232	-0.016	0.066
[... made unwanted attempts to stroke, fondle, or kiss you?]	0.377	0.052	7.294	0.000	0.276	0.479
[... made you feel threatened with some sort of retaliation for not being sexually cooperative?]	-0.924	0.237	-3.903	0.000	-1.389	-0.460
[... treated you badly for refusing to have sex?]	-0.211	0.095	-2.234	0.026	-0.397	-0.026
[... implied that you would be promoted faster or given better treatment or be otherwise rewarded if you engage in sexual behavior?]	0.922	0.162	5.696	0.000	0.604	1.239

Female*[...] treated you differently because of your gender?]	-0.025	0.012	-1.995	0.046	-0.049	0.000
Female*[...] displayed, used, or distributed sexist or sexually suggestive materials?]	0.060	0.022	2.689	0.007	0.016	0.104
Female*[...] made personally offensive sexist remarks?]	0.113	0.019	5.904	0.000	0.076	0.151
Female*[...] put you down or was/were condescending to you because of your gender?]	-0.144	0.024	-5.893	0.000	-0.192	-0.096
Female*[...] repeatedly told sexual stories or jokes that were offensive to you?]	0.123	0.024	5.183	0.000	0.077	0.170
Female*[...] made unwelcome attempts to draw you into a discussion on sexual matters?]	0.041	0.029	1.439	0.150	-0.015	0.097
Female*[...] made offensive remarks about your appearance, body, or sexual activities?]	0.038	0.020	1.936	0.053	0.000	0.077
Female*[...] made gestures or used body language of a sexual nature which embarrassed or offended you?]	-0.040	0.038	-1.058	0.290	-0.115	0.034
Female*[...] made unwanted attempts to establish a romantic or sexual relationship with you?]	0.104	0.034	3.068	0.002	0.038	0.171

(Continued)

Table A4. (Continued)

Model	Unstandardized Coefficients		t	Sig.	95% Confidence Interval for B	
	B	SE			Lower Bound	Upper Bound
Female*[...] continued to ask you out on dates (drinks, dinner, etc.), even though you said "No"?	-0.092	0.043	-2.147	0.032	-0.176	-0.008
Female*[...] touched you in a way that made you feel uncomfortable?]	-0.003	0.027	-0.119	0.905	-0.056	0.049
Female*[...] made unwanted attempts to stroke, fondle, or kiss you?]	-0.145	0.060	-2.414	0.016	-0.263	-0.027
Female*[...] made you feel threatened with some sort of retaliation for not being sexually cooperative?]	1.017	0.245	4.145	0.000	0.536	1.498
Female*[...] treated you badly for refusing to have sex?]	0.247	0.120	2.063	0.039	0.012	0.482
Female*[...] implied that you would be promoted faster or given better treatment or be otherwise rewarded if you engage in sexual behavior?]	-0.630	0.181	-3.483	0.000	-0.985	-0.275
4 (Constant)	0.007	0.004	1.809	0.071	-0.001	0.015
Please indicate your gender	-0.006	0.004	-1.229	0.219	-0.014	0.003
Scientific or non-scientific staff with employment contract	-0.002	0.004	-0.467	0.641	-0.011	0.007

[... treated you differently because of your gender?]	0.047	0.013	3.633	0.000	0.021	0.072
[... displayed, used, or distributed sexist or sexually suggestive materials?]	-0.045	0.021	-2.087	0.037	-0.086	-0.003
[... made personally offensive sexist remarks?]	0.115	0.021	5.464	0.000	0.074	0.157
[... put you down or was/were condescending to you because of your gender?]	0.184	0.025	7.389	0.000	0.135	0.233
[... repeatedly told sexual stories or jokes that were offensive to you?]	-0.049	0.025	-1.992	0.046	-0.098	-0.001
[... made unwelcome attempts to draw you into a discussion on sexual matters?]	-0.035	0.027	-1.264	0.206	-0.088	0.019
[... made offensive remarks about your appearance, body, or sexual activities?]	0.035	0.019	1.832	0.067	-0.002	0.073
[... made gestures or used body language of a sexual nature which embarrassed or offended you?]	0.191	0.042	4.493	0.000	0.108	0.274
[... made unwanted attempts to establish a romantic or sexual relationship with you?]	-0.009	0.036	-0.237	0.813	-0.079	0.062
[... continued to ask you out on dates (drinks, dinner, etc.), even though you said "No"?]	0.111	0.045	2.452	0.014	0.022	0.200
[... touched you in a way that made you feel uncomfortable?]	0.027	0.026	1.049	0.294	-0.023	0.077

(Continued)

Table A4. (Continued)

Model	Unstandardized Coefficients		<i>t</i>	Sig.	95% Confidence Interval for <i>B</i>	
	<i>B</i>	SE			Lower Bound	Upper Bound
[... made unwanted attempts to stroke, fondle, or kiss you?]	0.363	0.057	6.409	0.000	0.252	0.475
[... made you feel threatened with some sort of retaliation for not being sexually cooperative?]	-0.477	0.320	-1.491	0.136	-1.105	0.150
[... treated you badly for refusing to have sex?]	-0.256	0.095	-2.708	0.007	-0.442	-0.071
[... implied that you would be promoted faster or given better treatment or be otherwise rewarded if you engage in sexual behavior?]	0.525	0.270	1.946	0.052	-0.004	1.054
Female* [... treated you differently because of your gender?]	-0.025	0.012	-1.969	0.049	-0.049	0.000
Female* [... displayed, used, or distributed sexist or sexually suggestive materials?]	0.062	0.022	2.766	0.006	0.018	0.105
Female* [... made personally offensive sexist remarks?]	0.102	0.019	5.341	0.000	0.065	0.140
Female* [... put you down or was/were condescending to you because of your gender?]	-0.135	0.024	-5.526	0.000	-0.182	-0.087

Female*[… repeatedly told sexual stories or jokes that were offensive to you?]	0.132	0.024	5.486	0.000	0.085	0.179
Female*[… made unwelcome attempts to draw you into a discussion on sexual matters?]	0.056	0.029	1.971	0.049	0.000	0.112
Female*[… made offensive remarks about your appearance, body, or sexual activities?]	0.034	0.020	1.697	0.090	-0.005	0.072
Female*[… made gestures or used body language of a sexual nature which embarrassed or offended you?]	-0.060	0.038	-1.579	0.114	-0.135	0.015
Female*[… made unwanted attempts to establish a romantic or sexual relationship with you?]	0.091	0.034	2.680	0.007	0.024	0.157
Female*[… continued to ask you out on dates (drinks, dinner, etc.), even though you said “No”?]	-0.090	0.043	-2.087	0.037	-0.174	-0.005
Female*[… touched you in a way that made you feel uncomfortable?]	-0.001	0.027	-0.053	0.957	-0.054	0.051
Female*[… made unwanted attempts to stroke, fondle, or kiss you?]	-0.187	0.061	-3.074	0.002	-0.307	-0.068
Female*[… made you feel threatened with some sort of retaliation for not being sexually cooperative?]	0.598	0.308	1.942	0.052	-0.006	1.202

(Continued)

Table A4. (Continued)

Model	Unstandardized Coefficients		<i>t</i>	Sig.	95% Confidence Interval for <i>B</i>	
	<i>B</i>	SE			Lower Bound	Upper Bound
Female* [... treated you badly for refusing to have sex?]	0.294	0.122	2.418	0.016	0.056	0.533
Female* [... implied that you would be promoted faster or given better treatment or be otherwise rewarded if you engage in sexual behavior?]	-0.562	0.183	-3.063	0.002	-0.921	-0.202
Scientist* [... treated you differently because of your gender?]	0.000	0.012	-0.003	0.998	-0.023	0.023
Scientist* [... displayed, used, or distributed sexist or sexually suggestive materials?]	0.058	0.023	2.518	0.012	0.013	0.103
Scientist* [... made personally offensive sexist remarks?]	-0.156	0.021	-7.441	0.000	-0.198	-0.115
Scientist* [... put you down or was/were condescending to you because of your gender?]	0.092	0.018	5.238	0.000	0.057	0.126
Scientist* [... repeatedly told sexual stories or jokes that were offensive to you?]	0.052	0.024	2.159	0.031	0.005	0.100
Scientist* [... made unwelcome attempts to draw you into a discussion on sexual matters?]	0.111	0.028	3.915	0.000	0.055	0.166

Scientist*[... made offensive remarks about your appearance, body, or sexual activities?]	-0.027	0.020	-1.379	0.168	-0.066	0.011
Scientist*[... made gestures or used body language of a sexual nature which embarrassed or offended you?]	-0.107	0.040	-2.644	0.008	-0.186	-0.028
Scientist*[... made unwanted attempts to establish a romantic or sexual relationship with you?]	0.031	0.033	0.961	0.336	-0.033	0.095
Scientist*[... continued to ask you out on dates (drinks, dinner, etc.), even though you said "No"?]	0.051	0.039	1.317	0.188	-0.025	0.127
Scientist*[... touched you in a way that made you feel uncomfortable?]	-0.010	0.026	-0.364	0.716	-0.061	0.042
Scientist*[... made unwanted attempts to stroke, fondle, or kiss you?]	0.124	0.053	2.325	0.020	0.019	0.229
Scientist*[... made you feel threatened with some sort of retaliation for not being sexually cooperative?]	-0.056	0.129	-0.431	0.667	-0.308	0.197
Scientist*[... implied that you would be promoted faster or given better treatment or be otherwise rewarded if you engage in sexual behavior?]	0.385	0.217	1.778	0.075	-0.039	0.810

5. Robustness Checks

a) Comparison of the Linear Model With Binary Logistic Model

Due to the better interpretability of the regression parameters, linear regression models were used. However, since a binary outcome is to be explained, a logistic regression model promises more precise estimates (Best and Wolf, 2010).

Comparing the parameter estimates of the gender and scientists/non-scientists variables of models 1, 2, 3, and 4 between the linear and logistic regressions for bullying, there are no differences in the statistical significance ratings ($\alpha = 0.05$) and effect directions. When comparing the interaction effects of bullying items by gender from model 4 of the linear and logistic regression, 7 of 22 interaction effects change their statistical significance rating. For two weak and statistically non-significant effects, the direction of the effect changes. Both the statistical significance rating and effect direction do not change for any interaction effect. The regression parameter for the linear function for the effect size distribution by item frequency behaves in the logistic model – concerning its effect direction and significance evaluation – as in the linear model. The standardized regression coefficient of the linear model is 0.452. In the logistic model, it is 0.578 ($\beta = 2.186$, 95% CI: 0.747/3.626, SE = 0.690, $p = 0.005$).

In the case of sexual discrimination, the effect directions partly changed for the variables gender and scientist/non-scientist in models 1, 2, 3, and 4, which can be attributed to the fact that the respective variables have minimal and statistically non-significant effect sizes. When assessing the statistical significance, there are no differences between linear and logistic regression. Looking at the interaction effects of the SEQ-DoD items with gender between the two types of regression, the significance ratings changed for 9 of 15 interaction effects, for two items the directions of the effects, and for one item, both. The regression parameter of the linear function describing the relationship between effect size and item frequency in the logistic model behaves as in the linear model concerning direction and significance evaluation. The standardized regression coefficient of the linear model is -0.062 and of the logistic model -0.226 ($\beta = -27.847$, 95% CI: $-99.838/44.144$, SE = 33.323, $p = 0.418$).

In summary, the logistic and linear regression models do not differ in their implications for *H1* and *H2*. With regard to the patterns of interaction effects, as shown in Figs. 6 and 8, there are minimal differences. Above all, the linear regression models overestimate the p -values and thus the statistical significance of the results. However, the p -values of the individual interaction effects are not important for testing the hypotheses of this study. The distribution patterns and regression lines shown in Figs. 7 and 9 and the tests of the regression coefficients do not show any differences regarding their implications for *H3*.

b) Impact of a Sum Index

All individual items of the NAQ-rev and the SEQ-DoD were considered in the regression models. In total, the bullying model has 68 predictors and the sexual discrimination model 47. It was questionable whether the large number of included items had an impact on the variables gender and scientist/non-scientist in the four regression models for bullying and sexual discrimination. Therefore, two indices were created by summing the non-transformed NAQ-rev items and SEQ-DoD items (original item scaling: Never (1), Occasionally (2), Monthly (3), Weekly (4), Daily (5)), and logistic regression equations were calculated with them instead of the individual items.

For bullying, calculating with the sum index has no other implications for *H1* and *H2* than calculating with the individual items. In models 3 and 4 of the bullying regressions, in which the index variable is controlled for its interaction with gender and scientist/non-scientist, there is no statistically significant interaction effect. In these models, only the index variable is statistically significant.

Concerning sexual discrimination, the use of the sum index has implications for *H2*: when controlling for the index in model 2, women are statistically significantly more likely than men to rate themselves as having experienced sexual discrimination, unlike in the results presented here. Models 3 and 4 show that both the index and its interaction with gender are statistically significant.

This shows that regarding *H2*, the study would have come to a different assessment when calculating with a sum index in relation to sexual discrimination. The model fit, the Nagelkerke *R* square, of models 2, 3, and 4 with the sum index is between 0.347 and 0.350. The logistic models with the sum index thus explain a smaller part of the variance of the dependent variable than the logistic models with the binary single item predictors, whose Nagelkerke *R* Square for models 2 to 4 is between 0.391 and 0.411.¹⁸

c) Comparison of Models 3 and 4

In the present study, the interaction effects between gender and the bullying items from the respective model 4 were used. It is conceivable that the interaction effects between models 3 and 4 differ considerably and that the study would have come to different assessments with regard to *H3* if the interaction effects from model 3 had been used for the corresponding calculations.

¹⁸However, a meaningful comparison of Nagelkerke's *R* square of different logistic regression models is not possible as the measure depends on the effects sizes as well as the distribution of the predictors in a regression model. In the end, theoretical considerations are decisive as to whether one attributes more relevance to the models with the sum index or with the individual items. In the context of the present study, the main focus is on the influence of the effects sizes and distribution of the individual items on a supposed measurement gap between men and women.

With respect to the bullying models, different effect directions were found for the items “Having your opinions ignored” ($\beta_{\text{Model 4}} = 0.003, \beta_{\text{Model 3}} = -0.001$) and “Being the target of practical jokes by people with whom you don’t get along” ($\beta_{\text{Model 4}} = 0.005, \beta_{\text{Model 3}} = -0.003$). The significance rating does not change and the evaluation of *H3* does not change.

In the regression models on sexual discrimination, there are no differences in the effect directions for the interaction effects of gender and SEQ-DoD items. According to model 3, the assessment of statistical significance changes for the items “... made unwanted attempts to establish a romantic or sexual relationship with you?” ($\beta_{\text{Model 4}} = 0.091, \beta_{\text{Model 3}} = 0.104$), “... made unwanted attempts to stroke, fondle, or kiss you?” ($\beta_{\text{Model 4}} = -0.187, \beta_{\text{Model 3}} = -0.145$), and “... made you feel threatened with some sort of retaliation for not being sexually cooperative?” ($\beta_{\text{Model 4}} = 0.598, \beta_{\text{Model 3}} = 1.017$). These differences have no implications for *H3*.

The differences between models 3 and 4 are not considered critical, as they are only minor. However, it is worth noting that the interaction effect of gender and the threat of “some sort of retaliation for not being sexually cooperative” is considerably more pronounced in model 3.

d) Rescaling of the Dependent Variable

It was further tested whether the effect directions and significance ratings of the gender effects in models 1 and 2 and the interaction effects remain constant if the value “1” is assigned to the dependent variable only when a person reports having experienced bullying or sexual discrimination monthly or more frequently (not already from “occasionally” onwards).

This modification reduces the proportion of individuals classifying themselves as having been bullied from 8.33% to 2.45%, and the results for bullying change considerably. The gender effect in model 1 remains statistically significant ($\beta_{\text{Model 1}} = 0.030, \beta_{\text{Model 1 rescaled}} = 0.009$), but in model 2 it is no longer statistically significant ($\beta_{\text{Model 2}} = 0.017, \beta_{\text{Model 2 rescaled}} = 0.004$). Furthermore, the effect direction changes for 10 of 22 interaction variables in model 4. The statistical significance rating changes for two interaction variables: the item “Threats of violence or physical abuse, or actual abuse” becomes significant ($\beta_{\text{Model 4}} = 0.216, \beta_{\text{Model 4 rescaled}} = 0.234$) and the item “Being shouted at or being the target of spontaneous anger” loses its significance ($\beta_{\text{Model 4}} = -0.006, \beta_{\text{Model 4 rescaled}} = 1.017$). The considerably changed interaction effects have no impact on the assessment of *H3*.

In the case of sexual discrimination, the rescaling of the dependent variable reduces the proportion of persons in the sample who consider themselves to be sexually discriminated from 3.65% to 0.59%. The gender effect in model 1 disappears ($\beta_{\text{Model 1}} = 0.040, \beta_{\text{Model 1 rescaled}} = 0.004$). In model 2, the gender effect does not change with rescaling ($\beta_{\text{Model 1}} = 0.000, \beta_{\text{Model 1 rescaled}} = -0.003$) and the assessment of *H3* also remains constant.

The robustness test with the rescaling of the dependent variable shows that the variable scaling considerably influences the results, especially in the study on bullying.

e) Inclusion of Control Variables

A five-stage hierarchical regression model was also computed, with scientific discipline (as a section of MPG) and the respondents' length of employment as control variables in the last stage. The scientific institutes and facilities of the MPG are divided into three sections, which are oriented toward scientific disciplines (Chemistry, Physics and Technology Section; Biology and Medicine Section; Humanities and Social Sciences Section; Other). In addition, some employees are not assigned to any of the sections, for example, if they work in the general administration of the MPG. The individual sections differ in parts regarding their proportion of women and the forms of cooperation practiced in them. The control variable "scientific discipline" is intended to take account of confounding effects due to the functional differentiation of the respondents. The variable "length of employment" (one year and less; one year and more, less than four years; more than four years) considers that bullying constellations often develop over a longer period of time along a spiral of escalation. However, an influence of this variable is rather unlikely, as men and women are largely equally distributed across the categories of the variable.

In the bullying regression, the inclusion of the control variables does not change any effect directions or any of the significance ratings. In the sexual discrimination regression, the effect direction of the interaction variable of the item "... touched you in a way that made you feel uncomfortable?" becomes negative ($\beta_{\text{Model 4}} = -0.001$, $\beta_{\text{Model 5}} = 0.002$). The significance ratings do not change. As a result, adding the control variables does not affect the results at all in principle.

f) Confounded Moderation

As noted above, in the sample, women are underrepresented in hierarchically higher-ranking positions and overrepresented in lower-ranking positions. This could imply that the gender effect considered here is confounded by a hierarchy effect. This seems plausible as several of the bullying items are particularly frequent in hierarchical work relationships (e.g., "Being ordered to do work below your level of competence" or "Being given an unmanageable workload").

To check whether the gender effects in the bullying and sexual discrimination models are confounded by a hierarchical effect, four-stage hierarchical regression models were calculated. However, the regressions now no longer include the variable distinguishing researchers from non-scientific employees. Instead, the hierarchical positions of the researchers (PhD, postdoc, other research associates, and directors or research group leaders) were included. The calculation therefore only includes researchers ($n_{\text{bullying}} = 2,916/n_{\text{sexual discrim}} = 3,307$).

Regarding the main effect of gender in the respective models 1 and 2 for bullying and sexual discrimination, the effect directions, and statements on the existence of statistical significance remain the same. As expected, the interaction effects of gender and the item batteries have changed considerably. For bullying, three effect directions and eight statements of statistical significance change in the 22 interactions. In none of the interactions do both effect direction and significance

statement change. In only one case does a statistically significant effect direction change. For sexual discrimination, two effect directions change (both from non-significant interactions), and six significance statements. The changed interaction effects do not lead to a different assessment of *H3*.

Thus, the influence of gender as a moderating variable is confounded to some extent by hierarchical position; the hypothesis assessment is not changed by taking hierarchical position into account.

Chapter 5

The Hidden Problem: Sexual Harassment and Violence in German Higher Education

Heike Pantelmann and Tanja Wälty

Abstract

Sexual harassment and violence are taboo topics at German universities. Accordingly, there is a large gap in research on the prevalence and functioning of sexual harassment and assault in higher education as well as on social, cultural, and organizational conditions that foster and reproduce gender-based violence at universities. Previous research and our own data suggest that there is a perception among students, faculty and staff that normalizes, trivializes, and even legitimizes the problem. Based on a quantitative survey with students on the prevalence of sexual harassment and violence as well as the results of our analysis of how German universities deal with the issue, we relate this perception to the organizational structures of the higher-education system and discuss historically evolved hierarchies and androcentric structures as well as their reformulation in the wake of neoliberalization as causal for the tabooing and hiding of sexual harassment at German universities.

Keywords: Sexual harassment and violence; universities; hierarchies; androcentrism; neoliberalism; gender-equality policies

Introduction

Although the issue of gender-based violence has received more attention in recent years through public debates such as #Aufschrei and #MeToo, sexual harassment and violence in higher education remain taboo at German universities. Although

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the topic is being researched in the contexts of different fields, the university as a place where the incidents occur mostly remains unnoticed. Although various quantitative studies show that sexual harassment and assault are an everyday issue in German higher education, universities do not feature in the debates about sexual harassment nor is the issue discussed within universities. This makes sexual harassment and violence a hidden problem at German universities. Our personal experience with and first evidence of the hiding of the problem is the fact that in 2018, we were allowed to conduct a quantitative survey on the topic at a German university only on the condition that the data of the survey would not be published. We take this act of hiding as a starting point for a theoretical reflection on the structural causes of sexual violence in the German university context. Drawing on some overall results of the survey, the results of our analysis on how German universities deal with the issue (Schüz et al., 2021), and international research literature on the topic, in this article, we show that the subject is tabooed, normalized, and trivialized by students, faculty and staff alike. We analyze the many ways in which the problem is hidden. We situate our empirical findings within a specific set of cultural conditions, the ways (resulting from these conditions) in which society addresses sexual harassment and assault, and the organizational structures of the university that enable, favor, and legitimize the issue while ignoring its intersectional complexities. We discuss the latter in the context of the prevailing image of the university as a non-discriminatory place of research, teaching, and critical reflection, its historically evolved, androcentric hierarchies, and the neoliberalization that is increasingly changing the conditions of academic knowledge production and work environments.

The Problem of “The Others”¹: Perceptions of Sexual Harassment in Germany

The question of the recognition and articulation of violence is an expression of political power relations and the result of social negotiations. For this reason, societal, political, and media debates on sexual violence must be taken into account when we consider sexual harassment at universities. The peculiarities of a society as a whole can be found in the form of specific moments in its organizational contexts and organizations (such as universities) can only be understood in relation to the characteristics of society as a whole (cf. Türk, 2000, p. 17). It is these dominant patterns of argumentation, debate, and (non-)action in society that we encounter again and again in our academic and practical work on sexual harassment and violence in the institutions of higher education. We see these patterns as related to our understanding of universities as organizations that are

¹In the sense laid out by Stuart Hall (2019), the term “others” refers to stereotyped notions of people reduced to naturalized characteristics. This marks them as different in hegemonic discourse and excludes them from the dominant group. By using quotation marks, we simultaneously refer to and distance ourselves from the inherent discrimination of the term.

embedded in society and represent both a structural and structuring moment of it (Türk, 2000). As such, universities not only contribute to the analysis of societal and political debates about sexual harassment and violence but also reproduce these debates and therefore substantially shape them.

In Germany, we observe a culture of discussion in which it seems difficult to come to terms with one's own attitude toward violence and to show responsibility, which becomes particularly evident in the example of sexual violence. Germany is perceived by itself and others as a progressive and enlightened country in which emancipatory projects such as gender equality and gender justice have long been completed. Accordingly, sexual harassment and violence are perceived as a problem of "the others." These "others" can be other countries or people with "another" (actual or perceived) nationality, cultural background, skin color, or gender. Examples of this can be found in the political and public debate on sexual violence as well as in its legal treatment. One of these examples is the rejection of the term *Femizid* (femicide)² by German politicians, who at the same time recognize femicide as a crime in other parts of the world, namely in Latin America, for which they are willing to finance prevention initiatives. This is mirrored in the media coverage of murders of women as *Familiendrama* (family drama), which linguistically obscures the facts of the crime. A structural and linguistic reference to the actual problem appears only in the term *Ehrenmord* (honor killing). However, the focus here is again not on the murder of a woman but on the often-discussed "lack of integration" into German dominant society of supposed cultural "others" (Wischniewski, 2018). The events of the 2015 New Year's Eve in Cologne³ are an example of a reaction that others the perpetrators instead of problematizing sexual violence. The media debate surrounding the events was dominated by racist tones and the discussion was culturalized and used to stir up racist, anti-Muslim resentments (Hark and Villa, 2017). These debates even led to a change in legislation: The long-due reform of the Sexual Criminal Law (*Sexualstrafrecht*) was passed in a fast forward motion, but at the same time and in the shadow of the first law, a second law was passed that allowed the faster and less bureaucratic deportation of convicted non-German offenders. In the case of Cologne, sexual politics were activated for a racist production of truth and feminism was appropriated for the legitimization of European border regimes (Hark and Villa, 2017, p. 20).

²A parliamentary motion submitted in 2018 to introduce the term femicide into the official political and legal debate was dismissed by the federal government, which rejected the proposed adoption of the World Health Organization definition of femicide as too imprecise. In the same year, the German government supported the EU's and United Nations' "Spotlight Initiative" for the prevention of femicide in Latin America, which was scheduled to run for several years and financed with several million euros (UN Women, 2018).

³For more information, see the Final Report of the Parliamentary Committee of Inquiry (*Schlussbericht des Parlamentarischen Untersuchungsausschusses*) on the matter.

The invisibility of sexual violence in German universities is reflective of broader German society that either fails to recognize sexual violence as its problem or, when recognizing it, does so in problematic ways. First, also in universities, the main attention is pointed to “others” (outside the university) when it comes to sexual harassment and violence: The problem is researched in its full range in the most diverse regions and contexts and from the perspectives of different disciplines. But there is hardly any research on the university as a place where sexual harassment and violence happens. Second, a structural discussion of the causes of sexual harassment and violence barely takes place in university contexts, although the few existing studies on the subject repeatedly and clearly name university hierarchies as a causal factor. Instead, as in socio-cultural discourse, a case-by-case perspective prevails, in which cases that arise are dealt with behind closed doors in order to attract as little attention as possible. As long as the problem is only considered structural when it can be politically abused as a problem of “others” and as long as we do not “name the problem” (Ahmed, 2014) with adequate terminology as in the example of femicide, sexual violence remains a hidden problem. The undifferentiated way in which sexual violence is negotiated in the dominant political, social, and legal sphere underlines the importance of intersectional analysis, which is usually left out of these discussions. Although the results of prevalence studies show the opposite, the view that sexual harassment and violence do not occur at universities dominates in Germany, both within and outside the university context.

However, various theoretical approaches emphasize the constitutive character of sexual violence for the reproduction of social power relations⁴ (cf. Brownmiller, 1975; MacKinnon, 1979). As such, it is a tool of oppression of men against women (Brownmiller, 1975) and, as Alison Phipps (2021) adds, of men against men, dominant society against marginalized communities, cis-heterosexuals against queer persons, white women against colored or black men, etc. In this sense, the German higher-education system, with its strict hierarchies and pronounced relationships of dependency and competition that result from the scarcity of positions for mid-level academic staff, represents fertile ground for sexual harassment and violence as tools to maintain historically evolved academic structures and power relations. Embedded in the societal context described above, universities produce and reproduce the discourse on sexual harassment as a problem of “others.” Moreover, ignoring the problem within their own ranks makes sexual harassment a hidden problem at universities. As we will argue throughout this article, the problem is both tabooed and normalized in equal measure, making sexual harassment not only possible but also tolerable and, if behind closed doors, even legitimate in German higher education.

⁴In Germany, the term sexualized (instead of sexual) harassment and violence has gained acceptance in recent years. It emphasizes that acts of sexual violence are not based in sexual desire, but are an instrument of creating and maintaining power. This terminology is also used in university contexts, for example, in policies or contact points.

Sexual Harassment and Assault at German Universities

The Prevalence of Sexual Harassment at German Universities

Since the beginning of scholarly research on sexual violence in higher-education contexts, a clear primary interest has been in quantitative assessments of prevalence, manifestations, and affectedness (Bondestam and Lundqvist, 2018, 2020). The theoretical premise that sexual violence must be examined in its interconnection with power and social hierarchies has so far found little reception in empirical research practice, as the focus there continues to be on the category of gender in relation to the affectedness of women. In their international-scale review of research literature on sexual harassment in higher-education contexts published between 1966 and 2018, Bondestam and Lundqvist (2020) summarized the following key findings from quantitative studies: Sexual harassment occurs in all academic disciplines and status groups; the prevalence of sexual harassment shows international variation in affectedness from 11–73% for women and 3–26% for men; students, younger women, women in temporary employment, and certain minorities (e.g., based on ethnicity or sexual orientation) are more likely to be exposed to sexual harassment (Bondestam and Lundqvist, 2020, pp. 7–8).

In Germany, a more in-depth examination of sexual harassment in academia began in the course of the feminist mobilization for higher-education policy in the late 1980s, when the first non-representative surveys on the topic were conducted (Färber, 1992; Löhr, 1994; Holzbecher, 1996). In each of these studies, a significant number of women (students and staff) reported experiences of sexual harassment. The most recent and comprehensive quantitative data on sexual harassment at German universities come from the 2012 EU-funded research project “Gender-based Violence, Stalking and Fear of Crime” (Feltes et al., 2012b). In this transnational project, relevant data on the topic were collected and comparatively analyzed for the first time for the European Union. In Germany, around 12,000 female students at 16 universities were asked about their perception of safety at university, whether they had been affected by sexual harassment or stalking, and its effects on their health (Feltes et al., 2012a). According to the study, 54.7% of female students had experienced sexual discrimination, 22.8% had experienced a stalking situation, and 3.3% had experienced a legally relevant form of sexual violence during their time at university (Feltes et al., 2012a, pp. 17–21). The authors identified gender, migration background, disabilities, age, sexual orientation, and status-group membership as key risk factors for being affected. In light of these findings, the study problematized the “neutral attitude of the university” (Feltes et al., 2012a, p. 36) in dealing with the issue and assumed a direct connection with the low reporting rate: The alleged neutrality and related avoidance of open debates on the topic normalize sexual harassment and prevent effective strategies against it. The skepticism of many university administrators regarding the topic is attributed to the fear that a public debate could have negative repercussions for the university’s reputation or ranking position (Feltes et al., 2012a). Thus, the study repeatedly pointed to the structural and discursive obstacles to addressing and ultimately combating sexual harassment in the university context.

There are no current figures for Germany on the affectedness of university staff. A representative survey conducted in 2018/2019 on behalf of the Federal Anti-Discrimination Agency (*Antidiskriminierungsstelle des Bundes*) found that one in eleven employees (9%) had experienced sexual harassment at work in the last three years, with women being affected two to three times more frequently than men. As women in managerial positions and academic professions seem to be particularly affected, the authors assumed that higher qualifications and positions among women increase the risk for sexual harassment at work (Schröttle et al., 2019, p. 88).

Our Survey on Sexual Harassment and Violence at a German University

As part of a transnational research collaboration with universities from Costa Rica, Ecuador, India, Japan, Colombia, Mexico, Peru, and South Korea, we conducted a quantitative survey on the prevalence of sexual harassment at a large German university with a total of 1,156 students⁵ from the faculties of social science (70%) and natural science (30%)⁶ in 2017/2018. In the questionnaire, students from the participating universities were asked about their experiences with, observations of, and reactions to sexual harassment at their universities. The aim of the project was to conduct a comparative data analysis to identify differences and similarities in the prevalence, functioning, and consequences of sexual harassment in different national and higher-education contexts. In contrast to the other participating universities, the study at the German university could only be conducted on the condition that the results of the survey would only be used internally. For this reason, we cannot publish a detailed analysis of the data. However, our findings largely confirm those of previous studies at German universities and can be summarized as follows: The reported cases of sexual harassment happened mainly between students; the harassers were usually identified as male; and there were no reported physical assaults by faculty.

Nevertheless, in order to give an impression of the survey results without revealing the detailed data, we have clustered the different situations of sexual acts or sexually charged settings described in the survey into the following categories: non-physical harassment (e.g., insinuating remarks, sexually charged looks, unprompted talking about sexual content), physical harassment (any form of unwanted touching as well as coercion to sexual acts), and feared harassment (e.g., invitations to work meetings at unusual times and/or at unpleasant locations, invitations to events for which sexual ulterior motives were suspected).

The most frequently mentioned forms of harassment happened in the category of non-physical sexual harassment, such as sexually charged looks, comments,

⁵33.7% of the students described themselves as male (m), 63.5% as female (f), 0.7% with another gender (other), and 2.1% of the respondents did not specify their respective gender (n/s).

⁶At the time of the survey, 37,984 students were enrolled at the university in question (22,526 registered as female, 15,458 as male).

or messages as well as conversations with sexual content. 42.8% of the students⁷ reported having been affected by these at least once in the university context. These types of assaults are particularly difficult to grasp and prosecute since they are legally not defined as criminal acts and their liability thus depends on whether or not they are regulated in the particular university policies, provided that such policies exist at all.

15.6% of the students reported having been in a situation where they feared sexual harassment; 70.6% of these students were female.⁸ This indicates that it is more common for women to examine situations for their possible potential for violence and to take precautions in the form of (non-)action patterns.

5.1% of the students⁹ reported having been physically assaulted. At first glance, this relatively low percentage can be read as a positive result. However, such data is problematic and partly misleading, especially with regard to political measures against sexual harassment at universities. Expressed in percentages, the problem of physical assaults appears to be almost non-existent. However, expressed in absolute numbers, of the 1,156 students that responded to the survey, 59 experienced physical sexual violence at the university (some of them multiple times). There were 55 reported cases of inappropriate touching and 12 incidents in which individuals were physically harassed or held against their will. In two cases, students were coerced into providing sexual favors in return for better grades or other advantages in their studies.

The results of the survey must be located in a context that has shortcomings and methodological weaknesses in a number of points. In order to comply with data-protection regulations, the only socio-demographic data we could collect was students' genders. This makes a more in-depth and critical evaluation of the data from an intersectional perspective impossible. Studies have shown that certain groups are more frequently affected by sexual violence than others. These groups include women, LGBTIQ* persons, racialized persons, and persons with physical or mental disabilities (cf. Feltes et al., 2012b). This seems to indicate that discrimination and sexual violence are interrelated; however, we cannot further illuminate this with our own data.

In order to be able to survey as many students as possible in the short time frame we were granted to undertake the study, we conducted the survey in well-attended lectures. These were predominantly introductory lectures, which means that mainly first-year students participated in the survey, that is, people with little university experience. Another problem was the survey setting: Surveys on a sensitive topic such as sexual violence require a safe and anonymous surrounding, which was not provided in the crowded lecture halls. Some students were visibly amused by the questions, which may have had an intimidating effect on others. In addition, lecturers' attitudes proved to be crucial: If a lecturer announced the

⁷f = 66.7%; m = 30.9%; other = 1.0%; n/s = 1.4% (n = 495).

⁸m = 27.8%; other = 0.6%; n/s = 1.1% (n = 180).

⁹f = 62.7%; m = 33.9%; n/s = 3.4% (n = 59).

survey with interest and emphasized the importance of the research project, the students' willingness to participate seriously was noticeably higher.

With these problematic aspects of the survey in mind, we nevertheless think that its results can provide some interesting starting points for a critical reflection on the multifactorial complex of conditions and modes of operation of sexual violence at androcentric, hierarchical, and neoliberal German universities. The impossibility to publish exact numbers from our study lays the foundation for our approach and our argumentation that the problem of sexual harassment and violence is hidden in German academia. It shows the very ambivalent attitude to the issue: Universities have to implement equality measures (including measures against sexual harassment) prescribed by law. On the one hand, they thereby signal to third-party funders that they do not ignore the problem. However, on the other hand, they must present the best possible image in order to obtain third-party funding and to be able to compete internationally, an image that gets tainted by sexual harassment as a reality in the university setting. This same ambivalence is reflected in the fact that our study was permitted but only for internal evaluation. We take this ambivalence as a starting point to think more deeply about these structural dynamics that make sexual harassment and violence a hidden problem. For this, we take the comments that students left in the open-question section of the survey in response to questions about how they had reacted to incidents of sexual harassment as well as their general assessment of the survey. These comments address institutional problems in handling sexual harassment as well as personal perceptions of it and reveal both how harassment is dealt with in society and how the mechanisms that hide the problem work. For this reason, we chose them also as titles for the sections below.¹⁰

Questions about the organizational structures of higher education that foster sexual harassment as well as the ways in which harassment interacts with other forms of discrimination and the social positionality of individuals have so far been insufficiently considered in research, especially in the German context. Only in recent years has a branch of research been developing internationally that increasingly addresses the academic conditional structures of sexual harassment from power-critical, intersectional, and structural theory approaches. In order to contribute to research on organizational structures and, in particular, to better understand them within the German higher-education context, we draw on this international research and combine it with findings from organizational research and gender-critical research on higher education for our critical analysis.

“Sexual Harassment is a Problem, But Not at the University”: The University as an Enlightened Organization

Various comments from the open-question section at the end of our survey indicate that while students are aware of sexual violence as a problem, they tend to

¹⁰The survey was conducted in German. The comments used here have been translated from German to English by the authors.

locate it outside the university and, in line with the socio-cultural discourse on the subject, understand it as a problem of (non-university) “others”: “I have encountered most of the situations [of sexual harassment described in the survey]—just not in a university context”; “Sexual harassment is a constant problem in society, however, the questionnaire is in part very exaggerated and at the university, sexual violence is not an everyday issue, rather the opposite”; “While it is an interesting survey, our university is rather devoid of such behavior.” The respondents locate sexual harassment in the street, in public transportation, or in clubs but not in the lecture hall, the cafeteria, or a professor’s office. While, in the case of our survey, this is certainly related to the limited university experience of most respondents, it also points to the widespread cultural perception that “educated” and “intelligent” people have a higher awareness of inequalities and thus create a climate that contains fewer hierarchies and thus less potential for violence (Haß and Müller-Schöll, 2009; Lozano Hernández and Bautista Moreno, 2015). In organizational research, such institutional myths are considered self-evident “doctrines of social reality” (Hofbauer and Striedinger, 2017, p. 502) that function as prescriptions for organizational action. Such cultural and organizational assumptions and institutional myths as well as the accompanying loss of critical and questioning perspectives can contribute to the naturalization and normalization of sexual violence in the university context, which, as the authors of the representative prevalence study at German universities (Feltes et al., 2012a) criticized, is reflected in the university’s “neutral” stance toward the issue and the related avoidance of an open debate about it, which in turn trivializes sexual harassment and negatively affects the reporting rate. Typical ways of universities’ defensive handling of sexual harassment, such as individualization of the crime and delegation of responsibility to those affected (Holzbecher, 2005), can be read as a consequence of the institutional myth of the university as an enlightened organization. The image of the enlightened university fits seamlessly into the self-image of German society as described above, in which the projects of emancipation and gender equality appear to have long been completed and where sexual harassment, if at all, is seen as an “imported” problem.

Araceli Mingo and Hortensia Moreno’s (2015) analysis of sexual violence in the Mexican university context discussed two cultural agreements that form the conditioning structure of sexual violence within the university organizational culture: The “right not to know” and the “right to ignore” allow privileged university members to habitually ignore their advantages grounded in institutional power relations and affirm their individual innocence in relation to the systemic exercise of privilege. This perpetuated practice of ignorance justifies the lack of institutional action in the face of claims against systemic inequality and is thus part of institutional mechanisms that hinder the reporting of assault and silence those affected, which in turn prevents recognizing sexual violence as a systemic problem. The “right not to know” and the institutionalized culture of ignorance show not only that universities are perceived as enlightened organizations from the outside but also that academics often perceive themselves as being immune to assaultive behavior. Sara Ahmed referred to this as “critical sexism,” that is, “the sexism reproduced by those who think of themselves as too critical to reproduce

sexism” (2015, p. 11). If the university and its members are considered (including by themselves) as being too critical to reproduce sexist or harassing behavior, the problem again becomes individualized and each instance of the problem is dismissed as a singular experience. At the same time, the privileged right “not to know” and/or “to ignore” sexual harassment institutionalizes a harassing culture by enabling and rewarding it—Ahmed described this with the example of sexist banter. While participating in sexist culture might be rewarded through the affirmation of peers and group membership, refusing to participate is costly, as the disapproving person is being judged as taking something the wrong way. Disapproving not only leads to being judged for being wrong but also for wronging someone else (Ahmed, 2015, p. 9). Addressing sexual harassment, sexism, and violence inside the enlightened organization is thus often seen as damaging its reputation (Feltes et al., 2012a).

“It’s a Men’s World”: Academic Androcentrism and Hierarchies

Historically, the enlightened university is a male project. The presence of women at German universities is still a relatively new phenomenon: About 400 years passed from the founding of the first universities (at around 1500) to the enrollment of the first women. Compared to this long period, during which access to knowledge was reserved for men, much has been achieved in the last 120 years. And yet, women are still the exception rather than the rule. While women now account for half of first-year students, undergraduates, and graduates, they are underrepresented at higher qualification levels and in management positions. Their share of professorships stands at 22%; just over 17% of university management positions are held by women (Hochschulrektorenkonferenz, 2019). In light of three decades of gender-equality policies in higher education, little seems to have changed in the androcentric structure of the German higher-education system over the past 100 years. Today’s universities are founded on a long (cultural) history marked by the exclusion of women; gender is thus inscribed as a fundamental constitutive factor in the organization of the modern university (Kortendiek, 2019, pp. 1330–1331).

Although the German higher-education system is deeply androcentric, as pointed out by German sociologist Encarnación Gutiérrez Rodríguez (2018), gender is not the only constitutive factor of university organization. Universities, as sites of knowledge production, were instrumental in designing a colonial system of thought based on a racialized and hierarchized view of humans and the world. Despite the decolonization of Latin American, Asian, and African countries, colonial patterns of racialization and systems of social classification have endured and constitute the foundations of the most important stratification mechanisms not only of contemporary societies but also their institutions. Universities, as places of institutionalization of knowledge production, are strategic *loci* for the establishment of cultural and political hegemony and reflect deeply rooted social inequalities marked by class, race, religion, migration, disability, gender, and sexuality (Gutiérrez Rodríguez, 2018, p. 106). The social hierarchization along these categories is reproduced in the personnel structure and

organizational culture of academia. Referring to [Pusser and Marginson \(2013\)](#), Gutiérrez Rodríguez described German universities as preferred sites for the reproduction of white German elites, as they recruit their staff mainly from the white German dominant society (2018, p. 107). And as [Laufenberg et al. \(2018\)](#) pointed out in their edited volume on gender equity and precarity in German academia, as a result, a social group is structurally advantaged that, viewed in terms of society as a whole, represents a numerical minority—namely white male academics with upper- and high-social-class origins. Access, career opportunities, and promotion in academia cannot simply be secured according to the neoliberal credo of individual achievement, diligence, and luck but are regulated by political, institutional, and cultural practices that secure the status reproduction for the socially dominant classes and positions ([Laufenberg, 2016](#); [Möller, 2015](#)).

The historically androcentric university perpetuates itself in the present day as what US-American sociologist [Joan Acker \(2006\)](#) called inequality regimes, in which gender and other interwoven categories of difference have a constitutive role in the organizational context. In order to understand the set of interdependent (structural) conditions that underlie sexual harassment at German universities, it is fundamental to examine universities as gendered ([Acker, 1990](#)), heteronormative ([Musselin, 2006](#); [Wroblewski, 2014](#)), and hierarchized organizations whose organizational culture and personnel structure are continuously reproduced and solidified through the process of homosociality ([Elliott and Smith, 2004](#); [Kanter, 2000](#)). As Phipps discussed for the British context, at universities that are set up and structured in this way, acts and threats of sexual violence become tools to “articulate and preserve the power relations of the institution,” reserving the shaping of “the space of the university for privileged white men (and some white women, too)” ([Phipps, 2021](#), no pagination).

For the German university context, there are hardly any studies that deal in depth with the structural conditions of sexual harassment. In the international research literature, three main structural factors are discussed as the causes for the occurrence of sexual harassment: university power hierarchies, the (re)production of gender stereotypes, and the academic organizational culture ([Bondestam and Lundqvist, 2018](#)).

There is consensus in organizational research that sexual harassment in the workplace occurs more frequently in organizations with large power imbalances (cf. [McDonald, 2012](#); [Schrötle et al., 2019](#)). Studies on the university context suggest a direct link between the hierarchical structures typical of universities, which are characterized by personal dependency relationships, and the prevalence of harassment (cf. [Blome et al., 2013](#); [Bußmann and Lange, 1996](#); Feltes et al., 2012b). The question of how the positions of individuals within intersecting inequality regimes affect their exposure to violence is, at least for the German academic context, largely unexplored. Racist and classist attributions in particular seem to have a significant impact inside and outside universities on who is identified and punished as a perpetrator and which survivors are considered “credible” and “worthy of protection” (cf. [Calafell, 2014](#); [Hark and Villa, 2017](#)).

Studies on the effects of workplace gender composition on the incidence of sexual harassment have demonstrated that harassment is more likely to occur in

male-dominated contexts (cf. [Kabat-Farr and Cortina, 2014](#)) and in work areas where typical tasks are considered “masculine” (cf. [Hunt et al., 2010](#)).¹¹ German universities fit both these criteria. In addition, the organizational culture plays a significant role in encouraging (or discouraging) harassment at work. For universities as organizations, women are still “new” or “intruders.” In the course of a long and self-reinforcing development, which the German organizational researcher [Günther Ortmann \(2005\)](#) called “a thousand loops,” the androcentric structure of universities has been and is being perpetuated: Since women were not there initially, they cannot join later. There is a path dependency—loops, especially when there are so many, are extremely difficult to break. Those who have always been there have shaped the structures and change to these structures is hard to achieve. Those who are less compliant with the present structures and do not meet organizational role requirements must enter into negotiation for change, becoming vulnerable in the process.

In our own study as well as in the analysis of the quantitative data by [Feltes et al. \(2012a\)](#), almost no assaults by teachers on students were mentioned, which means that such a factor of power difference cannot be statistically proven. However, both the qualitative research section of [Feltes et al. \(2012a\)](#) and international studies (cf. [Naezer et al., 2019](#)) on junior female academics indicate that hierarchies and power differentials come into play primarily after graduation, when supervisory relationships tighten and dependencies grow. To survive in the highly competitive neoliberal university system, young academics have to somehow play the game, which leaves little room to defend themselves against harassing behavior. Often, there are only two options: stay and cope or give up and leave. This makes a proactive and preventive approach to sexual harassment on the part of universities all the more important. However, this is hardly to be found at German enlightened and androcentric universities.

“I Didn’t Know Who to Talk to”: The Universities’ Handling of the Problem

One of the key frameworks for universities’ handling of sexual harassment and violence is legal regulations. The legal situation regarding sexual harassment and violence in the university context is relatively complex and inconsistent in Germany, since it derives its legal basis from laws at the federal level, the higher-education acts of the respective states, and autonomous higher-education regulations. University staff is legally protected from sexual harassment and violence by the General Equal Treatment Act (*Allgemeines Gleichbehandlungsgesetz*), but there is no such federal law for the legal protection of students. Specific

¹¹Most studies on the influence of gendered organizational culture on the incidence of sexual harassment assume a binary gender order. To the extent of our knowledge, there is no analysis of data on German universities that examines the interaction of homophobia or transphobia and sexual harassment or the frequency of assaults on gender non-conforming people.

higher-education laws in Germany are regulated at the state level. These laws require universities to implement an imperative for gender equality and against discrimination, but sexual harassment is rarely explicitly mentioned as a component of the latter (Kocher and Porsche, 2015, pp. 19–21). Under these conditions that lack a uniform regulation, university-specific regulations, especially in the form of guidelines, play a central role in how universities deal with the issue. In order to protect students, institutions of higher education are authorized—but not required—to adopt policies also for them. In such guidelines, many universities define the handling of sexual harassment and violence and regulate university-specific measures mostly for prevention and, sometimes, concrete procedures in the event of violations and sanctions (Antidiskriminierungsstelle des Bundes, 2015). Regulations on sexual harassment and violence often appear in the framework of gender-equality policies, making women’s and gender-equality officers at universities the central actors in this field (Kocher and Porsche, 2015, p. 25). This in turn makes women the main addressees of prevention and protection measures; other potentially affected individuals are mostly not mentioned or addressed. The inconsistent and confusing legislation at the state level and the lack of direct protection at the federal level result in a significant gap in legal protection from sexual violence for students.

In order to understand how universities deal with sexual harassment and violence beyond the elaboration of guidelines, we examined the ways in which the issue is addressed at German universities, what information and services can be found on the subject, and where responsibility for the topic lies within the universities (Schüz et al., 2021). In our research, we found that out of the 90 universities analyzed,¹² only 3 have university focal points explicitly specializing in sexual harassment and violence. 46 universities have a relevant policy or guideline. Of these, 36 explicitly mention sexual harassment and violence in their name, for example, “guideline against sexual discrimination and violence.” At 10 universities, such names are phrased more generally, such as “guideline on respectful interaction” or “guideline on fair play.” In these guidelines, sexual harassment is usually one of several issues targeted, so the issue is not addressed specifically but along with other equality-policy topics and issues as one of many. Seventy-four universities have counseling services, but it varies widely how specifically these are geared toward sexual harassment and how broadly information about these services is provided. At almost all universities, sexual harassment is referred to as an area of responsibility of the women’s and equal-opportunity officers, where the topic is just one of many responsibilities in the field of equality policies. Especially in the context of the neoliberal university, we have to assume that sexual harassment is not a prioritized topic on this long list of responsibilities of gender-equality officers and that gender mainstreaming and diversity management are more likely to be found at the top instead (cf. Binner and Weber, 2018). The prioritization of such officers’ fields of activity becomes clear in the German Handbook on

¹²There are 394 higher-education institutions in Germany, of which 121 are universities (Hochschulkompass 2021).

Gender Equality Policy at Universities (*Handbuch zur Gleichstellungspolitik an Hochschulen*) (Blome et al., 2013): The topic of sexual harassment and violence appears as the penultimate of 14 chapters on fields of action in gender-equality policy. The topic of the very last chapter is multidimensional discrimination. Yet, the handbook admits that the field of sexual harassment and violence is more taboo than any other area of gender-equality policy work at universities (Blome et al., 2013, p. 419). Moreover, the positions of women's and equal-opportunity officers at German universities are elective offices. Accordingly, there is no prescribed professional education for this position and it can be assumed that many people holding the position have had no specific preparation for dealing with people affected by sexual harassment and violence—although they are named as primary contacts at most universities.

The research literature repeatedly points out that university responsibilities and contact points for those affected, especially for students, are often unknown. For those who are genderqueer, trans or intersexual as well as for men, institutional responsibility proves to be particularly unclear, as many policies and preventive measures are explicitly aimed at women. In their representative study on sexual harassment at German universities, Feltes et al. (2012a) show that universities need to actively de-taboo the issue and communicate university support structures more openly, effectively, and clearly (Feltes et al., 2012a, p. 73).

The university response to sexual harassment and violence is contradictory, which becomes particularly clear in our discussion of the neoliberal development of universities in the following section. However, this inconsistency also manifests itself in the area of university responsibility and expertise, which, as has been shown, in most German universities is assigned to women's and gender-equality officers. In the context of a problematization of the theoretical foundation of institutional gender policy (cf. Lüdke et al., 2005) from a feminist or gender-studies perspective, the critical question must be raised whether the topic of sexual harassment, as part of university gender-equality policy, is assigned to the right place. Unknown support structures, the low priority of the topic within gender-equality policy, and the almost exclusive addressing of women as those affected due to a persistent binary concept of gender point to existing structural obstacles in the area of responsibility of the women's and gender-equality officers, which, moreover, has become enmeshed in the mechanisms of organizational development of the neoliberal university.

“As an Emancipated Woman, I Can Handle This Myself”: Sexual Harassment in the Context of the Neoliberal University

The quote in this section's title is a student's response to a survey question that asks why affected students did not seek institutional help after experiencing sexual harassment. We consider this quote as emblematic for the ways in which society, organizations, and individuals perceive, evaluate, and react to sexual harassment in a neoliberal age. Recent feminist research on contemporary western societies depicts women, and young women in particular, as “ideal neoliberal subjects” (Scharff, 2020) that can achieve an autonomous and self-determined life

through effort, self-application, and consumption (cf. McRobbie, 2009; Ringrose and Walkerdine, 2008) and cope with challenges and problems independently (Scharff, 2020).

In the sense of the neoliberal promise that nothing is impossible and of the related construction of the alleged autonomous and free subject, the handling of social problems is removed from collective responsibility and placed into the responsibility of the individual—often under the guise of emancipation. In neoliberalism, the entrepreneurial self is elevated to the ideal and each individual is personally responsible for their own happiness, well-being, and success (cf. Brown, 2006; Ludwig, 2010). In turn, this also means being personally responsible for *one's own* failure, which obscures and disarticulates both the continuity and the structural dimension of gender, racial, class, and other social inequalities, as British sociologist Louise Morley pointed out in her analysis of gender in the neoliberal research economy (Morley, 2018). Neoliberalism promises to complete the enlightenment project of emerging from self-inflicted immaturity through achievement, diligence, and ambition. However, the neoliberal merit system has not changed the rules of the game but merely redefined social hierarchies under the guise of liberation, individualization, and emancipation. While women undoubtedly now have more social and economic participation, this participation continues to occur under patriarchal domination and is reflected, for example, in the gender pay gap, the incompatibility of family and career, and the persistence of pregnancy and children as career obstacles for women (McRobbie, 2009).

The neoliberal image of the emancipated and (economically) independent, white, western subject is elevated to the norm, defaming everyone else who does not correspond to this norm as unfree *per se* and thereby reinforcing racist prejudices (Scharff, 2011). With the pretense of fake social mobility through individual enterprise, agency, and endeavor, neoliberalism in most societies is performed through a disarticulation of structural inequalities and simultaneous representation of the dominant groups' interests (Morley, 2018). As a result, there is no choice at a systemic level. Instead, the workers' power "lies in their individual choices to become appropriate and successful within that inevitable system" (Davies et al., 2006).

These developments have also found their way into the halls of the enlightened university. Promising autonomy and freedom, neoliberalism has undermined academic independence and freedom in research and teaching by creating a merit-based scientific system through developments such as a focus on excellence and competition, entrepreneurialism, an emphasis on cost efficiency, and a rise of part-time and fixed-term contracts (Herschberg, 2019, p. 11). Gutiérrez Rodríguez listed three defining elements for the neoliberalization of universities: First, the introduction of a European modulated Bachelor's degree for the creation of EU-wide quality standards for educational qualifications. Second, the reduction of public funding for universities in the wake of the financial crisis in 2008. Third, the increasing marketization of public education initiated in the 1990s. As a consequence, market-based learning formats, concepts, and strategies for quality assurance and control as well as marketing of the universities through branding have been promoted (Gutiérrez Rodríguez, 2018, pp. 103–104).

The pursuit of excellence and of high international rankings requires a contemporary marketing of the university as an accessible, diverse, and gender-equitable institution for everyone. Equality and diversity programs are now a core element of academic quality-assurance programs and human-resource management. Nevertheless, the structurally gendered and racialized division of labor in leading management and research positions at universities has hardly changed. Feminist scholars from the UK have elaborated on how neoliberal policies reproduce and even reinforce androcentric and white power structures in the university. Ahmed (2012), whose research has been fundamental for addressing and problematizing sexual harassment in the higher-education context, developed the concept of the “non-performative” to describe policies and commitments that pretend to do something while in fact enabling institutions to do nothing. While claiming, in a neoliberal marketing logic, to make themselves more diverse, universities “continue to work in favour of the ruling class” (Phipps, 2020, p. 229) by reproducing white and male senior management and research positions. By promoting individualism, toughness, and competitiveness, the neoliberal university stands for characteristics that are considered typically masculine, leading to the establishment of a “virility culture” (Morley, 2016, p. 32) or a “re-masculinization of the university” (Thornton, 2013, p. 128) “by valuing and rewarding the areas and activities in which certain men have traditionally succeeded” (Morley, 2018, p. 15).

This wider organizational culture in the neoliberal university affects not only the perception of sexual harassment but also the ways in which it is dealt with. These have to be contextualized in a marked-based approach in which universities are created as a brand (Giroux, 2002) in order to compete for excellence and international rankings. The transformation of the German higher-education system in the course of the neoliberal economization of universities and the introduction of the “Excellence Initiative” (*Exzellenzinitiative*) in 2005 have led to previously unknown processes of competition, which, as Birgit Riegraf (2018) argued, have resulted in new mechanisms of inclusion and exclusion as well as the precarization of employment. While the latter has led to a conditional opening of the academy to women (Riegraf, 2018, p. 242), it has at the same time reinforced hierarchies and dependency relationships through fixed-term employment contracts and uncertain career prospects. As discussed in the previous section, there is a direct link between unequal power relations in the workplace and the incidence of sexual harassment.

According to the German Federal Ministry of Education and Research (*Bundesministerium für Bildung und Forschung*), the goal of the “Excellence Initiative” is in particular “to sustainably strengthen Germany as a location for science and academia in the international competition and promote its international visibility” (Bundesministerium für Bildung und Forschung, 2019, translation by the authors). The World University Rankings by Times Higher Education evaluate the international competitiveness of universities based on six metrics: academic reputation, employer reputation, faculty-student ratio, citations per faculty, international faculty ratio and international student ratio. In this evaluation, the highest weighting by far is allotted to an institution’s academic reputation

score (40%), collated via over 100,000 expert opinions regarding teaching and research quality at the world's universities (Top Universities, 2021). As shown in this example, in the neoliberal age, reputation has become a university's most important asset—and that reputation must be polished (Ahmed, 2017, p. 102). In doing so, dealing with sexual harassment and violence openly and transparently is “reckoned up” against potential damage to the university's reputation in a market-based approach (Phipps, 2020). A case study we conducted in 2019 about the institutional handling of sexual harassment at German universities (Schüz et al., 2021) poignantly illustrates this “reckoning up” of sexual harassment and reputation. One of the experts interviewed in this study recounted how her university had refused to put the university logo on a poster campaign on the topic due to fear that this alone could be interpreted as indicating that the university had a particular problem with sexual violence. Another expert suggested that many universities were reluctant to create explicit sexual-harassment focal points for the same reason. The “institutional polishing” (Ahmed, 2017) of the academic reputation is incompatible with naming and addressing the problem of sexual harassment openly and transparently at universities. This goes hand in hand with protecting the well-being of those individuals deemed vital to university success. According to Phipps (2020), this is done in two ways: either concealment or erasure. In an arrangement she described as “institutional airbrushing,” acts are downplayed and survivors are asked to resolve the matter behind closed doors. Or, if this is not possible, perpetrators are asked to leave the university (often with a financial settlement) and are thereby airbrushed from the institution (Phipps, 2020). Similarly, discourse analytic studies from the U.S. showed how universities bureaucratize, privatize, and commodify the issue of sexual harassment through a neoliberal management discourse (Clair, 1993) and how the conservative and liberal dogma of academic freedom is strategically used to protect the accused when specific cases of sexual violence at universities become public (Eyre, 2000).

This individualized rather than structural view of the problem of sexual harassment and violence at universities is closely intertwined with the logic of neoliberalism that creates docile, individualized, and responsabilized subjects (Davies et al., 2006) that are characterized by “loyalty, belonging and acceptance, compensated by the rewards of self-interest and marked by the promotion of efficiency in the service of the inevitable” (Saul, 2005, p. 13).

In our survey, this is reflected in the fact that students rated the issue at universities as nonexistent, not bad enough to be addressed, or a problem to be solved by those affected on their own. Of the 69 physical—and thus criminally relevant—assaults mentioned, institutional support was sought in only 4 cases. On the one hand, this may be related to the fact that students, especially when they are at the beginning of their studies, do not know to whom to turn in these situations. Another reason may be a lack of trust in the institution, as Feltes et al. (2012a) found in their study, and survivors' awareness of their own position within university hierarchies. Students perceive sexual harassment at universities consciously or unconsciously in the context of power structures. There is an awareness that consequences must be expected if these structures

are questioned or challenged. Moreover, it must be assumed that sanctions are usually not directed against the structures but against the individuals who question them. This awareness of one's own position within the given power structures further implies that certain options for action cannot be imagined. This was expressed in the open-question section of the survey in statements such as "What can you do about it?" In line with neoliberal logic, it seems that in many cases, the reporting of an assault is reckoned up against the consequences for one's life, studies, and career. In addition, sexual harassment, at least in its everyday manifestations, is, as the statement of the student quoted in the section title shows, a matter that an emancipated woman regulates herself. In what Gundula Ludwig described as the "economization of the social" (Ludwig, 2010, no pagination), the market becomes the structuring principle of social relations, with the consequence that social responsibilities are privatized. This also (re) privatizes structural relations of inequality and the exploitation of women, black, and indigenous people, people of color, and genderqueer people. For the conditional structure of sexual harassment and violence, this economization of the social means that the myth of individual fate is cemented by neoliberal individualization (Ludwig, 2010). The neoliberalization of social relations as well as the intensification of economic dependencies, invisibilization, and the individualization of structural inequalities and the problems that results from it not only make sexual harassment and violence possible but continue to keep it a hidden individualized problem.

"This is Just What Men Do": The Normalization of Sexual Harassment

Androcentric hierarchies, the image of the discrimination-free, enlightened academy, and market-oriented organizational and management structures are some of the factors that (re)produce, allow, and sometimes even encourage sexual harassment and violence at universities. The university approach to the problem paints a picture of sexual harassment as an individual (women's) problem for which individual solutions must be found. Acts of sexual harassment and violence are normalized, minimized, and dismissed by patriarchal gender norms and power relations (Gavey, 2019) as well as by complex and uneven systems of loyalty and hierarchy (Phipps, 2020). These university attitudes have an effect on the way individuals perceive and evaluate sexual harassment and violence at the university as a problem of those affected and not of the perpetrators.

In the fourth part of our survey, we asked how students had responded to the sexual harassment they had experienced. The most common response (13,5%) was that no further significance had been attached to the incident. 10,7% of the respondents had perceived the situation as a joke. Similar reactions were also found in the open-question section, where we asked why affected students had not turned to university staff: "It was not that bad"; "It was not dangerous"; "That's male nature"; "I think a lot of little things happen that are unsettling (also toward men), but you don't take it seriously because of the frequency. I would feel weak if I talked to someone about it."

The fact that sexual harassment is often given no or only very low importance shows how much the topic is normalized and trivialized not only in the university context but in society as a whole. In their research report on sexual harassment at German universities, Feltes et al. (2012a) attributed trivializing reactions such as the ones quoted above to a feeling of helplessness in the face of the omnipresence of the problem, which cannot be solved by individuals. They found that

students were much more reluctant to mention the less serious assault (in contrast to sexual violence) because they are aware that it seems to be a matter of social consensus to put such assaults “in proportion” and therefore to have to “put up with” them. (Feltes et al., 2012a, p. 28)

The authors further argued that the individual burden of such incidents is often not taken seriously and that there is a feeling of coming across as oversensitive or uptight: “[T]he socially accepted trivialization of such assaults is internalized and the woman affected no longer trusts her own feelings” (Feltes et al., 2012a, p. 28).

A consequence of this social normalization and trivialization of sexual harassment is the associated silence, which was mentioned by affected students as the second most common reaction. In reply to the question of how they had reacted to a harassment situation, 12.3% ticked the answer “I didn’t say anything, but it annoyed me” and 6.1% chose “I didn’t say anything, but it deeply unsettled me.” In the research literature on domestic and sexual violence, this phenomenon is conceptually described as a culture of silence or self-silencing. The students’ answers further reveal a tendency of self-questioning: “I thought I had misinterpreted the situation”; “I did not know whether the incident was important enough.” Qualitative studies in particular show that self-doubt is very common in these situations. The intimate nature of the topic, the social taboo surrounding it, and the common cultural ideas regarding who is at fault prevent survivors from turning to someone who could dispel these self-doubts. Instead, those affected locate culpability in their own alleged “misconduct” and wonder whether they misinterpreted the situation or even did something to trigger the assault (cf. Feltes et al., 2012b; Naezer et al., 2019).

Although the results of a number of quantitative studies demonstrate comparatively few assaults by faculty members, there is consensus in the research community that the estimated figure of unreported cases is many times higher. When cases of sexual harassment are reported to university staff, they are usually heard and dealt with behind closed doors. In this context, confidentiality and the protection of those affected are of fundamental, primary importance. And yet, this has the negative side effect of also protecting perpetrators and universities, allowing sexual harassment and violence to remain a hidden problem in the university context. This prevents awareness raising and a lack of awareness results in the assumption that sexual harassment and violence is “just what men do.”

Conclusions: Conducting Tabooed Research on a Tabooed Subject

Drawing on comments from students that had participated in our quantitative survey on the prevalence of sexual harassment at university, in this article, we highlighted possible causes and factors that enable, favor, and legitimize sexual harassment in the higher-education context. We located the problem in the historically evolved hierarchical structures of the androcentric university, discussed the social (self-)image of the university as an enlightened organization, and looked into the effects of neoliberal academic working environments on the prevalence and handling of sexual harassment. Based on this location of the problem, we explored how it is negotiated in the context of the legal and equality-policy framework and problematized normalization as one of the key issues at the university. While our considerations can be substantiated with studies from other work contexts and countries, there is a lack of empirical and ethnographic data on the conditional structure of sexual harassment and violence in the German university system. Established research institutions in Germany show great reluctance to address the issue of sexual harassment in the university context (Bange, 2016, p. 45). The lack of relevant research is also reflected in the fact that many of the available studies are graduation theses or were conducted by women's and gender-equality officers and it is reasonable to assume that researching sexual violence at universities could be a career obstacle (Bange, 2016, p. 46). In terms of content, most of these studies are prevalence studies on the occurrence and type of sexual harassment at German universities. In order to better understand the set of conditions, structures, and internal university dynamics that enable sexual harassment in academia, more ethnographic research is needed. However, producing ethnographic research in and on academia could not only be harmful for researchers' academic careers but, as Maria do Mar Pereira (2013, p. 191), referring to Butterwick and Dawson (2005), puts it, is "one of the greatest taboos" of academic practice" in general. The relative lack of ethnographic research on universities is "a form of collective averted gaze from the inner workings of academia" (do Mar Pereira, 2013, p. 191). The fact that academics do not see themselves as research objects but as subjects that turn others into objects (Friese, 2001, p. 288) makes sense especially in the cultural perception of the university as an enlightened organization as discussed above.

Given that critical examination of the higher-education system is itself taboo, examining the taboo topic of sexual harassment and violence in this context becomes a particularly difficult challenge. The university's handling of our own sexual-harassment study is a particularly striking example of this. As Sara Ahmed (2015) pointed out, "when we give problems their names we can become a problem for those who do not want to register that there is a problem (but who might, at another level, *sense* there is a problem)" (p. 9, emphasis in original). Ahmed herself is a very powerful example of how overwhelming and destructive scholarly and political engagement against sexual harassment can be to one's career at the university: She resigned from her post at Goldsmiths, University of London, in protest against the university's failure to address sexual harassment.

Louise Morley showed in her analysis of gendered implications of the neoliberal research economy that the competition for employment and funding in the academy has made such forms of protest and resistance very rare, as solidarity and the sense of the collective have been eroded: “Resisting takes one out of the game, leaving the path clear for voracious competitors. Playing the game is central to survival for individuals, organizations and nation states” (Morley, 2018, p. 23).

The challenges of researching and addressing sexual harassment and violence in the higher-education context are vast, multi-layered, and complex. Researchers have to find the balance between critical distance, loyalty, and discretion (Friese, 2001, p. 307). Universities must recognize that critical university research should not be perceived in terms of reputational damage but as a fundamental contribution to modern university development—in Germany and elsewhere. Especially in the course of the internationalization of universities and the growing competition for students and “excellent” research, diversity has become an increasingly important strategic field of action at German universities over the last 20 years. In the university discourse, the importance of equal opportunities and the potential of variety and inclusion is emphasized and celebrated, which often reduces diversity to the “shorthand of inclusion” and “the happy point of intersectionality” (Ahmed, 2012, p. 14). Issues that do not contribute to this shiny and inclusive discourse are relegated to the background. This includes sexual harassment and violence. In terms of modern university development, universities need a diversity policy that allows addressing the “dark side of organizations” (Vaughan, 1999). Addressing this dark side not only helps to unveil the myth of universities as enlightened organizations but might also encourage more critical research on academia and breaking mechanisms of androcentric knowledge production and homosocial structures. In order to de-taboo the issue of sexual harassment and violence at universities in research, but also to combat it in everyday university life, a new framing of the problem is needed. For modern university development and the successful internationalization of German universities, anti-discrimination measures must become a joint task of organizational development. There is a need for policies against sexual harassment and violence that do not merely serve the neoliberal project of institutional polishing to strengthen universities’ market positions. Intersectional research on how sexual harassment interacts with other forms of discrimination is needed. Sexual harassment must be challenged as a structural problem that demands collective solutions. This, however, must not mean losing sight of the individual, because as Ahmed rightly notes, “if the ‘institution’ becomes the problem, it becomes rather easy for individuals to say, ‘it has nothing to do with me’ ” (2015, p. 12). The critical university research needed for this can only be de-tabooed if it is actively encouraged and promoted by university management and third-party funders.

All of the above has already been discussed and debated many times in different academic settings. It is alarming to see the extent to which current findings and analyses of sexual violence at universities coincide with those from the early 1990s. It seems as if the acquired knowledge of the women’s movement, which was the first to bring the issue onto the political agenda of German universities, was lost in two decades of increasing economization of the social and

universities and of the accompanying institutionalization of gender equality. This reveals once more that as long as sexual harassment and violence are seen as individualized experiences rather than symptoms of an androcentric and neoliberal higher-education system and as long as both the problem and its investigation are tabooed, nothing will change and sexual harassment will remain a hidden problem at German universities.

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Chapter 6

Eliminating Bullying in the University: The University of Wisconsin-Madison's Hostile & Intimidating Behavior Policy

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Abstract

In the early 2010s, the University of Wisconsin-Madison (UW-Madison) became increasingly concerned about incidents of academic workplace “bullying” on the campus, and in 2014–2016 created policies designed to address such behavior at the University. The new policies and accompanying initiatives were implemented in 2017, defining a new term to describe these behaviors as “hostile and intimidating behavior” (HIB). We use data from three sources to explore the outcomes of the new HIB policies and initiatives to date. Evaluation data from training sessions show the importance of educating the campus community about HIB, providing evidence that the training sessions increase HIB knowledge. Data from two campus-wide surveys measure incidence of HIB for different groups on campus (e.g., analysis by gender, race/ethnicity, sexual orientation, disability status, rank, job duty, and/or the intersection of these characteristics), as well as changes in the knowledge about HIB as reported by faculty and staff. These data show that UW-Madison faculty and staff are increasing their knowledge of HIB as a problem and also increasing their knowledge about what to do about it. Underrepresented groups who more commonly experience HIB agree that this culture is improving. At the same time, we are seeing slow and uneven progress in reduction of actual incidence of HIB

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at UW-Madison. We close with some “lessons learned” about instituting such a sweeping, campus-wide effort to reduce HIB, in the hopes that other campuses can learn from our experience.

Keywords: Bullying; academic bullying; workplace bullying; academia; higher education; climate surveys; academic policy; harassment; incivility

Introduction

Academic “bullying” is a form of harassment and intimidation that has been shown to create a hostile working environment for faculty, staff, and student targets of the bullying (Akella, 2020; Prevost and Hunt, 2018). The types of behaviors that many studies define as “bullying” include negative acts such as spreading gossip or rumors, withholding information, or yelling. This behavior must typically be repeated and persistent, creating a “hostile work environment,” in order to be defined as “bullying.”

Academic bullying is related to other forms of harassing behaviors in the workplace such as sexual harassment and discrimination, but at UW-Madison we treat it as distinct due to the legal landscape in the United States around these different types of harassing behaviors. Sexual harassment refers to a broad category of behaviors that can include hostile working environments, quid-pro-quo harassment, sexual misconduct, sexual assault, stalking, and other forms of harassment and intimidation related to targeting of a victim as a sexual object (Bondes-tam and Lundqvist, 2020). These kinds of harassment are not only prohibited by state and federal laws in the United States, but in academia are specifically governed by Title IX of the Education Amendments of 1972. Discrimination – differential treatment based on any protected status including sex or gender, racial/ethnic background, sexual orientation, veteran status, religion, age, disability, and others – is similarly covered by both federal and state employment laws (Equal Employment Opportunity Commission). Bullying, in contrast, is not typically an “illegal” workplace behavior (e.g., Chew, 2010; Ballard and Eastal, 2018; Hodgins, MacCurtain, and Mannix-McNamara, 2020). It is not “illegal” to yell at someone, consistently leave them off of meeting invitations, or advise students not to work with a particular professor, unless of course those actions can be proven to have occurred due to the specific situations of sexual harassment or discrimination. Bullying behaviors are rarely punishable under existing harassment and discrimination laws and yet are no less harmful.

Power dynamics are a hallmark of this type of behavior, in that the party with less power and status is typically unable to defend themselves (Salin, 2001; Hodgins and Mannix McNamara, 2019; Hodgins, MacCurtain, and Mannix-McNamara, 2020). The environment created by bullying thus defined can lead to reduced productivity (Lampman et al., 2016; Cassell, 2011; Fogg, 2008), physical symptoms including both mental and physical health symptoms (Cassell, 2011; Keim and McDermott, 2010; Lampman et al., 2016), lawsuits and scandal (Cassell, 2011; Lampman, 2012), and attrition from the university (Faria, Mixon,

and Salter, 2012). Research shows that in academia, targets of academic bullying are disproportionately members of underrepresented identities (Striebing, 2022a, 2022c), including women (Lampman, 2012; Schraudner, Striebing, and Hochfeld, 2019), persons of color (Lampman, 2012), sexual minorities (Misawa, 2015), and persons with disabilities (Leymann, 1993, as cited in Hecker, 2007).

Given the well-known gaps in work satisfaction and attrition in academia of these very groups (Collaborative on Academic Careers in Higher Education [COACHE], 2014; Stewart and Valian, 2018; Striebing, 2022b; WISELI, 2020), it is imperative to address academic bullying if we hope to recruit, retain, and enhance the productivity and careers of persons currently underrepresented in academia. Correlating the data on differing rates of satisfaction among faculty members based on status and background with that identifying the physical and psychological costs of bullying in the workplace, it is possible to hypothesize that one significant reason why universities have not been more successful in their efforts to recruit and retain a more diverse workforce is due to their failure to address bullying. It is also possible that universities may be able to reduce costs associated with faculty and staff turnover and mental health – not just financial costs but also costs to the well-being of its people – by making efforts to reduce bullying among its employees.

Policy Action to Reduce Academic Bullying at the University of Wisconsin-Madison

At the University of Wisconsin-Madison (UW-Madison), incidences of academic bullying have been publicized in local media for several decades (e.g., UW-Madison Oral History Project, 2003; Wisconsin State Journal, 2019). Campus organizations such as the Ombuds Office, the Employee Assistance office, and the Office of Equity and Diversity consistently reported that bullying behaviors were a sizeable proportion of the employee complaints that they uncovered (UW-Madison Ombuds Office, 2017). It was acknowledged by these groups that bullying behavior was difficult to eradicate with the existing policies and practices of our university because human resources issues were often confidential and therefore employees who engaged in this behavior could be moved from unit to unit with no knowledge of the bullying behavior following the individual. Furthermore, without good campus policies and procedures around these issues, retaliation against persons who reported this behavior were common, potentially leading to under-reporting of bullying behavior (Schraudner, Striebing, and Hochfeld, 2019; Ballard and East-eal, 2018). Finally, a sense of resignation that no progress could be made in this area due to the tenure protections of faculty members hindered efforts to address the issue. No consistent measurement of the incidence of bullying behavior on the UW-Madison campus had ever been undertaken, so the prevalence of the behavior was unknown.

In the early 2010s, the UW-Madison became increasingly concerned about incidents of academic bullying on the campus, especially in relation to the loss of treasured faculty and staff who are members of underrepresented groups. Begun by an ad hoc working group led by the deans of two colleges at the university in

2013, the effort culminated in the creation by shared governance groups of official policies and initiatives designed to address bullying behavior among faculty and staff at the University. In 2014–2016, these policies were formally approved by all three major governance groups¹ at the University. The new policies were passed first by the Faculty Senate in November of 2014, then by the Academic Staff Assembly in December 2014, and finally by the University Staff in December 2016. Recognizing that policy in itself is insufficient (Hodgins, MacCurtain, & Mannix-McNamara, 2020), in the 2015–2016 academic year, a committee comprised of faculty and staff met to determine how to implement the policies and to build a set of initiatives around the policies that would help the campus community understand the nature of hostile and intimidating behavior (HIB), its effects, and its prevention. The committee presented its recommendations in the fall of 2016 (UW-Madison, 2016) and the provost's office began the implementation process shortly thereafter.

The new policies and initiatives were designed to create institutional transformation around the complex (Greenhalgh and Papoutsis, 2018), multilevel issue of academic bullying by addressing it from multiple levels (Kalpazidou Schmidt and Cacace, 2018; Anicha et al., 2017) – at the structural level through institutional policy and resources; at the cultural level through training and education programs; and at the individual level through invitations to intervene and to advocate for oneself and others on this issue. The enforcement of these policies relied on existing mechanisms for discipline, dismissal and appeal.

The implementation of the policies passed by the UW-Madison governance bodies are composed of six elements, with some small differences among the groups.

1. *Definition of “hostile and intimidating behavior.”* In order to eliminate the destructive behavior known as “bullying” in much of the literature, we needed to have a single and clear definition of this behavior in order to create consistent and uniform policies and practices, as well as define the new norms we wish to have at UW-Madison. Given that there is no universally agreed-upon definition (Hodgins and Mannix McNamara, 2017), our governance bodies created the new term “hostile and intimidating behavior (HIB),” defined as “unwelcome behavior pervasive or severe enough

¹UW-Madison has three main governance groups: A faculty senate, an academic staff assembly, and a university staff congress. “Faculty” consist of the traditional jobs of “assistant professor,” “associate professor,” and “professor”; the associate professor and professor titles have tenure. Academic staff and university staff are designations for different types of non-tenure-eligible staff positions in the university, primarily based on job duties. University staff perform jobs that are comparable to other state employees and are or were in the past represented by state employee unions (e.g., administrative support, building trades, security and public safety, and fiscal staff services). Academic staff perform jobs that are unique to the university (e.g., lecturer, researcher, or academic advisor).

that a reasonable person would find it hostile and/or intimidating and that does not further the University's academic or operational interests." On our campus, what most people refer to as "bullying" is known as "HIB." This definition is further embellished on the UW-Madison HIB website (UW-Madison, 2017).

2. *Create new procedures for reporting HIB.* The governance groups created two avenues for addressing HIB behaviors. *Informal approaches* include gathering information, consulting multiple campus resources (including HIB liaisons, see below), having the target of the behavior address the behavior in a conversation with the source of the behavior (with or without an intermediary), or bringing the matter to a superior to seek advice. *Formal approaches* involve filing a written complaint, which is investigated by various offices, and could include filing a grievance if the complaint does not address the issue.
3. *Define best practices for handling HIB as a supervisor, or as a bystander/peer.* In order to foster a new campus culture eliminating HIB, our entire workforce needs to know how best to handle these situations. Governance groups ensured that there were best practices communicated to rank and file faculty and staff, human resources (HR) representatives in the schools and colleges, department chairs and deans, and the university HR managers, to engage the entire community in shared responsibility for addressing and mitigating the occurrence of HIB.
4. *Create accessible resources including a website.* To communicate the new policies and information about best practices for addressing HIB, at minimum a website must be created to disseminate the new information to the campus community. Other resources (e.g., lists of relevant offices, easy-to-follow guidelines for addressing HIB issues that arise) also needed development as well as a communication strategy for making these resources available (UW-Madison, 2017).
5. *Create a training program about the new HIB policy and resources.* A 90-minute in-person workshop, currently also offered on a virtual platform, informs faculty and staff on what HIB is, how to distinguish it from other harmful behavior, and provides a deeper understanding of policies and procedures to address it, in an effort to promote cultural change. Twenty volunteer faculty and staff, from schools, colleges and divisions across the campus, serve as workshop facilitators.
6. *Train trusted faculty and staff liaisons from many different campus units to provide confidential advice about HIB.* A key element to adding resources to our campus so that anyone with a HIB issue can find a way to address it is to increase the number of people who are trained to give advice and help. A new set of trained, well-connected, and trusted people, "HIB Liaisons," were trained to be a new resource for people either experiencing HIB, or accused of it. In addition, HR representatives and HR managers have been trained to understand the dynamics of HIB and how to address it when consulted by faculty, staff, and administrators.

These new policies and practices are similar to approaches taken at other academic institutions (Hodgins, MacCurtain, and Mannix-McNamara, 2017, 2020) and have now been in place at the UW-Madison for approximately four years, if we consider the “start” of the policy to be the date on which the website was introduced in Summer of 2017, advertising the policies and their implementation to the entire UW-Madison community. In this paper, we wish to understand whether and how they are working in the complex system that is UW-Madison. Addressing the problem of HIB at multiple levels, we have the infrastructure in place to manage incidents of HIB; we are working to change the culture around HIB through education; and we are providing individuals with more opportunities and methods for dealing with this behavior and preventing it before it happens. Are we achieving our goals? To uncover whether we are making progress toward decreasing and ultimately eliminating the incidence of HIB on the UW-Madison campus, we examine several data sources to learn:

1. Are people at UW-Madison more aware of HIB than they used to be?
2. Do people at UW-Madison know what to do if they experience HIB, or if someone comes to them with a concern about HIB?
3. Do people from underrepresented groups who are differentially impacted by HIB feel that the campus is dealing with it appropriately?
4. Do people from underrepresented groups disproportionately experience HIB, and is that incidence increasing or decreasing since the new policies were enacted?
5. Is the overall incidence of HIB at UW-Madison increasing or decreasing?

Data Sources

Data from three sources will help us examine these questions about culture change around HIB and incidence of HIB over time at UW-Madison.

Hostile and Intimidating Behavior Workshop Evaluations

The primary way that the new UW-Madison policy will address culture change around HIB is through a 90-minute case-based workshop, available either to faculty and staff as individuals, or to department/units at UW-Madison who request a workshop (UW-Madison, 2016). A working committee composed of 11 faculty and staff created the content, and it was piloted in early 2018, with an initial version of the workshop presented to groups of campus leaders including deans, department chairs, center directors, and managers. After adjusting the content following the early sessions, the workshops were launched to the broader campus in July 2018. By fall of 2019 the workshops were offered to night shift employees and employees who speak Spanish, Tibetan, Mandarin, Hmong, and Nepali languages. By Summer 2020 (and including pilot workshops), we have delivered 64 workshops to approximately 1,444 individuals, most of whom are in the academic staff and university staff employment categories; few are faculty except for campus leaders such as department chairs. The campus has trained a group

of 20 presenters to deliver these workshops, and most workshops are run by two to three facilitators per workshop. Workshops are advertised to UW-Madison faculty and staff through the “Working at UW” campus newsletter for employees, the HIB website (UW-Madison, 2017), the employee professional development course catalog, as part of new employee orientation, programming for new department chairs, and training for supervisors.

Within 24 hours of workshop participation, attendees are emailed an online workshop evaluation form, and we have consistent data from these forms for January 2019 through October 2020. Approximately 38% (338/891) of the attendees during this period have completed this form. Data from the workshop evaluation forms can inform us whether our goal of changing the UW-Madison culture around HIB is successful, at least for the employees who have been through the training. No demographic data were collected on these forms so we are unable to examine differential responses of different groups.

Study of Faculty Worklife at UW-Madison (SFW)

At various intervals since 2003, the Women in Science & Engineering Leadership Institute (WISELI, a campus research center) has been fielding a climate survey of UW-Madison faculty members, the *Study of Faculty Worklife (SFW) at UW-Madison* (WISELI, 2020). In 2016, WISELI asked four new questions about HIB on the survey, and followed them up with the same items in 2019. Because the HIB policies and definitions were not widely disseminated across campus until at least 2017, when the HIB website was introduced and the workshops made available, or even 2018 when the new website was advertised to the UW-Madison community (UW-Madison News, 2018), the 2016 items will provide a “baseline” for HIB incidence and awareness among faculty, against which change can be assessed in 2019 (Table 25).

The advantage of the SFW survey is that we can assess differences between groups of faculty on their responses to the HIB questions, over time. Where sample size is large enough, we can also look at identity intersections (e.g., women with disabilities vs. women without) to more clearly understand which groups are most affected by HIB, and whether we are seeing improvements after implementation of the new campus policies.

In 2016, 1,285 faculty completed the survey, for a 58.6% response rate. In 2019, 1,116 responded, for a response rate of 53.1%. See Table 26 for detailed response rate information for each demographic group in the analysis.² Note that faculty of color (those who identify as Black, Asian, Hispanic/Latinx, Native American, Pacific Islander, or indicate a bi-racial identity) respond at higher rates than the general population, particularly men of color.

²Detailed information about variable construction is available upon request. LGBT is an acronym for Lesbian, Gay, Bisexual, and/or Transgender. Our survey did not ask about other identities for sexual/gender identity minority groups.

Table 25. Timeline for HIB Policy and Measurement at UW-Madison.

Date	Event
Summer 2013	Two Deans convene an ad hoc working group to begin discussing issues of HIB at UW-Madison
November 2014	Faculty Senate passes HIB policy
December 2014	Academic Staff Assembly passes HIB policy
Fall 2015–Spring 2016	Ad Hoc Committee on Hostile and Intimidating Behavior convened to create policy implementation recommendations
Spring 2016	Faculty and Academic Staff climate surveys implemented
October 2016	Ad Hoc Committee on Hostile and Intimidating Behavior submits recommendations
December 2016	University Staff Congress passes HIB policy
July 2017	HIB website introduced
January 2018	University News advertises new website to faculty and staff
July 2018–Present	HIB workshops available to campus
Spring 2019	Faculty and Academic Staff Climate Surveys implemented

Study of Academic Staff Worklife at UW-Madison (SASW)

In 2016 and 2019, conducted in parallel with WISELI's *SFW*, the Academic Staff Executive Committee³ commissioned a survey of all academic staff at UW-Madison, including items on HIB that were almost identical to the faculty survey. Because the size of the academic staff population at UW-Madison is so large, the number of responses (and therefore the ability to look at differences among different demographic groups) is much higher in the academic staff survey, even though the response rate is lower overall (see Table 26). In this group, notice that staff of color (defined in the same way as faculty, above) respond at about half the rate of their majority counterparts, with women staff of color slightly more likely to respond than men staff of color – but these rates are still much lower than their white counterparts.

Analytic Framework

Analysis of the evaluation form data necessarily is at a summary level only. No questions were asked about demographic group, or even what employment category a respondent is in. In contrast, data from the *SFW* and the *Study of*

³The Academic Staff Executive Committee is the executive body for academic staff governance at UW-Madison.

Table 26. Response Rates, Climate Surveys.

Study of Faculty Worklife												
2016						2019						
All		Men		Women		All		Men		Women		
N	%	N	%	N	%	N	%	N	%	N	%	
All	1,285	58.6	815	56.4	470	62.8	1,116	53.1	680	50.6	436	57.7
Person of color	208	71.2	131	75.3	77	65.3	190	64.6	102	60.4	88	70.4
LGBT	56	**	30	**	26	**	54	**	23	**	31	**
Disability	153	**	86	**	66	**	147	**	72	**	75	**

Study of Academic Staff Worklife												
2016						2019						
All		Men		Women		All		Men		Women		
N	%	N	%	N	%	N	%	N	%	N	%	
All	2,350	33.2	586	19.2	1,228	31.1	2,552	25.7	653	15.1	1,607	28.7
Person of color	143	15.4	50	11.7	93	18.7	202	13.8	60	9.5	142	17.1
LGBT	147	**	52	**	95	**	239	**	77	**	162	**
Disability	276	**	92	**	184	**	435	**	117	**	318	**

**Cannot calculate response rate because the number of LGBT and/or persons with disability in the faculty/staff overall is unknown.

Academic Staff Worklife includes demographic data based on gender identity, racial/ethnic identity, sexual orientation, and disability status. The sample sizes of these studies allow us to investigate how HIB may be affecting the worklife of some intersections of these identities, for example, men versus women of color. We look at these differences at the mean, understanding that the small sample sizes do not always allow for analyses of statistical significance in differences between and among groups.⁴ Therefore, we take a broader approach, looking for patterns and trends to characterize the experiences of HIB among different identity groups.

We are interested in overall trends for all faculty and staff, but are especially interested in the groups that previous studies have shown may experience higher rates of academic bullying, specifically women, non-white, and LGBT (Lesbian, Gay, Bisexual, and/or Transgender) faculty and staff, and faculty and staff with disabilities. Further, within racial/ethnic, sexual orientation, and disability minority groups, it is important to look at gender differences, as men within these groups may have different experiences than women. Thus, our intersectional approach does not examine every intersection of these identities, but does examine the gender intersection, as that might be theorized to have large differences in experiences of bullying/HIB (Misra, Vaughan Curington, and Green, 2020).

Results

First, we examine the extent of culture change around HIB at UW-Madison in the period from 2016 to 2019. We will examine the awareness of the issue among faculty and staff and the knowledge of what to do if HIB appears in one's workplace. We will then focus more narrowly on whether people in underrepresented groups feel there has been progress in the area of campus culture.

Workshop evaluation data show that individuals who have completed the HIB workshop have increased their awareness and knowledge of HIB as an important issue on campus. As shown in Table 27, over 65% of those who attend the workshop and fill out an evaluation form "strongly agree" that "I understand why HIB is a campus issue that we all must address." Almost 50% "strongly agree" that "the workshop increased my awareness about the frequency of HIB." Large majorities of attendees either "agree" or "strongly agree" that they have "learned how to recognize HIB," "learned the campus policy definitions of HIB," "learned how to address HIB when it happens," and "know where to find resource to help prevent and address HIB." "Learning how to address HIB when it happens" is perhaps the least well-learned skill taught in the training, with almost 15% of respondents reporting that they did not learn this skill. Certainly, these responses could reflect some social desirability effects, but because the forms are filled out in private, online, and not in the workshop itself in front of the presenters, we hope those effects are minimized.

⁴We performed two-tailed *t*-tests between groups and across survey waves, with statistical significance defined as $p < 0.05$.

Table 27. Improved Knowledge of HIB by Workshop Attendees.

	% Strongly Disagree	% Disagree	% Agree	% Strongly Agree
I have learned how to recognize HIB	0.0	5.7	54.1	36.9
I have learned the campus policy definitions of HIB	0.0	1.6	58.2	39.3
The workshop increased my awareness about the frequency of HIB	0.0	5.7	45.1	48.4
I understand why HIB is a campus issue that we all must address	0.0	0.8	32.0	65.6
I have learned how to address HIB when it happens	2.5	12.3	50.8	33.6
I know where to find resources to help prevent and address HIB	0.8	4.1	49.2	44.3

Note: $N = 338$. Approximately 338/891 workshop attendees responded to these items between January 2018 and October 2020.

Some items in the workshop evaluation form assessed knowledge gains around HIB by comparing an attendee's self-reported knowledge of concepts before the workshop to their knowledge after the workshop. In Table 28, we see that well over half of workshop attendees are leaving the workshop with "much knowledge" about the campus definition of HIB, the prevalence of HIB on the UW-Madison campus, the campus policies that address HIB and where to find them, how to identify HIB when it occurs in the workplace, and where to go for assistance in addressing HIB. The most knowledge gains came in the area of "how/where to find the relevant campus policies about HIB."

It seems obvious that persons who have attended a 90-minute workshop about HIB should increase their knowledge and awareness in these areas. Because only 2,297 individuals out of the 17,865 faculty and staff employees at UW-Madison (Data Digest, 2020) have attended one of the HIB workshops (about 13%), it is useful to look at campus-wide data to see if the diffusion of this knowledge is spreading beyond the persons who took the workshop, to more faculty and staff on campus, resulting in greater change in the culture around HIB.

We turn to the campus climate surveys to look for change in awareness of HIB issues across the entire faculty and academic staff employment groups, as an indicator of culture change. Comparing responses to four items designed to measure

Table 28. Knowledge Gains for HIB Workshop Attendees.

	Before Workshop					After Workshop				
	No Knowledge (%)	Little Knowledge (%)	Some Knowledge (%)	Much Knowledge (%)	Mean	No Knowledge (%)	Little Knowledge (%)	Some Knowledge (%)	Much Knowledge (%)	Mean Difference
Q1	18.3	34.3	38.2	8.9	1.4	0.9	0.0	27.8	68.9	2.7
Q2	22.8	38.2	30.8	8.3	1.2	0.6	0.0	27.8	67.8	2.6
Q3	24.3	36.1	32.2	7.1	1.2	1.2	0.0	33.1	60.4	2.5
Q4	26.0	32.8	31.1	10.1	1.3	0.6	0.0	20.1	77.2	2.7
Q5	9.2	27.5	48.8	13.6	1.7	0.6	0.0	28.7	67.5	2.6
Q6	17.5	40.8	32.5	9.2	1.3	0.6	0.0	20.7	74.9	2.7

Note: N=338.

Q1: How the university defines hostile and intimidating behavior

Q2: How prevalent incidences of hostile and intimidating behavior are on the UW-Madison campus

Q3: What the campus policies are that address hostile and intimidating behavior

Q4: How/where to find the relevant campus policies about hostile and intimidating behavior

Q5: How to identify when hostile and intimidating behavior occurs in the workplace

Q6: Where to go for assistance when hostile and intimidating behavior happens to me or to someone else

knowledge and awareness of HIB issues, we see significant increases in knowledge and awareness for faculty on all four measures, and significant increases for academic staff on three of the four items.

As shown in [Table 29](#), faculty report feeling more often in 2019 that HIB is treated seriously on campus and that HIB is a common occurrence on campus than they did in 2016. In addition to the mean increases, the percentage of faculty who responded “don’t know” (DK) decreased significantly during this time frame which also indicates a knowledge gain. Importantly, faculty members’ knowledge of the steps to take if a person comes to them with concerns about HIB behavior moved from a mean that indicated “a little” or “somewhat,” to a mean that was between “somewhat” and “very” knowledgeable about the steps to take. Faculty also reported a slight increase between 2016 and 2019 in their belief that the HIB complaint process at UW-Madison is effective.

Members of the academic staff also reported gains on these indicators, although the increases were not always statistically significant ([Table 29](#)). Like faculty, they reported an increase in the seriousness with which HIB is treated on campus, and reported gains in knowledge of what to do if someone approaches them with a HIB issue. Academic staff, in fact, were much more knowledgeable on both of these items than faculty, reporting higher means and fewer “don’t know” responses. Academic staff survey participants did not change their view of how common HIB is between 2016 and 2019, nor did they change their opinion of the effectiveness of the process for resolving HIB, although more academic staff had an opinion on this later point (fewer responded “don’t know”) than in 2016.

It seems clear that we have made significant improvements in UW-Madison’s culture around HIB on our campus. More members of the faculty and academic staff think the behavior is treated seriously, more know what to do if someone comes to them with a HIB issue, and more think that the process for resolving HIB is effective. However, in addition to asking whether faculty and academic staff overall have improved their knowledge and awareness of HIB issues in the years since the new policies were enacted, it is very important to know whether members of groups that are underrepresented – those most likely to experience HIB behaviors – also sense this improvement in the culture. In [Figs. 10](#) and [11](#), we examine this question for faculty and academic staff, to understand whether women, persons of color, LGBT persons, and persons with disabilities, as well as the intersection of these last identities with gender, also sense this change in culture around HIB. The graphics display the change in means on two items from 2016 to 2019. A bar above the *x*-axis indicates a positive change, while a bar that is below the *x*-axis indicates a negative change for that group. We performed statistical tests to determine the significance of these changes. These significance indicators are not noted in the figures, but are available upon request.

Many of the members of underrepresented groups who are most impacted by HIB (women, and men and women who identify as a person of color, and/or as having a disability) also have increased their agreement that HIB is being treated seriously on campus, and that the process for resolving it is effective. These increases were statistically significant for women as well as men faculty, faculty members of color, and women and men members of the academic staff

Table 29. HIB Knowledge on UW-Madison Campus.

	All Faculty							
	2016				2019			
	N	Mean	SD	%DK	N	Mean	SD	%DK
How seriously is HIB treated on campus?	771	3.1	1.2	39.0	808	3.4*	1.1	26.8*
How common is HIB on campus?	608	2.7	1.0	51.9	620	2.9*	1.0	43.8*
How well do you know the steps to take if a person comes to you with concerns about someone who is behaving in a hostile or intimidating way?	1,099	2.9	1.0	12.9	1,020	3.2*	1.0	7.5*
How effective is the process for resolving complaints about HIB at UW-Madison?	395	2.6	1.1	68.7	426	2.8*	1.1	61.4*
All Academic Staff								
	2016				2019			
	N	Mean	SD	%DK	N	Mean	SD	%DK
	1,447	3.6	1.0	29.9	1,944	3.8*	0.9	20.9*
How seriously is HIB treated on campus?	1,042	3.2	0.9	49.4	1,278	3.2	0.9	48.0*
How common is HIB on campus?	1,895	3.1	1.0	8.1	2,364	3.4*	1.0	3.7*
How well do you know the steps to take if a person comes to you with concerns about someone who is behaving in a hostile or intimidating way?								
How effective is the process for resolving complaints about HIB at UW-Madison?	549	2.8	1.0	73.4	768	2.9	1.0	68.7*

Response categories: 0 – Not at all; 1 – A little; 2 – Somewhat; 3 – Very; 4 – Extremely. DK = “don’t know”.
 * Two-tailed *t*-test indicates significant change from 2016 to 2019 ($p < 0.05$).

(not shown; available upon request.) Although not statistically significant, LGBT women faculty, and LGBT men staff, showed decreases in their assessment of the seriousness with which campus treats HIB.

A similar pattern is observed for the item, “How effective is the process for resolving complaints about HIB at UW-Madison?” in Fig. 11. Again, women, persons of color, and disabled persons are generally more likely to agree that the process for resolving HIB complains is effective in 2019, than they were in 2016. This is statistically significant for women faculty and staff, and men staff (but not men faculty.) Again, although not statistically significant, LGBT faculty, and to a lesser extent academic staff, are not as sanguine about the efficacy of the HIB complaint process, in that these groups feel the HIB complain process is less effective in 2019 than it was in 2016.

Next, we ask the important question of outcome – have we reduced the incidence of HIB overall, and especially among underrepresented faculty and staff, since adoption of the new policies? Here, we can also turn to our three data sources. The post-workshop evaluation survey asked participants whether they have had personal experience of HIB at UW-Madison, or whether they had observed the behavior. After completing the workshop (and thus having a clearer understanding of HIB), 58.2% of workshop participants reported experiencing HIB, and 65.6% reported observing it. This percentage is quite a bit higher than that reported in the two climate surveys for faculty and academic staff (see below), and a great deal higher than rates of bullying reported in some other surveys (e.g., Salin, 2001; Birkeland Nielsen, Matthiesen, and Einarsen, 2010; Schraudner, Striebing and Hochfeld, 2019). This could be due to a selection bias, as people might be more likely to attend a workshop if they have experienced HIB so they can learn something about how to deal with it. This might also be a function of the question wording, as the question inquires about ANY experience of

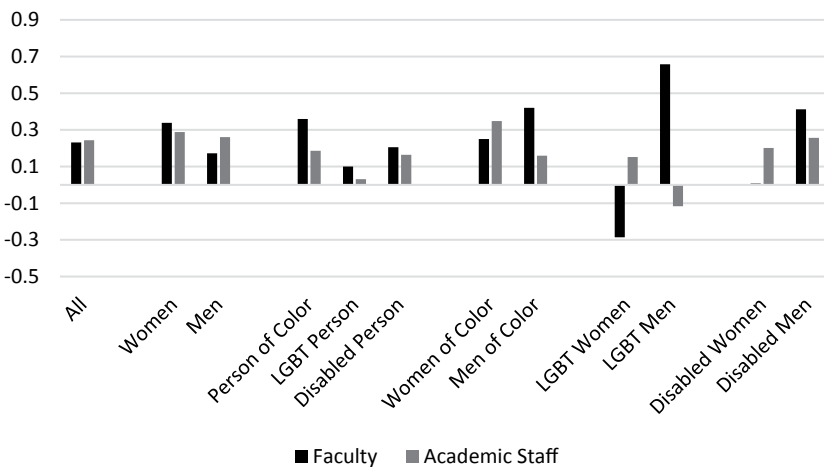


Fig. 10. How Seriously is HIB Treated on Campus? Change in Mean From 2016 to 2019.

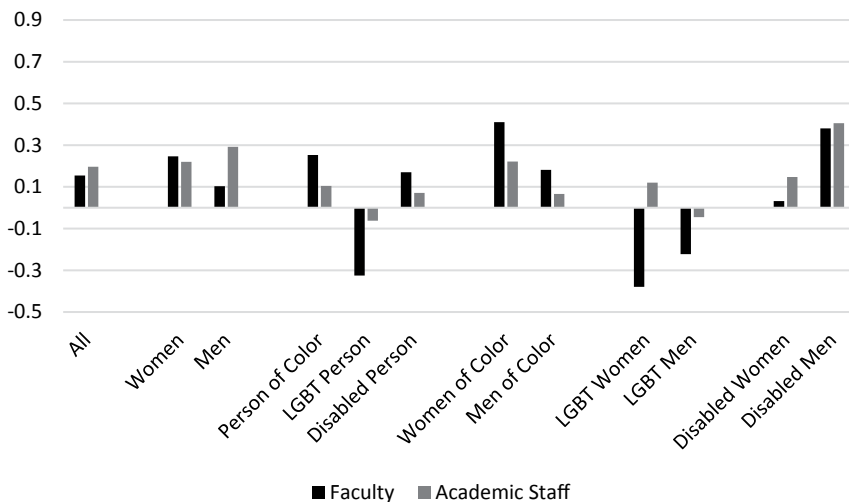


Fig. 11. How Effective is HIB Complaint Process? Change in Mean From 2016 to 2019.

HIB and does not restrict it to a two- or three-year time frame, as other surveys on our campus do (or a one-year time frame in other studies). This interpretation is further supported by some 2020 data from a subset of university staff employees, which shows that 34% of university staff have experienced at least one incidence of HIB in the past two years (EID Survey, 2020). This incidence is more similar to that for both the faculty and academic staff members who responded to the climate surveys, as shown in Figs. 12 and 13.

We report the percentage of faculty who have experienced at least one incidence of HIB in the past three years in Fig. 12. In 2016, approximately 36% of faculty reported experiencing at least one incidence of HIB in the three years prior to the survey,⁵ and in 2019 that percentage increased to 39%. We have performed statistical comparisons across survey waves, and between and among all demographic groups, including the intersections of demographic characteristics.⁶ For members of the faculty, we found no statistically significant changes in experience of HIB from 2016 to 2019, although it is easy to see that there is a general pattern of increase for most of the groups we analyzed, with LGBT faculty members (gay men in particular) showing the largest increases. (These increases

⁵The exact question provides a definition of Hostile and Intimidating Behavior, and then asks, "Given this definition, within the last three years, how often have you personally experienced hostile or intimidating behavior on the UW-Madison Campus?" Response categories are Never, 1–2 times, 3–5 times, and More than 5 times (WISELI, 2020).

⁶Available upon request.

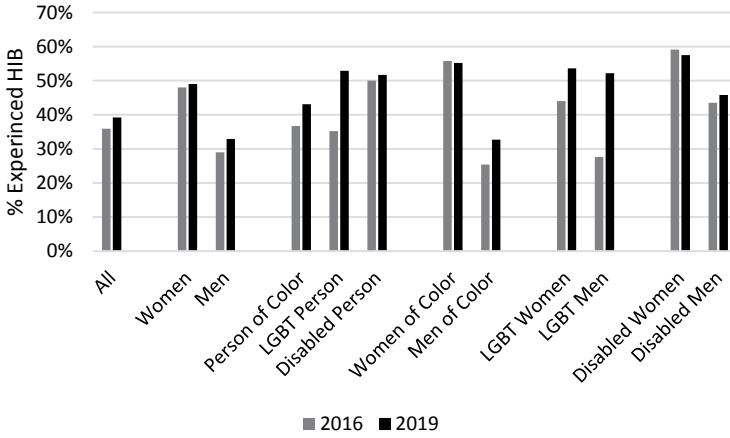


Fig. 12 Personal Experience of HIB at Least Once in Past Three Years: Faculty.

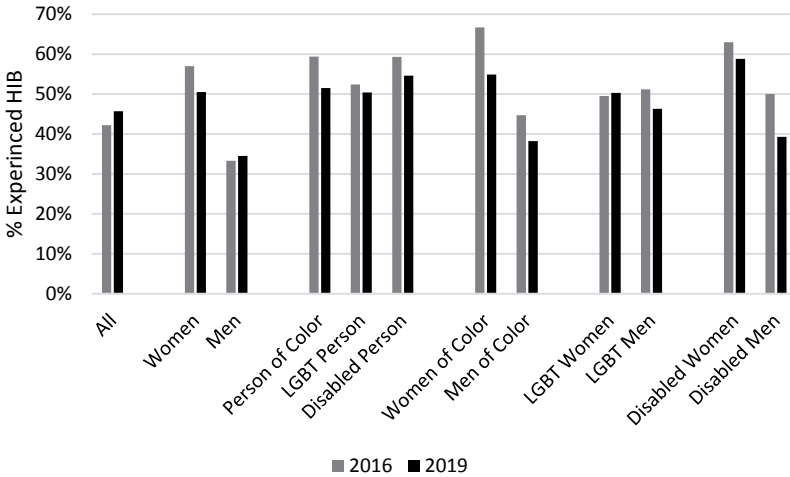


Fig. 13. Personal Experience of HIB at Least Once in Past Three Years: Academic Staff.

do not reach the level of significance due to the small sample size.) Men of color also reported increases in HIB incidence in this time frame. In Fig. 12, you can see the gaps in incidence for many demographic groups, as we expected from previous research on bullying. For example, women faculty report experiencing HIB much more often than men faculty, and these gender gaps appear among faculty of color, and among faculty with disabilities as well. Persons with disabilities consistently report more HIB than faculty overall, and this is true for both men and women faculty with disabilities.

Academic staff were asked the identical question as faculty, and for them, some different patterns emerge. As shown in Fig. 13, despite the statistically significant increase in incidence of HIB overall between 2016 and 2019 (42.2% in 2016 vs. 45.7% in 2019, $p < 0.018$), most of the underrepresented demographic groups we investigated actually saw a decreasing incidence of HIB. The overall increase appears to be coming primarily from white women and men, who are numerically the largest group in the sample of Academic Staff respondents (Table 26).

As with the faculty group, you can see trends of differential experience of HIB by academic staff demographic group. Women report higher levels of HIB than men, including among staff of color, and staff with disabilities. Persons of color, LGBT persons, and persons with disabilities also generally report higher levels of HIB incidence than the general population of academic staff, particularly in 2016. Among women staff, women of color and women with disabilities report the highest levels of HIB, while among men staff, it is gay men and men with disabilities with the highest levels of reported HIB, particularly in 2016.

Overall, then, if our goal is to reduce the incidence of HIB in our faculty and academic staff populations, the results appear to show a change is in process. Faculty report increases in HIB between 2016 and 2019, as do academic staff overall. But the increases in reported HIB for faculty are (except for LGBT faculty, see below) small and not statistically significant, and the most vulnerable populations of academic staff actually reported decreasing levels of HIB between 2016 and 2019. We unfortunately do not have time-series data for HIB experiences of our university staff.

Given the clear increase in awareness of HIB and generally increased faith the process for addressing HIB is effective, why is HIB incidence not decreasing? It may be that not enough time has elapsed, particularly for faculty populations. Except for campus leaders such as department chairs, faculty rarely participate in the HIB workshops we described above. The HIB website (UW-Madison, 2017), which is one of the best sources for information about HIB that is easily accessible to everyone on campus, only came online in summer 2017. The knowledge of campus policies related to HIB may be reaching the general population of faculty more slowly than that of academic and university staff. It might be the case that as this knowledge does diffuse through the faculty, many are coming to understand that some negative interpersonal interactions can be defined as HIB, and thus reporting on a survey increases as this knowledge diffuses. Another possibility could be a genuine increase in HIB – especially targeting our LGBT and male faculty of color – in the time period between 2016 and 2019. This period in the United States has been fraught with increased levels of explicit racist, homophobic acts (e.g., Southern Poverty Law Center, 2020) and university campuses are not immune from these trends; indeed, such influences are a contributing factor to the University as a complex system (Greenhalgh and Papoutsis, 2018).

Where we do see the improvements in HIB behavior at UW-Madison is for academic staff employees. Across all of the groups that have been documented in other studies to experience higher levels of HIB, all groups except white women and lesbian women showed a decrease in reported incidence of HIB over the study period (although this is not statistically significant). Gay men, women with disabilities,

and men of color had only very small decreases in reported incidence of HIB. This lends some evidence toward the explanation that the general environment in the United States in this time period contributed to more LGBT persons and men of color to experience negative behaviors in the workplace that could be described as HIB. However, the decrease in reported HIB for other groups, particularly women of color, gives some hope that the new policies are having their intended effect at UW-Madison, as academic staff are a very large group who has participated in the HIB workshops and has had the HIB policies in effect the longest.

Despite some optimism in terms of changes to campus culture around HIB as well as some positive trends (particularly among academic staff) in the experience of HIB, we are mindful that the new policy may be less effective for our LGBT colleagues. Although these trends are never statistically significant due to the small numbers of self-identifying LGBT faculty members in our survey samples, the fact that they are similar for both faculty and academic staff, as well as across a number of indicators, is cause for a more detailed review, and the UW-Madison is investigating this question in more detail in order to improve the HIB policies and procedures for all.

Limitations

We must note a number of limitations to our study. First, we are primarily examining outcomes data from 2019 and 2020. While the HIB policies were first enacted (for faculty and academic staff) in 2014, the website was not introduced until 2017, and the educational efforts around them did not begin in earnest until 2018. Perhaps there has simply not been enough time between the implementation of the policies and initiatives and the current moment to see a real reduction in HIB. In fact, it is possible that we would expect to see more reporting of HIB as people at UW-Madison learn to recognize it more readily in their environments.

Another limitation to our study is our reliance on only three data sources, and imperfect ones at that (Wolpert and Rutter, 2018). In particular, there is a lack of good survey data for our large population of university staff employees. These employees are predominately hourly employees with limited privilege and power in our university (Hodgins, MacCurtain, and Mannix-McNamara, 2020), and thus might arguably experience more HIB than other employees due to status differences in their positions and those of faculty and academic staff members. Some university staff units do have regular surveys, and these units added a question about HIB to their 2020 survey, so we should have good time-series data for some members of the university staff into the future. The baseline for this survey, as mentioned above, is 34% of university staff in these units reported at least one experience of HIB in the two years prior to the survey. Although on a shorter time frame than the faculty and academic staff surveys (which inquire about incidence in the three years prior to the survey), this incidence rate is similar to that reported by faculty, and lower than that for academic staff.

Other data sources that would be worth investigating in the future are interviews or reports from the units on campus to which HIB is reported. Qualitative data would not only provide a much richer description of the behaviors occurring

and the experience of the policies at an individual level, but also provide an explanation for experiences of ineffective policies, which could lead to more targeted improvements in those policies and practices. We did not attempt to ascertain what trends in HIB incidence our campus Ombuds, Employee Assistance Office, Human Resources Workforce Relations, or other offices are seeing. These would be important resources to mine in the further evaluation of the HIB policies and procedures in the future.

The uneven, slow, incomplete transformation of UW-Madison around issues of bullying is perhaps expected, given the complex nature of both the University (and academia in general), and the problem of bullying/HIB (Greenhalgh and Papoutsis, 2018). The hierarchical organizational structure of a university distributes power unevenly, and a professional culture that rewards productivity over other considerations creates a system where bullying behaviors can flourish with little to impede them. The HIB policies as enacted by the University attempted to engage the community at multiple levels. Systems were put in place at the institutional level to track behavior across departments, trainings were implemented to increase knowledge at both the unit and individual level in an attempt to change the culture around HIB, and pathways were enacted to provide individuals with choice and options when individually dealing with the problems of HIB. Our ability to measure any change to the system with the data at hand (evaluation forms and climate surveys) is certainly limited. At the same time, in a complex system there will never be perfect or complete data; decisions must always be made in the face of incomplete or contested data (Wolpert and Rutter, 2018). In our case, the imperfect, incomplete data provide a feedback mechanism to the complex interplay of policy and practices around HIB at UW-Madison so that adjustments may be made to improve HIB processes, and therefore the working experiences of all employees at UW-Madison.

Lessons Learned and Future Directions

In addition to long-term evaluation of our HIB policies and procedures at UW-Madison, we have discovered a number of “lessons learned” in our implementation of these new policies. We offer these insights for other campuses who embark on a concerted effort to eliminate the destructive presence of HIB, or “bullying,” from their own campuses.

- When we began this work, we started from an assumption that our departments and units on campus had a discipline and/or reporting process in place that could address poor workplace behavior. We had hoped to simply add new definitions of a specific type of behavior – HIB – to the existing structure so that there would be a campus-wide record of employees who engage in HIB. Instead, we found that most supervisors and department leaders did not have a good understanding of what to do when confronted with *any* poor behavior amongst their employees. We therefore recommend that there be a solid process for addressing poor behavior on campus in general, including discipline, before implementing a policy specific to HIB.

- “Bullying,” or HIB, can be difficult for people to distinguish from other kinds of poor workplace behavior. Because of the aforementioned lack of process or discipline for addressing any kind of poor workplace behavior, the new HIB policies became something of a “catch all” for any poor behavior in the workplace. This may also explain the increase in reporting that we noted for some groups. Understand and expect this tendency for an increase in reporting in the short-term and identify mutually understood and clear characteristics, as well as identification of other forms of concerning behavior (sexual harassment, protected-class discrimination, etc.) that may be addressed through other federal or local policies.
- Also in the short-term, you may encounter resistance from some who do not believe HIB is a large problem or, at the other extreme, think that such behavior is impossible to address. For example, some campus leaders at UW-Madison did not believe such behavior takes place at all, while others questioned whether we could do anything about it with policy (particularly in the case where a tenured faculty member was the bully). We have found that education and use of data with campus leadership helped to allay this resistance.
- For some people, an accusation of HIB has been used as a weapon, becoming itself a form of bullying to accuse someone else of HIB. We have seen instances of “dueling” HIB complaints. Highly skilled and trained professionals need to be available to address these situations when they arise.
- As the data showing the lack of significant HIB reduction suggests, the ability to recognize and report HIB does not presume that individuals have the confidence to interrupt it. We have found that supplemental education and resources are necessary to empower individuals interrupt HIB in their work environments.
- Any person assessing a HIB complaint must be well-trained in implicit and other forms of bias and discrimination. We have learned that the biases of complainants can come into play in their feelings of being bullied or feeling like a target of HIB. Complainants don’t always realize that they may be interpreting behavior differently based on a person’s gender, race/ethnicity, sexual orientation, other social or demographic characteristic, or the intersection of multiple identities. Those who adjudicate a HIB case must be aware of this possibility and adjust for it in their assessment of a case.

As we continue to refine the HIB policies and initiatives on the UW-Madison campus, we will continue to monitor their effectiveness into the future. Certainly, campus climate survey data for all of our employment groups should continually be monitored for incidence of HIB. A future project could also use exit survey data to understand whether an increased attention to HIB is having a positive effect on retention of faculty members from underrepresented groups. The UW-Madison is a participant in the COACHE exit survey of faculty (COACHE, 2021). When follow-up exit surveys are completed, we can ascertain whether academic bullying, or HIB, is a declining factor causing our underrepresented faculty members to leave the UW-Madison.

The UW-Madison is approximately four years into our experiment with policy, culture, and process changes designed to eliminate HIB, or academic bullying, on

our campus. Our data show that we are making inroads in changing the campus culture around HIB, as we have demonstrated an increase in the knowledge of HIB as a problem and an increase in knowledge about what to do about it. Many, but not all, of the members from underrepresented groups who more commonly experience HIB (women, persons of color, persons with disabilities) agree that this culture is improving. We have yet to see evidence that actual incidences of HIB at UW-Madison are decreasing since the adoption of these new HIB policies and procedures. For some groups – in particular, some groups of academic staff – we see some evidence of positive change. But for others we see either no change or even slight increases in HIB reporting. We continue to be concerned about the experiences of our LGBT colleagues, of all genders, with regard to bullying and the new HIB policies. As we move forward, gaining more experience with these policies and educating more of our faculty and staff about them, we hope to improve the climate and eliminate HIB for everyone on the UW-Madison campus.

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Chapter 7

Gender Differences in the Scientific Achievement of Social Sciences and Impact Factors: A Survey Study of Researchers in the Social Sciences in Vietnam

Huu Minh Nguyen, Thi Hong Tran and Thi Thanh Loan Tran

Abstract

“The world needs science, science needs women” is the message given by UNESCO in the program for the development of women in science” (UNESCO, 2017). In Vietnam, women’s participation and achievements in scientific research is considered a great and important resource for industrialization and modernization. Even so, are there gender differences in scientific achievement in the social science research institutes in Vietnam? What factors influence the scientific achievement of female social researchers? The answers will be based on data from a 2017 survey with a sample of 756 researchers, of which 77.6% were female. The survey was conducted by the Vietnam Academy of Social Sciences, a leading, ministry-level national center for the social sciences in Vietnam. This chapter analyzed the scientific achievements of researchers through their position as principal investigators of research projects and their publications, and factors that may impact this. Bivariate and multivariate analyses of factors that may affect the scientific achievement of researchers found that gender differences in academic achievement in the social sciences in Vietnam was still prevalent. Female researchers’ scientific achievements were lower than those of their male counterparts. The contribution to science of Vietnamese female researchers was limited by many different factors; the most important were

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the academic rank of the researchers and gender stereotype that considered housework the responsibility of women.

Keywords: Vietnam; female researcher; gender equality; women's scientific achievement; gender stereotype; gender differences in social sciences

1. Introduction

Women's participation in scientific activities is important in providing unique perspectives; implementing international commitments on gender equality and science; and adding value to science in ways that benefit women, communities, the economy and the greater society (Hays and Farhar, 2000). However, in reality, the proportion of women working in science is not high. Data for 2017 from UNESCO (2020) showed that the proportion of women among scientists in different regions of the world was only about 30%. In the United States, women in 2017 accounted for 29% of social and engineering employment. Their presence varies across occupational categories. In 2017, women accounted for nearly half or more of the workforce in life sciences, psychology, and social sciences. In comparison, women accounted for 27% of computer and mathematical scientists, 16% of engineers, and 29% of physical scientists (National Science Broad, 2018). In addition, gender gaps in science productivity persisted in all disciplines and in most countries. For example, an analysis of scientists who published between 1900 and 2016 showed that, on average, male scientists published 13.2 articles during their careers, while female scientists published only 9.6. The difference was particularly evident for the top 20% of scientists with male scientists publishing 37% more than female scientists (Huang et al., 2020). Women in research institutions took longer to publish (West et al., 2013; Grogan, 2019), and their studies also received fewer citations in journals with higher impact factors (Ghiassi et al., 2015; Huang et al., 2020). Bird (2011) showed that across the social sciences in the UK, women published journal articles less than their male counterparts. This finding concurred with studies in the material and life sciences (Fox, 2005; Mauleon and Bordons, 2006). In Hong Kong, male professors tended to publish more books or articles than female professors. Men also received more research funding and presented their research at more scholarly conferences (Jung, 2012). Bird (2011) also reported that for those disciplines that had similar proportions of male and female academics and were traditionally considered to be more feminine (social policy and psychology), female's academic published articles were found at a level comparable with their representation. In contrast, the proportion of articles published by women was significantly lower than expected for the discipline of political science, traditionally deemed to be a masculine subject and with low levels of female academics (Bird, 2011).

In Vietnam, the government considers women participation in scientific research to be a great and important resource for the industrialization and modernization of the country. Therefore, there have been many policies to help all researchers in general and female researchers in particular, to promote their abilities through professional activities. For example, there is support for female

employees having children under 36 months old, when they participate in training. There are policies stipulating flexible forms of training suitable to the conditions and circumstances of female employees who are raising children and providing monetary support, accommodations, child care and preschool when female employees bring their children to the training and retraining institutions (Prime Minister's Decision No. 2395/2015/QĐ-TTg).

With the attention of the Government and the efforts of female scientists, more and more women are successful in scientific research. The total number of female scientific researchers has increased over the years. In 2011, the proportion of female researchers accounted for 41.6% of research staff. By 2015, this rate was 44.8% (MOST, 2016). In addition, the attainment of female researchers has also improved significantly, such as in the increasing percentage of female PhDs and professors (see Table 30). However, in comparison with male scientists, the percentage of female principal investigators (PI) for research project or authors of published scientific papers, especially for international publications, was still lower. Over the past years, the number of female scientists leading state-level scientific projects (the highest level in the system of projects funded by the government) was very small, usually about a quarter of the total (Nguyen Thi Viet Thanh, 2015). In some training institutions, the percentage of female officials in charge of projects at the ministerial and state levels was even lower (Nguyen Thi Tuyet, 2003; Huynh Truong Huy, 2014). The proportion of social sciences female researchers having publications in scientific journals was much lower than that

Table 30. Percentages of Female Scientists Who Received PhD Degree and Were Granted a Title of Associate Professor and Full Professor by Year.

Degree, Title	2000	2007	2009	2013	2014	2015	2016	2017	2019	2020
Ph.D.			21.4						28.0	
Associate Professor	7.0	11.7		22.57	23.59	26.38	30.0	29.8	25.2	23.7
Full Professor	4.3	5.1		5.26	5.08	9.62	9.0	9.4	12.1	15.3

Notes:

- [PhD percentage] = [cumulative female PhD/cumulative total PhDs]*100.
- [Associate professor percentages] = [Cumulative female associate professor/Cumulative total associate professors]*100. It was estimated for those who were granted title at a specific year of granting title.
- [Full professor percentage] = [Cumulative female full professor/Cumulative total full professors]*100. It was estimated for those who were granted title at a specific year of granting title.

Sources:

- Ph.D. figures: from the 2009 and 2019 Vietnam Population and Housing Censuses (GSO, 2010, 2020).
- Professor figures: from Nguyen Thi Bao (2016) for data before 2016 and The State Council for Professorship (2020) for data from 2016 to 2020.

of male researchers (Nguyen Kim Hoa, 2010; Nguyen Tien Trung et al., 2019; Nguyen Thanh Thanh Huyen et al., 2020).

Thus, while more women were successful in scientific research, there were also many obstacles to their doing scientific research. As in the message “The world needs science, science needs women”, given by UNESCO in the program “For the Development of Women in Science,” held in Hanoi, November 2015, studying the achievements of women in scientific research is of urgent significance.

By using data from a study of social researchers in the Vietnam Academy of Social Sciences (VASS), the largest center of social sciences in Vietnam, this chapter aims to answer two research questions: (1) What are the gender differences in scientific achievement in the research institutes of social sciences in Vietnam? and (2) What factors affect the scientific achievements of female social researchers?

2. Background

Vietnam, located in Southeast Asia, shares land borders with China, Laos, and Cambodia. According to the 2019 Population and Housing Census, the country’s population is more than 96 million (50.23% are women), ranking it third in total population in Southeast Asia and the 15th in the world (CSCCPH, 2019). Although a low-middle-income country with a per capita income of USD 2,779/person in 2020, Vietnam’s Human Development Index was 0.704 in 2019, placing it 117 out of 189 other countries and territories (Nguyen Minh Phong and Nguyen Tran Minh Tri, 2021).

In Vietnam, there are two national, ministry-level, academic research institutions under the government: the VASS and the Vietnam Academy of Science and Technology. In addition, there are many research institutes belonging to other ministries. The Ministry of Science and Technology (MOST) has state management and is responsible for creating guidance and policies on science and technology for all research institutions. The Government of Vietnam always considers women’s participation in scientific research a great and important resource for the industrialization and modernization of the country. In the last few decades, the Government has issued many policies to help female intellectuals develop their capabilities through professional activities as mentioned earlier. Thanks to that interest, more women are succeeding in scientific research (MOST, 2016).

Established in 1953, the VASS is now a leading national research institution for the social sciences in Vietnam with a total of about 1,905 employees, of which females were 55% in 2016 and more than 60% in 2019. VASS comprises of about 35 research institutes and centers located in three geographic regions of Vietnam (North, Central, and South). Over the past years, VASS has created better conditions and expanded opportunities for female staff members to develop their capacity to participate in research activities. The development of a contingent of scientific researchers is the focus and second goal of VASS’ strategy “Building and developing a contingent of scientific staff of the VASS in terms of quantity and quality, building a team of highly qualified experts

and promising scientists capable of solving important scientific tasks, effectively participating in cooperation and international integration” (<https://vass.gov.vn/Pages/Index.aspx>).

With a policy of promoting initiative and creativity in scientific research, VASS leaders have created conditions for research institutes to proactively propose and implement ministry-level research projects. In staff training, for young staff under 35 years of age, VASS provides training activities to improve research methods, presentation skills, and project financial management skills. Opportunities for female researchers to develop their capacity in professional work, in management, and in improving their scientific status have been gradually expanded. Many female researchers who have achieved an excellent rating on their research projects and published in prestigious Institute for Scientific Information (ISI) and Scopus indexed international journals¹ have been nominated and awarded special professional titles. VASS leaders have also paid attention to female participation in managerial positions at all levels. For example, women account for 56.6% of department-level leaders (VASS, 2020).

Despite these gains, as noted by Tran Thi Van Anh (2011) and VASS (2008), until the first decade of the 21st century, the proportion of females as PI of academic projects and authors of scientific publications was still lower than that of males. There are many factors that have influenced scientific achievements and productivity, including academic rank, living standards, gender stereotypes, the burden of household chores, and the performance assessment of researchers by their superiors.

Academic ranks are important to the results of scientific research. Those with a doctorate degree generally focus more on research activities and achieve more scientific results and publications (Huynh Truong Huy et al., 2015; Jung, 2012). Rose et al. (2020) also confirmed a significant positive relationship between academic rank and research activity. For Vietnam, Nguyen Thi Kim Hoa (2010) and Tran Thi Van Anh (2011) indicated that the requirement of certain scientific degrees and ranks created obstacles for female researchers who did not have them to become a PI for ministry or higher-level project.²

Living standards and family duties also have significant influence on the achievement of scientific results. A low standard of living might make the researcher unable to wholeheartedly commit to scientific work. During their employment, women might be pregnant, give birth, and spend a considerable amount of time on housework, childcare, or parental care. In particular, these responsibilities are more difficult for young female researchers with young children than older and

¹ISI journals: These journals have been ranked by the Institute for Scientific Information (ISI) and is currently maintained by Clarivate Analytics; Scopus journals: Scopus is the world's largest abstract and citation database of peer-reviewed research literature. It was introduced by Elsevier in 2004 (<https://ieconferences.com/scopus-vs-isi-wos-which-one/>; accessed 22/8/2021).

²For example, in many research institutions, only researchers who have PhD degree or Senior Researcher can do research as a PI of ministry or higherlevel projects.

more professionally experienced female researchers. As a result, many female researchers were overburdened and lacked time to rest, improve their knowledge, and stay up to date. Eventually, they were likely to be constrained by domestic realities, and their opportunities for advancement and promotion were reduced (Nguyen Thi Kim Hoa, 2010; Do Thi Thuy, 2012; Tran Thi Thanh Van, 2013; Kieu Quynh Anh, 2015; Besselaar and Sandström, 2016; Ho Huu Phuong Chi and Nguyen Tuan Kiet, 2020). Fox (2005) and Rose et al. (2020) confirmed significant negative relationship between time spending for housework and financial stress with academic productivity of female researchers.

Gender stereotypes were especially important in explaining the difference between women and men scientific achievement (Besselaar and Sandström, 2016). Some people thought that women did not have sufficient intellectual or academic qualities for working in research positions (Nguyen Kim Hoa, 2010; Franco-Orozco and Franco-Orozco, 2018). Many women were also less likely to be encouraged to pursue scientific research because women's main responsibility was seen as housework, and women were expected to support and prioritize men career progress over their own (Henley, 2015; Kieu Quynh Anh, 2015). Gilbreath (2015) emphasized that even now there were still traditional views and stigma surrounding women in the research workforce and men staying at home, because social norms dictated that men were the breadwinners and women were the caregivers.

Having institutional support and female-friendly workplaces have been found to significantly increase the success rates of female researchers (Kalev, 2009; Jung, 2012). Institutional support can refer to many things, including leaders fairly assessing researchers and paying attention to their work and life. Fair performance assessment of researchers by leaders was an important factor in promoting effort and enthusiasm among researchers (VASS, 2008; Nguyen Kim Hoa, 2010). Yip et al. (2020) identified good practices for promoting gender equality in scientific research, such as institutional policies that reduce the academic burden of women raising young children and caring for elderly parents. Studies have suggested that when mothers were given supportive structural opportunities, their productivity was at the same rate as childless women (Henley, 2015).

From the findings of previous literatures on the relationships between scientific achievement of researchers and contributing factors, some major hypotheses can be drawn:

1. There are still gender differences in the scientific achievement of social researchers; male researchers have more scientific contributions than female researchers.
2. Academic ranks have an important role in determining scientific contributions of researchers; those with higher ranks have higher scientific achievements.
3. Researchers who spend more time on housework have lower scientific achievements.
4. Researchers who have higher living standards have higher scientific achievements.
5. Researchers who are fairly assessed by leaders have higher scientific achievements.

3. Data and Analytical Methods

The data used in this chapter are from the ministry-level research project “Measures to promote roles of female researchers in the VASS,” which was implemented in 2017 by VASS, with the first author as the principal investigator. Quantitative survey and qualitative interviews were conducted. In December 2016, prior to the survey, VASS had a total of about 1,300 researchers, not counting institute managers. Female researchers accounted for 56% or about 730 of the total. All available female researchers and one-third of male researchers in all 35 research institutes and centers were randomly chosen for comparative analysis. Because some researchers were not available during the time of survey and some cases were excluded due to missing information, the final dataset for analysis included 756 cases, of which 77.6% were females (587 cases).

Because the project was focused on the activities of female researchers, there were two separate surveys with different questionnaires for institute managers and researchers. All current institute managers and former managers within a year before the survey, who were still employed in the institute, were interviewed. Data for the institute managers are not used in this chapter.

The scientific achievement of women in social research is assessed through two dependent variables:

- (1) *Previously was the Principal Investigator (PI)* in any ministry or higher-level project in the past five years, including ministry-level, national level, and National Foundation for Science and Technology Development (Nafosted) Fund (equivalent to the national level); Other ministry or higher-equivalent level: 1 = yes; 0 = no.
- (2) *Total publications during the five years prior to the survey*: The total publications variable is the sum of articles and papers in domestic and international journals, book chapters, individual books, workshop proceedings reports, and policy consultancy reports. Each work is given a conversion publication rate based on the regulations of the State Council for Professorship with some modifications.³ Specifically, articles in ISI and Scopus indexed journals are counted as two publications; articles in other international and domestic journals are counted as one publication. Domestic book chapters are counted as one publication. Book chapters on international publication are counted as 1.25 publications. Nationally published individual books are

³The State Council of Professorship regulations, as applied to the Committee of Philosophy, Sociology, and Political Sciences, state that articles published in prestigious ISI and Scopus journals or by the 500 prestigious universities in the world, score 1 to 3 points. If published in other international or national journals, they score 0 to 1 point. Reports for international workshops can receive 0 to 1 point and those for national workshops receive 0 to 0.5 point. Manuals, references, textbooks, monographs published in the country can receive 1 to 3 points. Books published by reputable publishers in the world receive an additional 25% of the book’s conversion points. For the study, we assign the highest score to each work.

counted as three publications. Internationally published books are counted as 3.75 publications. International workshop proceeding papers are counted as one publication; national workshop proceeding papers are 0.5 publication. Policy consultancy report is counted as one publication. The total for this variable ranges from 0 to 72.5 publications.

To test the above hypotheses, we created the following independent variables:

- 1) *Sex*, with two values: 0 = Female researcher and 1 = Male researcher.
- 2) *Academic Rank*, with two values: 0 = Low Academic Rank and 1 = High Academic Rank. This variable was based on the researcher's academic degree and rank. At VASS, there are three levels of academic ranks, based on seniority and performance: Researcher, Senior Researcher, and High Senior Researcher. Researchers with PhD degree or have a Senior Researcher rank or higher are classified as High Academic Rank. All other researchers are classified as Low Academic Rank.
- 3) *Housework Time* per day, with two values: 0 = 4 hours or less and 1 = More than four hours. This variable was based on the mean and median of the number of hours spent on housework per day as reported in the survey questionnaire. The median hour is about four hours.
- 4) *Living Standards*, with three values: 1 = Difficult, 2 = Average, and 3 = Better-off. This variable was based on the researcher's self-assessment, in comparison to surrounding people. We did not have an income variable. Although housing condition could have been used for living standards, missing information on housing condition did not make this possible. With available information on housing condition we tested and found a very high correlation between the researcher's self-assessment of living standards with housing condition, so it was reasonable to base living standards on self-assessment.
- 5) *Performance Assessment from Leaders*, with three values: 1 = Totally fair; 2 = Mostly fair, and 3 = Not fair. This variable was based on the researchers' responses of the question "Do you agree that your leader fairly assess your ability and contribution in doing research?"
- 6) Applying gender and cultural approaches (Kabeer, 1994; Kwok and Bond, 2004), the paper examines the role of cultural factors in creating differences between men and women researchers. Based on the status-role view of Ralph Linton (quoted from Bilton et al., 1993; Le Ngoc Hung, 2009), the role of female researchers as the main person in housework is considered in the analysis and reflected in the above mentioned variable "Housework Time." In addition, using an interdisciplinary approach (Collins, 2000, 2015), a combination of factors that could influence the role of female researchers in scientific activities will be used, such as the interaction of the variable "Sex" and housework. It is hypothesized that effect of time spent on housework would be higher for females' academic achievement than males', because of social norms about women being responsible for housework. Thus, we created the interaction variable of sex*number of hours spent on housework with two values: 1 = Male, spending more than four hours and 0 = Others.

Some of main characteristics of interviewed researchers by sex are identified as below:

A comparison of the characteristics of male and female groups showed no significant differences between male and female researchers in terms of academic rank, living standards and performance assessment from leaders. However, there

Table 31. Main Characteristics of Interviewed Researchers by Sex (%).

Characteristics	Female	Male	Total
Total	587	169	756
%	77.6	22.4	
Dependent Variables			
PI in ministry or higher-level projects during the last five years			
Total (N)	587	169	756
Ever (%)	14.0	17.2	14.7
Never (%)	86.0	82.8	85.3
Mean number of Scientific Publications*			
Total (N)	570	166	736
Mean	6.3	8.3	6.8
Independent Variables			
Total (N)	587	169	756
Academic Rank			
Low	72.9	73.4	73.0
High	27.1	26.6	27.0
Number of Housework Hours per Day***			
Four hours or less	47.4	74.0	53.3
More than four hours	52.6	26.0	46.7
Living standards*			
Difficult	23.7	33.1	25.8
Average	67.0	62.1	65.9
Better-Off	9.3	4.8	8.3
Performance assessment from leaders			
Totally fair	27.8	34.3	29.2
Mostly fair	51.8	47.9	50.9
Not fair	20.4	17.8	19.8

Statistical significance: * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

is a large gap for the time spent on housework by males and female researchers, which can affect their academic achievements.

The analysis was first done by comparing the scientific achievement between men and women to see the overall gender differences. Next, following a bivariate analysis (using chi-square, *T*-test or ANOVA test), theoretically important factors will be included in the multivariate model analysis, using logistic regression or multiple classification analysis (MCA) regression. MCA is a form of regression analysis that is widely used with categorical independent variables (Andrews et al., 1973). Multivariate analyses will be used to analyze the total sample of male and female researchers and just female researchers.

Procedures to test interaction effects of housework time associated with female or male researchers are provided in Appendix 1.

4. Analysis Results

4.1. Gender Differences in Scientific Achievement

Principal Investigator (PI) in Ministry or Higher-level Projects. The percentage of researchers who were PIs in ministry or higher-level research projects, within five years of the survey, is shown in Fig. 14. In general, there was a gender difference between male and female researchers in serving as PIs: male researchers had a higher percentage of being PIs in ministry or higher-level projects (17.2% vs. 14.0%). This difference, however, is negligible.

Publications. Male researchers had a significantly higher mean number of scientific publications than female researchers (8.3 vs. 6.3). The difference is present for both national and international publications. Significant difference, however, was clearly found only for national publications (Fig. 15).

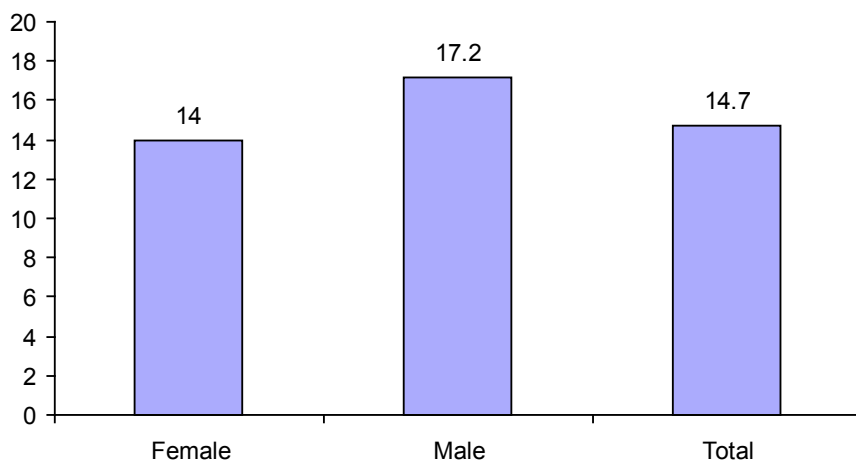


Fig. 14. Percentage of Principal Investigators in Ministry or Higher-level Research Projects by Sex.

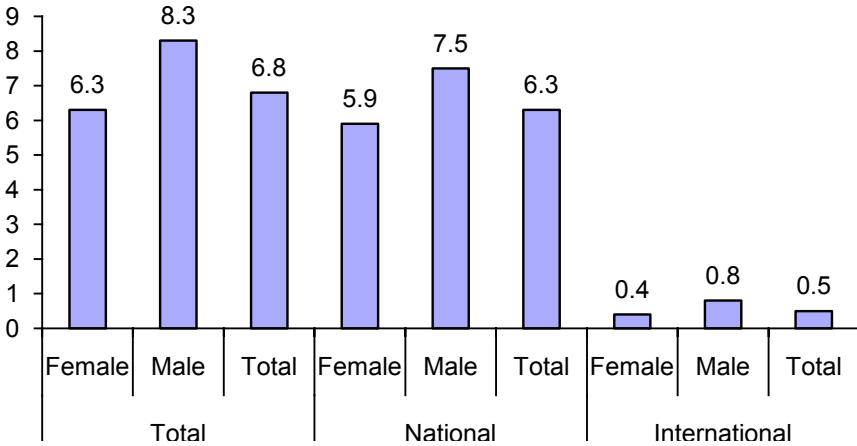


Fig. 15. Mean Number of Scientific Publications by Sex.

4.2. Factors Influencing the Scientific Achievement of Researchers

As pointed out above, socio-demographic characteristics of female or male groups can make a difference in research productivity between them. For example, male researchers usually spend less time on housework than female researchers, which would increase their time for doing research and contributing more scientific products than female researchers. Moreover, a higher proportion of male researchers have difficult living standards compared to female researchers, and the financial stress hampered males in focusing on doing research. Therefore, it is necessary to compare these two dependent variables according to the specific characteristics of female or male researchers.

Factors Influencing Being Principal Investigators in Ministry or Higher-Level Research Projects

Table 32 presents the percentage of researchers who were PIs in ministry or higher-level research projects related to the researchers’ characteristics. Chi-square tests were applied for cross tabulations. For both male and female researchers, those with a high academic rank had a higher percentage of being a project PI. Researchers who spent more than four hours on housework had a lower percentage of being a project PI than those spending four hours or less. There was, however, a larger difference for female researchers than male researchers.

The standard of living factor seemed to have important positive implications for researchers of both sexes working as project PIs, while the performance assessment by leaders of the researchers was not important for both male and female groups. Those with better living standards tended to have a higher percentage of being project PIs.

In order to have a more accurate assessment of the role of gender for participation as project PIs, when all factors are controlled, a logistic multivariate

Table 32. Percentage of Principal Investigators in Ministry or Higher-level Projects by Respondent Characteristics.

Characteristics of Scientists	Female		Male		Total	
	%	<i>N</i>	%	<i>N</i>	%	<i>N</i>
Total	14.0	587	17.2	169	14.7	756
Academic rank	***		***		***	
Low	2.8	428	5.6	124	3.4	552
High	44.0	159	48.9	45	45.1	204
Housework time per day	***				**	
Four hours or less	19.4	278	15.2	125	18.1	403
More than four hours	9.1	309	22.7	44	10.8	353
Living standards	***		**		***	
Difficult	4.3	139	5.4	56	4.6	195
Average	15.0	393	23.0	113	16.5	498
Better-Off	30.9	55			31.7	63
Performance assessment from leaders						
Totally fair	13.5	163	13.8	58	13.6	221
Mostly fair	15.1	304	19.8	81	16.1	385
Not fair	11.7	120	16.7	30	12.7	150

Significance level: * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

Note: We regrouped the variable “Living standard” of male into two groups (because the group Better-off is too small, with only eight cases).

regression was performed with the dependent variable being a PI in ministry or higher-level research projects during the last five years: 1 = Ever; 0 = Never. The independent variables included sex, academic rank, housework time, living standards, and performance assessment by leaders.

As mentioned earlier in the data analysis section, because the effect of time spent on housework may be different for females and males, an interaction variable of sex and housework time is included in the model. To test the interaction variable, we first run a logistic regression for sex and housework time as an additive model. Next, we run a logistic regression for sex, housework time and the interaction variable. It was shown that the interaction variable had a significance level of $p < 0.05$ (exact $p = 0.006$), so this interaction variable needed to be in the multiple model (see Appendix 2).

The analytical results for the entire sample and the female scientist sample are presented in Table 33.

The analytical results in Table 33 show that, for the entire sample of female and male researchers, the factors that had a significant impact on a researcher’s

Table 33. Factors Having an Impact on Being Principal Investigators in Ministry or Higher-level Research Projects (Logistic Regression Results).

Independent Variables	Total Sample		Female Sample	
	OR	<i>N</i>	OR	<i>N</i>
Sex				
Female	0.8	587		
Male	1	169		
Academic rank				
Low professional	0.1***	552	0.1***	428
High professional	1	204	1	159
Housework time per day				
Four hours or less	2.1**	403	2.1**	278
More than four hours	1	353	1	309
Living standards				
Difficult	0.2**	195	0.2*	139
Average	0.5	498	0.6	393
Better-Off	1	63	1	55
Performance assessment from leaders				
Totally fair	0.7	221	0.8	163
Mostly fair	1.2	385	1.2	304
Not fair	1	150	1	120
Interaction of sex and number of housework hours				
Others	0.4	712		
Male, more than four hours	1	44		
Nagelkerke <i>R</i> Square	0.43		0.44	
<i>N</i>		756		587

Significance level: * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

ability to work as PIs in ministry or higher-level projects were academic rank, housework time, and living standards. Those with a high academic rank, spent less time on housework, and had a higher standard of living were more likely to become PIs. Thus, *H2*, *H3*, and *H4* about the important roles of academic ranks, housework time, and living standards on scientific achievements were confirmed, while *H5* about the impact of performance assessment by leaders was not confirmed. This result reflects the fact that the process of selecting a project manager at the ministry or higher level was mainly based on high academic rank, but other family factors might affect that result.

As to gender, there was no gender difference in becoming project PI for researchers who spent 4 hours or less on housework. In other words, if researchers did not spend much time on housework, their gender would not make any difference in being project PI. On the other hand, female researchers who spent four hours or less on housework were two times more likely to be project PI than those spending more than four hours on housework. In other words, housework time had more of an effect on female researchers. This reflects the role of female researchers as caregivers in the family. Thus, *H1* about gender differences in the scientific achievement of social researchers was partially confirmed.

A separate analysis of the female sample showed similar results. Female researchers who had high academic rank, better-off living standards, and spent less time on housework were more likely to be project PIs than their counterparts.

Factors Influencing the Total Number of Scientific Publications

Analysis of scientific publication by researcher's characteristics is presented in [Table 34](#) for the overall sample and separate female and male samples. In this analysis, due to some missing information of scientific publication, only 736 cases for both sexes were analyzed. A *T*-test was used for independent variables with two categories and the ANOVA test was applied to variables with three categories.

The general picture showed that male researchers had a significantly higher mean number of scientific publications than female researchers. High academic rank was closely related to the number of publications. Researchers with high academic rank had about 2.7 times as many publications as those with low rank. Housework time was also associated closely with number of scientific publications; those who spent less time on housework had more publications than those spending more time. The effect of housework time, however, seems strong only for female researchers. Female researchers spending more than four hours on housework were less likely to publish than those spending four hours or less, while there was no significant difference between the two groups of male researchers.

Similar to the association of publications and housework time, the living standards factor was closely related to the number of scientific publications by female researchers but not for male researchers. This finding suggest a stronger effect of family responsibilities on female researchers whose housework burden was often heavier than that of men. In contrast, for both sexes, the performance assessment by leaders was not closely related to the number of their publications.

To accurately assess the individual impact of each independent variable, MCA regression procedure was performed, with the number of publications as the dependent variable and with the independent variables discussed earlier. The analyses were for both sexes and separately for females. The results are presented in [Table 35](#).

Interaction variable of sex*housework time was tested, and the results are presented in Appendix 3. Results showed that when added, the interaction variable sex*housework time was significant at $p = 0.009$. Therefore, this interaction variable should be included in the multiple regression models.

Table 34. Mean Number of Scientific Publications by Respondent Characteristics.

Independent Variables	Female		Male		Total	
	Mean (SD)	N	Mean (SD)	N	Mean (SD)	N
Total*	6.3 (7.1) ***	570	8.3 (9.7) ***	166	6.8 (7.8) ***	736
Academic rank						
Low	4.3 (4.4)	413	5.8 (6.8)	123	4.6 (5.1)	536
High	11.8 (9.5) ***	157	15.5 (13.0)	43	12.6 (10.4) **	200
Housework time per day						
Four hours or less	7.5 (8.1)	264	7.9 (8.5)	122	7.6 (8.2)	386
More than four hours	5.4 (5.9) **	306	9.0 (10.6)	44	5.9 (7.2) *	350
Living standards						
Difficult	4.6 (5.0)	134	7.6 (7.8)	56	5.5 (6.1)	190
Average	6.8 (7.6)	383	8.7 (10.6)	110	7.2 (8.4)	485
Better-Off	7.6 (6.9)	53			7.3 (6.9)	61
Performance assessment from leaders						
Totally fair	6.1 (5.7)	159	10.6 (14.3)	55	7.3 (8.9)	214
Mostly fair	6.6 (6.7)	298	7.3 (5.4)	81	6.8 (6.5)	379
Not fair	6.0 (9.3)	113	7.0 (8.2)	30	6.2 (9.1)	143

Note: For males, the variable "Living standards" was regrouped into two groups (because the group Better-off is too small, with only 8 cases). Significant level: * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

Table 35. Factors Having an Impact on the Number of Scientific Publications (MCA Analysis).

Independent Variables	Total Sample = 736 Grand Mean = 6.8			Female Sample = 570 Grand Mean = 6.3		
	Unadjusted Deviation	Adjusted	N	Unadjusted	Adjusted	N
Sex						
Female	-0.5	-0.3	570			
Male	1.5	1.0	166			
Eta/Beta	0.11	0.07				
Academic rank						
Low	-2.2	-2.1	536	-2.1	-2.0	413
High	5.8	5.7	200	5.4	5.2	157
Eta/Beta	0.46	0.45***		0.48	0.46***	
Housework time per day						
Four hours or less	0.8	0.7	386	1.1	0.8	264
More than four hours	-0.9	-0.7	350	-1.0	-0.7	306
Eta/Beta	0.11	0.09*		0.15	0.10**	

Living standards								
Difficult	-1.3	-0.4	190	-1.8	-0.7	134		
Average	0.5	0.3	485	0.4	0.3	383		
Better-off	0.5	-0.8	61	1.3	-0.2	53		
Eta/Beta	0.1	0.05		0.14	0.06			
Performance assessment from leaders								
Totally fair	0.5	0.2	214	-0.2	-0.5	159		
Mostly fair	-0.1	0.1	379	0.3	0.3	298		
Not fair	-0.6	-0.4	143	-0.4	-0.1	113		
Eta/Beta	0.05	0.03		0.04	0.05			
Interaction of sex and housework time								
Others	-0.2	-0.1						
Male, More than 4 hours	2.9	1.8						
R square	0.23			0.24				
N			736			570		

Significance level: * $p < 0.05$, ** $p < 0.01$; *** $p < 0.001$.

The results showed that, after all variables were controlled for, the gender factor did not have a significant effect on scientific publications. No significant difference in the number of publications was found between male and female researchers, among those who spent four hours or less on housework. This means that the *H1* about the impact of gender factor was not confirmed. For female researchers, however, those who spent four hours or less on housework had 1.4 more publications than those who spent more than four hours on housework. These results confirm the *H3* on the association between housework time and scientific achievement of researchers.

The analysis showed that academic rank was a very important factor: the higher the academic rank, the higher the number of publications, as hypothesized. Regarding the effect of living standards, after controlling for all variables, there were no significant differences in publications among the three groups of living standards. Like the bivariate analysis results, performance assessment by leaders did not make a significant difference in the number of scientific publications. Thus, the *H4* and *H5* about the roles of living standards and performance assessment by leaders were not confirmed for publications.

The impact of these factors on the scientific publications of both sexes was also evident in comparing groups of female researchers. The number of publications was significantly influenced by the researcher's academic rank and time spent on housework.

5. Discussion and Conclusion

Data analyses from one study in the largest center for the social sciences in Vietnam showed that, although the number of female researchers had increased in recent years, their scientific contributions were still limited compared to male researchers. In other words, there were still gender differences in the scientific achievement of researchers, as shown by the lower proportion of females as project PIs and the lower number of publications. Thus, the *H1* about gender differences in the scientific achievement of social researchers was confirmed by this study. These observations show that simply increasing the number of women doing scientific research is not enough to achieve gender equality.

The contribution to science of Vietnamese female researchers was influenced by many different factors. The most important factor was the academic rank of the researchers, and the second, was the time spent on housework. The researcher's academic rank was measured mainly by academic degree and professional rank within VASS. Academic ranks, however, were closely tied to time spent on housework. Researchers who spent more time on housework had less time to spend on doing research and learning, in order to improve their ranks (Tran Thi Van Anh, 2011; Nguyen Thi Bao, 2016; Ho Huu Phuong Chi and Nguyen Tuan Kiet, 2020). The above research results also showed that, in the group with little housework, the difference between women and men in scientific achievement was not significant. Within the female group, however, there was a huge difference in achievement between those who did more and less housework. Thus, the current gender differences in scientific contributions were mainly caused by gender

stereotypes, with the notion that women had the main housework duty and men were to pursue their career.

Gender norms in Vietnam, as well as in many countries around the world, attach domestic work to the women, including female researchers (Tran Thi Van Anh, 2011; Gilbreath, 2015; UNESCO, 2017, etc.). Therefore, female researchers will give priority to their husbands to work outside the home, while they bear the burden of housework. Thus, female researchers perform dual roles, of professional scientist and domestic family caregiver. This is an important cultural barrier that limits the quality of the research results and affects the achievements of female social scientists. Among the 290 respondents who gave the reasons for not taking advantage of the opportunity to participate in long-term training (both domestic and oversea), the highest percentage (60.3%) was due to unfavorable family work. This rate for women was 63.7% and for men 46.4%. Many female researchers as well as research institute leaders also emphasized the disadvantages faced by women who have to spend too much time on household duties, from raising children to taking care of elderly family members. They considered family chores as the main reason why female researchers were still limited in their contribution, as compared to men.

These results are similar to previous findings in other countries (Besselaar and Sandström, 2016; Franco-Orozco and Franco-Orozco, 2018) and in Vietnam (Nguyen Thi Kim Hoa, 2010; Phan Thuan and Tran Kim Lien, 2015; Ho Huu Phuong Chi and Nguyen Tuan Kiet, 2020), which emphasized that gender stereotypes lead some women to not really try to create good scientific publications. Findings from this study also provide empirical evidence for the social identity theory that emphasized the importance of social categories, such as gender, to explain the distinction of self and others (Randel, 2002). Thus, *H2* and *H3* about the impacts of academic ranks and housework time on scientific achievement were confirmed in this study. At the same time, this study also showed results different than those of Vuong et al. (2017), who analyzed data from the Scopus dataset and argued that in the field of social sciences in Vietnam, women's marital and parental responsibilities no longer appear to hinder their scientific productivity. This difference may be due to the different ways the number of publications was calculated and that our study did not take into account the co-authors, which suggests further analysis.

The hypothesis about the important role of living standards in scientific achievement for researchers had been partially confirmed. A higher standard of living created more conditions for researchers to participate as project PIs. This factor, however, did not significantly affect the number of published works. This means that the role of living standards vary depending on how scientific achievements are measured.

The results did not clearly show the important role of work environment factor in gender differences in scientific achievement, using performance assessment by leaders, as stated in the last hypothesis. As stated elsewhere (VASS, 2008; Nguyen Kim Hoa, 2010; Yip et al., 2020), a fair and accurate assessment by leaders will motivate researchers to become more passionate and active in research, thereby contributing more to science. Results from

this study, however, showed that the assessment of the institute's leaders did not make a significant difference in the scientific outputs of female and male researchers. It is possible that more relevant indicators are needed to explain this issue, such as support by leaders for female researchers to balance family responsibilities through flexible time work and developing appropriate training for female researchers.

In summary, gender differences in social science achievement in Vietnam is still a fact, and a very important factor is gender stereotypes that regard housework as a woman's responsibility. This has limited female researchers' contribution in science and thus will hinder their contribution to the country's industrialization and modernization.

Respecting and promoting the development of women's intellectual resources is an inevitable solution suitable for social development. Therefore, organizations and leaders need to implement gender-responsible solutions to create conditions for female social scientists to overcome the difficulties of household duties to participate in training and doing research better. Gender characteristics should be paid attention to in organizing training classes to have the most suitable form of training courses for female researchers. It is also important to avoid the extreme view that as women are busy with housework, less should be required of them than men. Such gender stereotypes will continue to inhibit the professional efforts of female staff and limit their contributions. Specific solutions for training, retraining, and research management of female researchers, from a gender perspective, will help to continuously improve their research capacity. In turn, they will make better scientific contributions in the social sciences in Vietnam.

Limitation of the Study

First, as mentioned earlier, data for this study was drawn from the project that focused on female researchers so there was an unbalanced percentage of females and males in the sample, which can create potential biases for analyzing the total sample. To avoid this, we included control variables. In addition, with almost 170 male respondents, we believe the male sample is sufficient in size to compare male and female researchers.

Second, living standards was based on respondent self-assessment and may not capture the exact economic situation of the respondents. We, however, did test the correlation of this variable with the housing condition variable and found a high correlation. Thus, we can use the self-assessed living standards variable for the analysis.

Third, even though the managers of institute and centers within VASS are also researchers, they were not included in the analysis because information from them was on a separate questionnaire. Moreover, some characteristics for use as independent variables were not available, such as the number of hours spent on housework, living standards, performance assessment from leaders. Therefore, the manager information was not analyzed.

These limitations should be considered for the next study of this issue.

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Appendix 1. Procedures to Test Interaction Effects

For linear regression I apply the following procedures which are described in detail in [Phananiramai \(1981\)](#):

- (1) If the interaction term is not significant at $p < 0.05$, the interaction term is deleted.
- (2) If the interaction term is significant at $p < 0.05$, the ratio of the sum of squares associated with the interaction term to the sum of squares associated with the main effect is calculated. If the ratio is less than 0.05, the interaction is also deleted.
- (3) The contribution of the interaction term to the R -square is assessed. If it increases R -square by more than 1 percent, this interaction term is considered to be “important.”

For logistic regression the test is based upon the following three criteria:

- (1) If the interaction term is not significant level at $p < 0.05$, the interaction term is deleted.
- (2) If the interaction is significant at $p < 0.05$ then the increment of Model chi-square between the additive models which includes two predictors, and the models with adding interaction terms is estimated. If the increase of chi-square is not statistically significant at significance level of 0.05, the interaction is deleted.
- (3) The magnitude of change in R_L square. R_L square “is a *proportional reduction in the absolute value of the log-likelihood* measure. It indicates by how much the inclusion of the independent variables in the model reduces the badness-of-fit D_0 chi-square statistic” ([Menard, 1995](#), p. 22) If the magnitude of the change in R_L square is large enough (I am not sure how large is enough, however, in his example, [Menard \(1995, p. 54\)](#) considers the increase of 0.016 small), then we can determine that the interaction is statistically and substantively significant.

R_L square is estimated as follows:

$$R_L \text{ square} = G_M/D_0$$

where G_M is “Model Chi-square Improvement” in SPSS output and D_0 is “Initial Log Likelihood Function -2 Log Likelihood” in SPSS output.

Appendix 2. Results of Testing Interaction Effects for Logistic Regression

1) *Without interaction: Independent variables include Sex and Housework Time*

Model Summary.

Step	-2 Log Likelihood	Cox & Snell R Square	Nagelkerke R Square
1	622.326 ^a	0.011	0.020

-.^a Estimation terminated at iteration number 5 because parameter estimates changed by less than 0.001.

Variables in the Equation.

		<i>B</i>	SE	Wald	df	Sig.	Exp(<i>B</i>)
Step 1 ^a	Sex(1)	-0.097	0.243	0.159	1	0.690	0.908
	Housework Time(1)	0.588	0.220	7.153	1	0.007	1.801
	Constant	-2.031	0.272	55.927	1	0.000	0.131

^aVariable(s) entered on step 1: sex, housework time.

2) *With Interaction: Independent variables include Sex, Housework Time, and Sex*Housework Time*

Model Summary.

Step	-2 Log Likelihood	Cox & Snell R Square	Nagelkerke R Square
1	615.281 ^a	0.020	0.036

^aEstimation terminated at iteration number 5 because parameter estimates changed by less than 0.001.

Variables in the Equation.

		<i>B</i>	SE	Wald	df	Sig.	Exp(<i>B</i>)
Step 1 ^a	Sex (1)	0.296	0.292	1.033	1	0.310	1.345
	Housework time (1)	0.883	0.250	12.538	1	0.000	2.419
	Sex*Housework time (1)	-1.379	0.504	7.492	1	0.006	0.252
	Constant	-1.224	0.360	11.573	1	0.001	0.294

^a Variable(s) entered on step 1: Sex, Housework Time, Sex*Housework Time.

Appendix 3. Results of Testing Interaction Effects for Linear Regression

1) Without interaction: Independent variables include Sex and Housework Time

ANOVA^a.

Model		Sum of Squares	df	Mean Square	F	Sig.	R Square Change
1	Subset tests	836.300	2	418.150	7.015	0.001 ^b	0.019
	Sex, housework time						
	Regression	836.300	2	418.150	7.015	0.001 ^c	
	Residual	43,692.433	733	59.608			
	Total	44,528.732	735				

^a Dependent variable: number of converted publication over five years.

^b Tested against the full model.

^c Predictors in the full model: (constant), sex, housework time.

Coefficients^a.

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	SE	Beta		
1	(Constant)	7.068	0.451		15.677	0.000
	Sex	1.631	0.699	0.088	2.333	0.020
	Housework time	-1.359	0.585	-0.087	-2.323	0.020

^a Dependent Variable: number of converted publication over five years.

2) *With Interaction: Independent variables include Sex, Housework Time, and Sex*Housework Time*

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.	R Square Change	
1	Subset tests	Sex, housework time, sex* housework time	1,241.597	3	413.866	6.999	0.000 ^a	0.028
	Regression		1,241.597	3	413.866	6.999	0.000 ^b	
	Residual		43,287.136	732	59.135			
	Total		44,528.732	735				

^a Dependent Variable: Number of converted publication over five years.

^b Tested against the full model.

^c Predictors in the Full Model: (Constant), Sex, Housework Time, Sex* Housework Time.

Coefficients^a.

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	SE	Beta		
1	(Constant)	7.459	0.473		15.761	0.000
	Sex	0.393	0.842	0.021	0.467	0.641
	Housework time	-2.088	0.646	-0.134	-3.233	0.001
	Sex*Housework time	3.923	1.499	0.120	2.618	0.009

^a Dependent Variable: Number of converted publication over five years.

Part II

**Cultural Context Conditions of Academia
for Diversity and Discrimination**

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Chapter 8

Beliefs About Gender and Meritocracy and the Evaluation of Sexual Harassment in a University Research Setting

Julie A. Kmec, Lindsey T. O'Connor and Shekinah Hoffman

Abstract

Building on work that explores the relationship between individual beliefs and ability to recognize discrimination (e.g., Kaiser and Major, 2006), we examine how an adherence to beliefs about gender essentialism, gender egalitarianism, and meritocracy shape one's interpretation of an illegal act of sexual harassment involving a male supervisor and female subordinate. We also consider whether the role of the gendered culture of engineering (Faulkner, 2009) matters for this relationship. Specifically, we conducted an online survey-experiment asking individuals to report their beliefs about gender and meritocracy and subsequently to evaluate a fictitious but illegal act of sexual harassment in one of two university research settings: an engineering department, a male-dominated setting whose culture is documented as being unwelcoming to women (Hatmaker, 2013; Seron, Silbey, Cech, and Rubineau, 2018), and an ambiguous research setting. We find evidence that the stronger one's adherence to gender egalitarian beliefs, the greater one's ability to detect inappropriate behavior and sexual harassment while gender essentialist beliefs play no role in their detection. The stronger one's adherence to merit beliefs, the less likely they are to view an illegal interaction as either inappropriate or as sexual harassment. We account for respondent knowledge of sexual harassment and their socio-demographic characteristics, finding that the former is more often associated with the detection of inappropriate

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behavior and sexual harassment at work. We close with a discussion of the transferability of results and policy implications of our findings.

Keywords: Gender beliefs; meritocracy beliefs; sexual harassment; engineering culture; gender; workplace harassment

In 2017, sexual harassment received renewed attention from the public and media when the #MeToo and #TimesUp movements went viral (Keplinger et al., 2019) and exposed women's on-going experiences with sexual harassment. Women publicly shared their experiences of sexual harassment via online platforms like Twitter and Facebook to illustrate the pervasiveness of sexual harassment and assault, to push for justice and social change, and to show solidarity with other victims (Chowdhury et al., 2019; Keplinger et al., 2019). Whereas the public may have initially learned about sexual harassment incidences from media coverage of a high-profile case (e.g., Justice Thomas, Harvey Weinstein) before the widespread movements, learning about others' sexual harassment experiences through social media is now common (Anderson and Toor, 2018). A 2018 Pew Research Center study, for example, reported that 65 percent of US adults surveyed reported that they regularly see content related to sexual harassment or assault on their social media platforms (Anderson and Toor, 2018). This exposure to acts of harassment suggests that people are forming opinions about sexual harassment more frequently than ever (Keplinger et al., 2019).

The increased frequency with which the public is now engaged with other people's experiences of sexual harassment raises questions about the factors that shape their perceptions of those experiences. Indeed, public perceptions following the exposure of a sexual harassment tend to be quite varied. Take recent harassment claims against a US senator accused of kissing and groping a woman without her consent; 44 percent of a sample of nearly 1,000 Americans said he should resign while 56 percent said they should not or could not form an opinion about the behavior (we are assuming that saying he should resign implies they considered his behavior to be sexual harassment, or at least inappropriate and unbecoming of someone in such a role) (Huffington Post, 2017). What motivates these divergent views about an instance of sexual harassment, especially since it has been an illegal form of discrimination in the United States for decades? In other words, what makes some label an interaction as workplace sexual harassment, while others do not?

Our study adds to the growing body of research concerning sexual harassment (see Minnotte and Legerski, 2019, for review) by examining the source of these differences in individual's opinions about what constitutes sexual harassment. Specifically, we focus on the role of personal belief systems and the way these beliefs influence individuals' understanding of a situation involving sexual harassment. Our study addresses two research questions: (1) To what extent do personal beliefs about gender and meritocracy relate to "seeing" an illegal male-female interaction as inappropriate behavior and sexual harassment? (2) Does the relationship between personal beliefs and "seeing" a male-female interaction as

inappropriate behavior and as sexual harassment differ in male-dominated versus ambiguous research settings? The answers to these questions are important because they tell us more about how to reduce workplace sexual harassment; one must first be able to see sexual harassment before believing something can be done about it (see Felstiner, Abel, and Sarat, 1980).

In response to the widespread occurrence and public awareness of sexual harassment, scholars have studied a variety of issues related to it, including the role of perpetrators, the role the victim, and the effects of sexual harassment on women's work and health outcomes (see [Minnotte and Legerski, 2019](#)). Our study updates and extends this research in several important ways. First, like others (see [Pampel, 2011](#); [Lee, Kim, and Choi, 2013](#); [Meyer and Gelman, 2016](#); [Ronen, 2018](#)), we consider the relationship between personal beliefs and labeling sexual harassment, but we are among the first to consider both gender essentialist (i.e., broad beliefs about the innate source of gender; that gender differences are natural) and egalitarian beliefs (i.e., beliefs that people – regardless of their gender – are equally able to participate in paid work, education, social, and family roles) in perceptions of sexual harassment.¹ These personal beliefs about gender are not just the inverse of one another; each considers a different dimension of gender. Our analysis also considers the role that beliefs about meritocracy, beliefs so widespread in the United States that some consider it to be the “national” American ideology ([Eyer, 2012](#)), have in the likelihood of labeling an act as sexual harassment. Researchers have thus far overlooked the relevance of meritocratic beliefs for seeing sexual harassment, yet beliefs about merit may relate to detecting sexual harassment in the workplace. A core element of meritocracy is that internal factors (e.g., work effort, skill) rather than external ones (e.g., discrimination, harassment) are to blame for what happens to an individual; in other words, you get what you deserve because of something you do (or do not do). If meritocrats typically explain situations as “you get what you deserve,” they may say the victim of sexual harassment deserved the treatment.

Third, our data, collected in 2020, updates analyses involving the effect of personal gender beliefs on seeing sexual harassment ([Klemmack and Klemmack, 1976](#); [Jensen and Gutek, 1982](#); [Pryor, 1987](#)). For the past several decades, beliefs about gender have become more liberal. Compared to the 1970s, in the 2010s, Millennials (born 1980s–1990s) and Baby Boomers (born 1946–1964) became more gender egalitarian in their views ([Donnelly et al., 2015](#)). While our data do not allow us to draw longitudinal conclusions about the relationship between gender attitudes and labeling of sexual harassment, our study situates this relationship in a snapshot of time when gender beliefs look very different than in the past.

Fourth, most existing studies of sexual harassment or more generally, perceptions of discrimination, rely on self-reported discrimination (e.g., [Shorey, Cowan, and Sullivan, 2002](#); [Cech, Blair-Loy, and Rogers, 2018](#)) or experimental

¹For detailed discussion of these gender belief scales, please see [King and King \(1983\)](#) and [Beere et al. \(1984\)](#) on the development and testing of the concepts. See Appendix 2, Table A1 for examples of the measures included in this scale.

laboratory studies of undergraduate students (e.g., Major, Quinton, and McCoy, 2002; McCoy and Major, 2007). We use a unique methodological approach – a survey-experimental design – which exposes all respondents to the same fictitious act of sexual harassment in one of two university settings. So, unlike commonly used self-reports of sexual harassment – which may or may not accurately reflect seeing sexual harassment – exposing all respondents to the same sexual harassment behavior avoids complications caused by analyzing different scenarios. Because our sample consists of American adults in different life stages with different workplace experiences, our study has greater external validity than experimental studies in laboratory settings using undergraduate student subjects.

Finally, our analyses recognize that sexual harassment is not experienced equally across workplace settings and within these workplaces, sexual harassment experiences differ across gendered workplace cultures. Sexual harassment is especially rampant in academia (Fredrickson, 2017; Wang and Widener, 2017; Anderson, 2018; National Academies of Sciences, Engineering, and Medicine, 2018; Aguilar and Baek, 2020; Karami et al., 2020). Academic settings have the second highest rate of sexual harassment against women, second only to the military (Ilies et al., 2006). Recent accounts of women in the academy corroborate this information (National Academies of Sciences, Engineering, and Medicine, 2018; Aguilar and Baek, 2020; Karami et al., 2020). For example, approximately 50 percent of female medical school faculty surveyed had experienced sexual harassment (Carr, Ash, and Friedman, 2000; Jagsi et al., 2016; Ray, Freund, McDonald, and Carr, 2020), and about 70 percent of female anthropologists and other field scientists surveyed experienced sexual harassment (Clancy et al., 2014).

The Relevance of Personal Beliefs

Our investigation of the way one's personal beliefs help them make sense of a situation involving sexual harassment grows out of research exploring how beliefs relate to seeing discrimination more generally. A body of research examines the relationship between meritocratic beliefs and seeing discrimination; holding a meritocratic view has been used to explain why people are unable to recognize discrimination and if they do, why they blame the victim for it (Eyer, 2012), and, more generally, whether people see themselves as victims of discrimination and understand the costs of reporting it. (for a review, see Kaiser and Major, 2006). Gender essentialism, for example, predicts individuals' support for gender inequality and discriminatory practices at work, and the fairness of gender-based treatment (Skewes, Fine, and Haslam, 2018), endorsement of the gender gap in STEM (Liben and Coyle, 2014), the gender-typed preferences of parents and their children and parents' prescriptive stereotyping behavior (Meyer and Gelman, 2016), and is related to the devaluation of women (Ronen, 2018). Individuals in a representative sample of Americans who held conservative gender role beliefs (a concept similar to gender egalitarianism) had a lower likelihood of identifying family responsibilities discrimination (i.e., discrimination based on one's family caregiving responsibilities) compared to those with more liberal views (O'Connor and Kmec, 2020).

On (Not) “Seeing” Sexual Harassment: Personal Beliefs About Gender and Meritocracy

Gender Essentialism. The phrase “girls will be girls, and boys will be boys” depicts the core of gender essentialist thinking; women and men are who they are because they are fundamentally and naturally so. Gender itself stems from biological, rather than social factors. Essentialists believe that gender categories are immutable and part of the “essence” of being female or male (see Gurian, Henley, and Trueman, 2001; Rangel and Keller, 2011; Skewes, Fine, and Haslam, 2018). Gender essentialism, like other essentialist explanations of human behavior, arise from a desire to justify fairness of a behavior (Jost and Banaji, 1994; Brescoll, Uhlmann, and Newman, 2013) and gender differences in outcomes are as unalterable as the essence of women and men. A person who subscribes to essentialist thinking might think that males and females are inherently best suited for different fields of study and jobs (Meyer and Gellman, 2016) or that intrinsic gender differences cause occupational sex segregation (see Pruitt, 2018).

Gender Egalitarianism. Gender egalitarians subscribe to the belief that women and men are relatively equal in their ability to participate in work, education, social, and family roles. Said differently, gender egalitarianism implies that whatever a man can do, so can a woman (i.e., they can both participate in the paid labor market, they have similar ability to pursue an education, etc.). Gender egalitarians place equity between females and males at the center of their thinking. For example, a person with gender egalitarian beliefs would argue that access to resources is the right of women and men and that opportunities for advancement are equally beneficial to women and men.

Meritocracy. Meritocracy is the idea that success is a product of one’s hard work and talent while failure results from a lack of these traits. Individuals with meritocratic beliefs see the world as fair and any failure the result of individual action as opposed to structural forces or discrimination (Cech et al., 2018). For example, someone with a meritocratic view would attribute the lack of women in upper management positions to lower work effort, lack of prioritization of work over family, or lack of leadership traits compared to men. In general, in a meritocratic system, an outcome as the result of internal, individual-level factors: a person “deserves” what they get.

Attribution Theory: Connecting Personal Beliefs to Seeing Sexual Harassment

Attribution theory helps make sense of how personal beliefs affect one’s ability to see behaviors like sexual harassment. The theory argues that our sense-making abilities result from what we believe the cause of what we see is (see Taylor and Fiske, 1978; Kelley and Michela, 1980; Harvey and Weary, 1984). According to this central tenet of attribution theory, for example, an inherent belief that men are more aggressive may lead individuals to believe that this inherent nature can explain a particular man’s behavior in A particular scenario (see Jensen and Gutek, 1982). If a person believes that women are innately meek, they may

attribute the justification of a woman's behavior to her meekness. In both examples, gender stereotypes about aggression and meekness are a "mental label," or tool, that is used to understand and assign blame to the behavior of women and men. As we explain next, these "mental labels" play an important role in whether a person sees a behavior as sexual harassment.

Gender Essentialism and Seeing Sexual Harassment

Attribution theory suggests that gender essentialists who encounter an illegal act of workplace sexual harassment may not recognize it as such. Instead, the "mental label" they draw upon to interpret behaviors is rooted in the idea that women and men are fundamentally different by nature. For example, in the mind of a gender essentialist, if a woman "acts" like a man (e.g., she is assertive at work), she violates the mental label that the genders are inherently different. Their mental label leaves little room for them to see sexual harassment. Instead, an illegal behavior of a man toward a woman is an attempt to affirm their belief that men and women are inherently different.

Gender Egalitarianism and Seeing Sexual Harassment

Attribution theory suggests that gender egalitarians who encounter an act of sexual harassment at work will recognize it as such. The "mental label" they draw upon to interpret behaviors is rooted in the idea that women and men are equals. The unequal treatment of a woman by a man violates a gender egalitarian's mental label that men and women deserve equal treatment. Their view that women are no less deserving of good treatment than are men suggests that gender egalitarians' mental label gives them accessibility to define illegal male-female interactions as sexual harassment.

Others have found that gender egalitarian beliefs relate to views about the occurrence and prevalence of sexual harassment. For example, women who hold gender egalitarian beliefs are more likely to report being harassed than women with more traditional gender beliefs (Hart, 2019; Lucarini et al., 2020; Otterbach, Sousa-Poza, and Zhang, 2021). Individuals with gender egalitarian beliefs were likely to say they would report sexually harassing behaviors; to report a behavior means that one sees a behavior as sexual harassment and thus deserving of being reported (Baker, Terpstra, and Larntz, 1990).

Meritocracy and Seeing Sexual Harassment

Attribution theory also suggests that individuals with meritocratic beliefs who encounter an act of sexual harassment may not label it as such. Meritocrats draw on a "mental label" which views individuals' success as a product of internal traits, in particular hard work and talent. A meritocrat's mental label can impair their ability to see anything but internal factors as the cause of negative outcomes. A negative outcome – in this case, sexual harassment – happens because the person on the receiving end of it somehow brought it on or "deserves" it because of a

characteristic under their personal control. Drawing on the literature discussed here, we hypothesize:

H1. The stronger one's adherence to gender essentialist beliefs, the lower their likelihood of seeing inappropriate behavior and/or sexual harassment.

H2. The stronger one's adherence to gender egalitarian beliefs, the greater their likelihood of seeing inappropriate behavior and/or sexual harassment.

H3. The stronger one's adherence to meritocratic beliefs, the lower their likelihood of seeing inappropriate behavior and/or sexual harassment.

Beliefs Situated in a Gendered Culture: Academic Engineering

Workplace cultures influence the prevalence and severity of sexual harassment incidences but may also shape personal beliefs and individuals' ability to see sexual harassment within those cultures. Gendered cultures – those that make salient, emphasize, or are otherwise understood as male or female – are especially important. Gendered cultures are prevalent in university settings; some disciplines (e.g., English, fine arts) are female-typed while others (e.g., STEM) male-typed. Engineering, the discipline of focus in this study, is a particularly male-gendered context. It is one of the most gender segregated STEM fields (NSF, 2020) and evokes a culture of machismo: a tolerance and pleasure of grease, dirt, hard work, physical risk, and rigor (Carlone, 2003). It also emphasizes a heavy workload (Frehill, 2004), a sense that engineers are men with interests in technology and a natural talent for technical and mechanical skills (Cheryan et al., 2017; Faulkner, 2009), and that the field deliberately tries to exclude women and limit the display of feminine interaction styles (Dryburgh, 1999; Rhoton, 2011). Women are more likely to experience frequent incidents of sexual harassment in traditional male occupations, organizations where leadership is male-dominated, and organizations where men outnumber women – cultures like engineering (U.S. Merit Systems Protection Board, 1995; Fitzgerald et al., 1997; Berdahl, 2007a; Willness, Steel, and Lee, 2007; Schneider, Pryor, and Fitzgerald, 2011; National Academies of Sciences, Engineering, and Medicine, 2018).

Engineering and Gender Essentialism

Women remain underrepresented in the field of engineering in the United States and elsewhere; in the United States, for example, from 2008 to 2018 white women's presence in the field rose from 10.7 percent to 12 percent, Black women's remained the same at only 1 percent, and Latinas' share increased from 1.8 to 2.5 percent (National Center for Science and Engineering Statistics, 2020; National Science Foundation, 2020). Their underrepresentation stems in part from cultural cues that STEM-related competencies are "masculine" (Hyde et al., 1990; Correll, 2001,

2004; Cech et al., 2011; Cech, 2015), from women's marginalized identity in the field (Hatmaker, 2013), and a supposed incompatibility of their personal identity with the profession (Hirshfield, 2010; Peterson, 2010; Charles, 2011; Cech, 2015). These mechanisms (cultural cues, marginalized and incompatible identities) can shape the response of gender essentialism to an act of sexual harassment. If a gender essentialist draws on a "mental label" that men and women are naturally different, a perception bolstered by the above mechanisms and noted underrepresentation of women in the field, they may feel justified in thinking that women do not "belong" in engineering in the first place and feel less sympathy toward women's experiences there and an obliviousness to sexual harassment against women engineers (see Skewes, Fine, and Haslam, 2018). A recent study on politics confirms this essentialism-negative treatment relationship; the authors found that individuals with a strong adherence to gender essentialism responded negatively to women seeking political candidacy (a male-typed domain) but did not respond so to men seeking the same (Skewes, Fine, and Haslam, 2018).

Engineering and Gender Egalitarianism

Gender egalitarians believe that women can "fit" in male gender-typed spaces like engineering. If gender equitable beliefs are the "mental label" describing the behavior of women and men, egalitarians may view an illegal male-female interaction involving harassment in *any* setting as an act of sexual harassment; women's presence in engineering is no different than her presence elsewhere. For gender egalitarians, the relationship between their personal beliefs and seeing sexual harassment in an engineering setting would be like their interpretation of the same behavior in a gender-ambiguous cultural setting.

Engineering and Meritocracy

Academia in general prides itself on being a meritocratic institution, an idea that is becoming increasingly challenged by the inaccuracy of publication-based evaluation, vastly different levels of financial support, and a growing gender, race, and class divide in who succeeds (Zivony, 2019). Within the academy, some fields still strongly embrace meritocratic ideals. Engineering prides itself on being a meritocratic field; engineers succeed because they work hard and have the talent to do so (Cech and Blair-Loy, 2010). Societal impressions that women do not "fit" in the field may also reflect an assumption that women do not work as hard as men in engineering. Beliefs that women engineers work do not work as hard as men may inform the "mental label" meritocrats use to make sense of an illegal interaction. So, for those who subscribe to the meritocratic point of view, an engineering setting which emphasizes the notion of merit may exacerbate their inability to see sexual harassment. In line with this, for example, Seron et al. (2018) found that meritocratic beliefs were associated with one's capacity to identify discrimination at work. STEM faculty members with strong meritocratic beliefs perceived little discrimination happening in their departments. Drawing on the literature above, we hypothesize:

H4. The negative relationship between gender essentialists beliefs and the likelihood of labeling an interaction as inappropriate behavior and/or sexual harassment will be more negative in an engineering setting than an ambiguous setting.

H5. The positive relationship between gender egalitarian beliefs and the likelihood of labeling an interaction as inappropriate behavior and/or sexual harassment will be similar across settings.

H6. The negative relationship between meritocratic beliefs and the likelihood of labeling an interaction as inappropriate behavior and/or sexual harassment will be more negative in an engineering setting than an ambiguous setting.

Data and Methods

Our data comes from a survey experiment of 210 adults living in the United States. We recruit respondents and administer the survey through the professional survey firm, Qualtrics. Qualtrics recruited a proportionally representative sample of the US population's sex, race/ethnic, and age composition.² Qualtrics invited prospective respondents to complete our study via email. Interested respondents followed a link provided in the email to a webpage that described our study as "seeking their attitudes on various social issues and their opinions about interactions that happen in the workplace."

We took several measures to ensure data quality. We dropped survey respondents who did not pass all attention checks and/or the three manipulation checks, those who straight-lined (e.g., those who answered "slightly agree" to all questions – even those that were reverse coded), and those who completed the survey in less than half the median survey completion time.

We first asked consenting respondents the extent to which they endorsed gender essentialist, gender egalitarian, and meritocratic beliefs. Then we asked a series of questions that measured their opinions about the field of engineering (e.g., openness to women, sex composition, among others). Next, we presented respondents with a fictitious scenario describing an interaction between a female faculty and her male department director at a research university.³ In the interaction, the department director engages in an action that meets the US legal defi-

²To achieve a sample that was proportionally representative of the United States on three attributes, Qualtrics first verified that a respondent was over the age of 18 and to report their sex, race, and year they were born. Once a particular sex, race, and age category was filled to quota, Qualtrics "ended" the survey for a respondent, while continuing to collect data from respondents who fell in the other demographic categories.

³To create this scenario, we drew on interviews that the third author conducted with women about their experiences of sexual harassment at work in the gaming industry (Hoffman, 2018). Thus, the scenario described here is taken from one woman's actual experience of sexual harassment.

nition of sexual harassment⁴ – specifically he remarks on a female researcher’s clothing and physical appearance. Respondents also learn that the comments are part of a repeated pattern of similar behavior, on male department director’s part.

Our focus on university settings is intentional. Because nearly all universities have similar hierarchical structures and rigid systems of merit, the public is likely to have a general sense of the nature of academic settings. More importantly, academic disciplines with varying gendered cultures are the mainstay of any university; most university settings are either female-typed (e.g., nursing, English) and others male-typed, including engineering. We randomly varied the gendered context in which the interaction takes place. In one condition, the interaction occurs between two engineering faculty. In the other condition, we describe the setting in which the same interaction takes place in neutral terms, so it is unclear what academic field the faculty are in. In both scenarios, they are described as researchers (see the Appendix 1 for the scenario wording). After reading the interaction, respondents answered a series of comprehension check questions to ensure they read the scenario carefully and then gave their opinion about the interaction and the individuals involved in it. Finally, respondents answered a series of demographic questions, a question on their own experience with sexual harassment, and questions about their knowledge of sexual harassment.

Measures

Dependent Variable

We are interested in respondents’ interpretation of the interaction between a man (Mark) and his subordinate (Sally). Specifically, we investigate whether they label the scenario as inappropriate and/or sexually harassing behavior. To capture respondent’s interpretation of the male-female interaction, we first asked: How appropriate or inappropriate are Mark’s repeated comments about Sally’s appearance? Respondents could indicate that the repeated comments are: definitely inappropriate, possibly inappropriate, definitely not appropriate. To capture whether a respondent views the interaction as sexual harassment, we ask: Would you classify Mark’s repeated comments about Sally’s appearance as sexual harassment? Respondents could indicate that the repeated comments are: definitely sexual harassment, possibly sexual harassment, definitely not sexual harassment.

Responses to the questions describing Mark and Sally’s interaction are skewed. Seventy-four percent of the sample view the interaction as definitely inappropriate, 16 percent think it is possibly inappropriate, and 6 percent see it as definitely appropriate. At the same time, 43 percent feel the interaction is definitely sexual

⁴The federal government indicates that “unwelcome sexual advances, requests for sexual favors, and other verbal or physical conduct of a sexual nature constitute sexual harassment when this conduct explicitly or implicitly affects an individual’s employment, unreasonably interferes with an individual’s work performance, or creates an intimidating, hostile, or offensive work environment” (EEOC, 2021).

harassment, 40 percent possibly so, and 10 percent definitely not sexual harassment. To estimate models, we create two dichotomous variables: 1 = definitely inappropriate versus 0 = possibly and definitely not inappropriate and 1 = definitely sexual harassment versus 0 = possibly and definitely not sexual harassment. We are interested in understanding both reactions – seeing the interaction as inappropriate *and* as sexual harassment – we combine these dichotomous variables into a measure with three possible outcomes: 1 = sees the interaction as *neither* sexual harassment *nor* as inappropriate (i.e., seeing nothing problematic with Mark and Sally’s interaction), 2 = sees it as *either* inappropriate *or* as sexual harassment (i.e., being ambivalent about the interaction), 3 = sees the interaction as *both* inappropriate and as sexual harassment (i.e., viewing the interaction as unacceptable).

Independent Variables

Gender Beliefs. Independent variables of interest are respondent’s *gender essentialist* and *gender egalitarianism beliefs*. Following previous research on the effects of gender essentialist beliefs on support for gender equality (Skewes, Fine, and Haslam, 2018), we use the previously developed 25-item “Gender Essentialism Scale (GES)” to measure endorsement of gender essentialist beliefs. We use the previously developed 25-item “Sex-Role Egalitarianism Scale (SRES)” to measure the extent to which respondents endorse gender egalitarian roles in marriage, parenting, employment, education, and social-interpersonal-heterosexual domains (see King and King, 1983 and also Beere et al., 1984). See Table A2 for the full gender essentialism scale and example items from the gender egalitarianism scale and alpha levels).

Merit Beliefs. Another independent variable of interest is respondent’s *meritocratic beliefs*. We use a 6-item scale to measure the extent to which a respondent endorses beliefs about meritocracy, coded so higher values represent stronger meritocratic beliefs (see Table A2 for scale items) (Cech, 2017).

Controls

Knowledge of Sexual Harassment. Misunderstanding what constitutes sexual harassment may influence recognizing sexual harassment when it happens. For this reason, we control for respondents’ self-rated knowledge of harassment with the question: “How confident would you be in explaining to a friend what constitutes sexual harassment?” (1 = very confident to 4 = not at all confident). Further, the knowledge a respondent may gain from attending a sexual harassment training may influence their ability to see sexual harassment in the workplace, so we include a second proxy measure of knowledge: a dichotomous variable measuring if a respondent attended a training with the question: “In the past 10 years, have you ever participated in any sexual harassment training (e.g., watched videos, received material, etc.)?” (1 = yes, 0 = no)

Male-typing and Male-dominated Engineering. To gauge whether respondents consider engineering to have a male-typed culture, we measure the extent to

which respondents view engineering as male-typed field by asking the extent to which they agree or disagree with five statements: (1) Engineering work is best performed by men; (2) Compared to men, women are at a disadvantage in engineering; (3) Women perform engineering work as well, if not better, than do men (R); (4) The culture of engineering rewards behaviors more generally attributed to men than to women; and (5) If I were the director of an engineering department, I would often believe that hiring men is a better investment in the future of the university than hiring women (1 = strongly agree to 5 = strongly disagree). These statements loaded on a single factor, so we combine them into a scale ($\alpha = 0.70$). We also ask respondents to indicate if they consider engineering to be made up of mostly men, mostly women, or about the same proportion of women and men (coded into a set of dichotomous variables).

Public Perception of Sexual Harassment. The cultural narrative around workplace sexual harassment has shifted considerably in the #MeToo era. Increased media consumption pertaining to workplace sexual harassment may influence the labeling of an interaction as sexual harassment. To gauge respondents' perceptions of public reactions to sexual harassment, we ask a series of questions that measure the extent to which a respondent agrees or disagrees with the following statements: (1) The public exaggerates the amount of sexual harassment at work; (2) the public spends too much time talking about sexual harassment; (3) the public over-emphasizes the seriousness of sexual harassment at work (1 = strongly agree to 5 = strongly disagree). We averaged their responses to create a scale measuring respondents' view of the public's response to sexual harassment.

Demographic Characteristics. Models account for individual attributes thought to influence the labeling of sexual harassment and personal beliefs. Research on the factors that affect the labeling of an experience as sexual harassment and reactions to that experience focus on the gender of the person evaluating the experience. Women are more likely than men to label problematic situations as sexual harassment (Gutek et al., 1980; Collins and Blodgett, 1981; Gutek et al., 1983; Baker, Terpstra, and Larntz, 1990; Fitzgerald and Ormerod, 1991; Rosette, Akinola, and Ma, 2018). The intersection of gender and race may also influence the relationship between beliefs and seeing sexual harassment. Often women of color may be more likely to experience various forms of workplace harassment, including sexual harassment (see MacKinnon, 1979; DeFour, 1990; Murrell, 1996; Berdahl and Moor, 2006; Onwuachi-Willi, 2018; Cantalupo, 2019; Minnotte and Legerski, 2019; Brassel et al., 2020; Jones, Trina, and Wade, 2020) BUT it is white women who are most likely to label AND REPORT their experiences as sexual harassment (Shupe et al., 2002; Wasti and Cortina, 2002; Ho et al., 2012). In line with the above research, we include a control for *respondent race and gender* with a dichotomous variable (1 = White women, 0 = White men and women and men of color).⁵

⁵We estimated models with a separate measure of race and gender; findings were substantively similar to what we present here.

Age and employment status together relate to beliefs and detecting sexual harassment. Young workers are less likely to see and report sexual harassment (Chan et al., 2008). They are more likely to be “precarious workers” who are likely to be the target of sexual harassment but may lack knowledge about their workplace rights or formal harassment reporting processes (see Good and Cooper, 2016). Models include a set of dichotomous variables that combine *age and employment status*: young workers (18–30 years), mid-age workers (30–45 years), and older workers (45 + years). We control for *education level* with a dichotomous variable indicating a respondent’s highest level of education (1 = Bachelor’s degree, master’s degree, PhD or advanced degree, 0 = Associate’s degree, high school diploma/GED, less than high school). We control for *political orientation* with a dichotomous variable (1 = very conservative or conservative, 0 = moderate, liberal, very liberal). Finally, we control for whether the *respondent ever experienced EEOC-defined workplace sexual harassment* by asking if they had ever experienced unwanted sexual behaviors, advances, remarks, attention, or requests for sexual favors at work (1 = yes, 0 = no) (Stockdale, O’Connor, Gutek, and Geer, 2002; EEOC, 2021).

Models

We first calculate means of all analytic variables. To determine whether respondents view engineering as a male-dominated field, we calculate their average score on two male-typed engineering indicators. To address our first research question (To what extent do personal beliefs about gender and meritocracy relate to seeing an illegal male-female interaction as inappropriate behavior and/or sexual harassment?) we estimate a set of multinomial logistic (ML) logistic regression models with all controls. ML produces estimates coefficients for different dichotomizations of the interpretation of the interaction between Mark and Sally as: (1) *neither* sexual harassment nor inappropriate; (2) *either* inappropriate or sexual harassment; (3) inappropriate *and* sexual harassment. The first set of analyses includes the gender belief measures while the second only the merit measure.⁶ ML models produce beta coefficients, but we transform them into odds ratios when describing results.

To address our second research question (Does the relationship between personal beliefs and seeing a male-female interaction as inappropriate behavior and/or as sexual harassment differ in male-dominated versus ambiguous settings?), we estimate the same models described above but separately for half of sample randomly assigned to the ambiguous research setting and the other half randomly assigned to the engineering setting. To test whether observed differences in the relationship between beliefs and our outcome are statistically significant, we estimate statistical interactions (*belief x condition*) in models.

⁶We estimate logistic regression models (Appendix 3, Table A2) assessing whether a respondent labeled the interaction as inappropriate and in a separate model, as sexual harassment. In these models, results did not differ across engineering versus an ambiguous research setting.

Results

Sample Description

Table 36 shows that the typical respondent is ambivalent about Mark and Sally's laboratory interaction; on average, they see it as *either* sexual harassment or inappropriate (mean = 2.23) as opposed to seeing nothing problematic with the interaction or viewing it as unacceptable. Twenty percent of respondents think nothing was untoward about the interaction (i.e., it is not problematic), 37 percent are ambivalent about it, and 43 percent view it as inappropriate *and* sexual harassment (i.e., they view the interaction as unacceptable).

Table 36. Sample Descriptives (Mean, Standard Deviation), $n = 210$.

	Mean	SD	Coding
Labeling of interaction between Mark and Sally	2.24	0.77	1 (Neither sexual harassment nor inappropriate), 2 (either sexual harassment or inappropriate), 3 (sexual harassment and inappropriate)
Scale components			
Neither sexual harassment <i>nor</i> inappropriate*	20%	—	0.1
Either sexual harassment <i>or</i> inappropriate*	37%	—	0.1
Both sexual harassment <i>and</i> inappropriate *	43%		0.1
Gender Essentialism Scale	3.98	0.64	1 (low) to 5 (high)
Gender Egalitarian Scale	3.28	0.60	1 (low) to 5 (high)
Merit Scale	3.07	1.03	1 (strongly disagree) to 5 (strongly agree)
Controls			
<i>Knowledge of Sexual Harassment</i>			
Confidence in explaining to a friend what constitutes sexual harassment	3.11	1.00	1 (Not at all confident) to 4 (very confident)
Participated in any sexual harassment training in past 10 years	36%	—	0.1

(Continued)

Table 36. (Continued)

	Mean	SD	Coding
<i>Demographic and Individual-level Characteristics</i>			
White female (vs. white men and non-white men and women)	28%	0.1	
Age (years) and employment status			
18–30 and employed	13%	—	0.1
31–45 and employed	19%	—	0.1
46–81 and employed	17%	—	0.1
Ever experienced sexual harassment	33%	—	0.1
Bachelor's degree or above (vs. less than HS degree, HS degree, Associate's degree, some college)	52%	—	0.1
Conservative/very conservative political orientation (vs. very liberal, liberal, moderate)	30%	—	0.1
Public Overreacts to Sexual Harassment Scale	2.39	1.02	1 (strongly disagree) to 5 (strongly agree)
Scale components: Public ...			
... exaggerates amount of sexual harassment at work	2.62	1.25	1 (strongly disagree) to 5 (strongly agree)
... spends too much time talking about sexual harassment	2.05	1.52	1 (strongly disagree) to 5 (strongly agree)
... over-emphasizes seriousness of sexual harassment at work	2.49	1.17	1 (strongly disagree) to 5 (strongly agree)

Notes: * for the outcome measure, coding indicates the outcome definitely sexual harassment/inappropriate (vs. possibly and definitely not); 50% of the sample received the engineering setting version while the other half received the ambiguous setting version; mean differences across condition (engineering vs. ambiguous research setting) not significant.

Respondents lean slightly more to being gender essentialists than gender egalitarians while they fall even slightly lower on the meritocratic scale. That is, the beliefs of the sample are somewhat more essentialist than egalitarian while the sample is middle of the road regarding merit beliefs – they are very close to neither agreeing nor disagreeing with statements that comprise our measure of merit.

Respondents are confident in their ability to explain to a friend what constitutes sexual harassment. Just over one-third participated in a sexual harassment training in the past decade, a measure we consider to be a proxy for knowledge

(assuming here that sexual harassment training informs participants of the aspects of workplace sexual harassment).

When asked to consider the public's reaction to sexual harassment, respondents mostly conclude that the public does not overreact to sexual harassment (mean = 2.39, so somewhere between “disagree” and “neither disagree nor agree”). To be more specific, on average respondents are closer to agreeing that the public exaggerates the amount of sexual harassment at work (mean = 2.62) and that they over-emphasize its seriousness (mean = 2.49) but disagreed to a greater extent with the idea that the public spends too much time talking about sexual harassment.

Just about one quarter of the sample is a white female, over half hold a BA degree or more, 30 percent self-identify as politically conservative or very much so. One-third of sample reported experiencing sexual harassment at work at some point. Among the employed in our sample, most are between the ages of 31–45 (19 percent), followed by ages 46 and above (17 percent), and ages 18–30 (13 percent). The remainder of the sample is unemployed. Mean values did not differ in engineering versus ambiguous research settings.

To summarize, the typical respondent is an employed, 31- to 45-year-old white female with a BA or higher degree and for the most part, is not conservative. This typical respondent sees Mark and Sally's interaction in the laboratory as sexual harassment or as inappropriate, but not as both nor as none of these behaviors. She is slightly more gender essentialist than egalitarian or meritocratic but even so, she is not on one extreme – very much aligned with or very much not so – on each set of beliefs. She is very confident in her sexual harassment knowledge and has, for the most part, not widely participated in sexual harassment training. The typical respondent has not experienced sexual harassment in their work life and disagrees, for the most part, that the public overreacts to sexual harassment.

Half of the respondents were led to believe that Mark and Sally were engineers in a research setting while the other half were given no indication of their academic discipline to see whether a male-typed (engineering) setting might matter differently than an ambiguous one in shaping the relationship between beliefs and the sight of sexual harassment or an inappropriate behavior. To assess whether respondents understood engineering as a male-typed and male-dominated field, we asked them to assess the gender-typing and gender composition of the field of engineering. Table 37 shows that 72 percent of respondents recognized engineering as mostly male (compared to 14 percent who thought it was mixed gender and less than 1% who thought it was female-dominated). We asked their response to a set of statements (see Table 37) and combined these statements into a scale, the average score of which was 2.62, suggesting respondents are middle of the road (but slightly higher) in their view that engineering has a male-typed culture.

Below we describe the results from multinomial logistic models comparing the three levels of the outcome variable. We start with a description of findings in models that include two measures of gender beliefs and follow with a discussion of the results in models that include the merit belief measure.

Table 37. Perception of Engineering Culture, $n = 210$.

	Mean	SD	Scale
Engineering is comprised mostly of men	73%	—	0,1
Engineering has roughly the same number of women and men	14%	—	0,1
Engineering is mostly women	<1%	—	0,1
Engineering masculine typing scale	2.62	0.78	1 (least masculine) to 5 (most masculine)
Scale components:			
Engineering work is best performed by men	2.27	1.22	1 = strongly disagree to 5 = strongly agree
Compared to men, women are at a disadvantage in engineering	2.97	1.22	1 = strongly disagree to 5 = strongly agree
Women perform engineering work as well, if not better, than do men (R)	2.25	0.97	1 = strongly disagree to 5 = strongly agree
The culture of engineering rewards behaviors more generally attributed to men than to women	3.35	1.04	1 = strongly disagree to 5 = strongly agree
If I were the director of an engineering department, I would often believe that hiring men is a better investment in the future of the university than hiring women	2.31	1.17	1 = strongly disagree to 5 = strongly agree

Note: Mean differences across condition (engineering vs. ambiguous research setting) not significant.

Gender Beliefs

For ease of interpreting results (i.e., the two contrasts in multinomial model outcomes), we describe respondents who see Mark and Sally's interaction as *neither* inappropriate *nor* as sexual harassment as seeing "nothing problematic" with the interaction. We describe respondents as "ambivalent" if they see *either* sexual harassment *or* inappropriate behavior. If a respondent views Mark and Sally's interaction as inappropriate *and* sexual harassment, we say they view the interaction as "unacceptable."

Columns A and B in Table 38 tell an important story about gender beliefs. Gender essentialist beliefs (i.e., the belief that gender itself stems from immutable, biological factors) play no role in seeing Mark and Sally's behavior as inappropriate or as sexual harassment. In contrast, gender egalitarian beliefs are associated with lower odds of viewing Mark and Sally's interaction as unproblematic

Table 38. Multinomial Logistic Model Predicting Reaction to Mark and Sally's Interaction with Gender Belief Scales (Columns A and B) and Merit Scale (Columns C and D), $n = 210$ (Beta Coefficients).

	Gender Beliefs		Merit Beliefs	
	A	B	C	D
	Neither SH nor inappropriate (<i>entirely acceptable</i>) versus both SH and inappropriate (<i>unequivocally not acceptable</i>)	Either SH or inappropriate (<i>ambivalent</i>) versus both SH and inappropriate (<i>unequivocally not acceptable</i>)	Neither SH nor inappropriate (<i>entirely acceptable</i>) versus both SH and inappropriate (<i>unequivocally not acceptable</i>)	Either SH or inappropriate (<i>ambivalent</i>) versus both SH and inappropriate (<i>unequivocally not acceptable</i>)
Gender Essentialism Scale	-0.23 (0.47)	0.12 (0.37)	—	—
Gender Egalitarian Scale	-1.32** (0.54)	-1.15* (0.45)	—	—
Merit Scale	—	—	0.60* (0.28)	0.28 (0.23)
Controls				
<i>Knowledge of sexual harassment</i>				
Confidence in explaining to a friend what constitutes sexual harassment	-0.57* (0.25)	-0.58** (0.21)	-0.69** (0.25)	-0.66** (0.22)
Participated in any sexual harassment training in past 10 years	0.56 (0.51)	0.81* (0.43)	0.64 (0.50)	0.76^ (0.42)

<i>Engineering Culture</i>					
Engineering masculine typing scale	-0.24 (0.41)	-0.11 (0.32)	0.04 (0.34)	0.28 (0.29)	
Engineering mostly men (omitted: mostly women, mixed)	0.77 (0.58)	0.28 (0.45)	0.62 (0.56)	0.15 (0.43)	
<i>Demographic and Individual-level Characteristics</i>					
White female	0.19 (0.58)	0.48 (0.46)	-0.18 (0.57)	0.17 (0.45)	
Age and Employment status (omitted: 31–45 and employed and unemployed, all ages)					
18–30 & employed	-1.64 [^] (0.88)	-0.06 (0.57)	-1.24 (0.86)	0.16 (0.54)	
46–81 & employed	-0.56 (0.64)	0.15 (0.50)	-0.93 (0.65)	-0.07 (0.49)	
Ever experienced sexual harassment at work	-0.48 (0.54)	-0.50 (0.43)	-0.55 (0.53)	-0.49 (0.42)	
Bachelor's degree or above	1.28** (0.49)	0.42 (0.40)	1.38** (0.49)	0.40 (0.40)	
Conservative/very conservative political orientation	0.17 (0.56)	0.73 [^] (0.45)	-0.13 (0.56)	-0.66 (0.45)	
Public Overreacts to Sexual Harassment Scale	0.70** (0.25)	0.49* (0.22)	0.64** (0.26)	0.53* (0.23)	
Engineering setting	-0.29 (0.46)	0.15 (0.39)	-0.24 (0.46)	0.14 (0.37)	
Constant	5.07	4.11	-2.83	-1.59	
Pseudo R ²	0.18	0.18	0.17	0.17	

Notes: [^] $p \leq 0.10$, * $p \leq 0.05$, ** $p \leq 0.01$, *** $p \leq 0.001$.

compared to viewing it as entirely acceptable ($b = -1.32$, odds ratio = 0.26) or being ambivalent about it ($b = -1.15$, odds ratio = 0.31). Said differently, the greater one's gender egalitarian beliefs, the more explicit they are in labeling Mark and Sally's interaction as both sexual harassment and inappropriate behavior. Although the gender belief measures are not highly correlated ($r = -0.43$, $p < 0.001$) to cause collinearity, we estimated models (not shown but available upon request) with only one measure of gender beliefs at a time. Results were substantively similar.

The relationship between some control variables and the outcome are useful to note. Being confident in one's ability to explain sexual harassment is associated with lower odds of being ambivalent about the interaction ($b = -0.58$, odds ratio = 0.55) or seeing nothing problematic about it ($\beta = -0.57$, odds ratio = 0.56) compared to seeing it as unacceptable. So, the odds someone is confident in their knowledge of sexual harassment and either sees nothing problematic with or is ambivalent about the interaction are roughly 45 percent the odds of seeing that interaction is *both* inappropriate *and* sexual harassment.

Turning to Column A in Table 38, we see that the percentage odds that an employed individual between the ages of 18–30 sees the interaction as non-problematic (vs. seeing it as unacceptable) are roughly 80 percent lower than the odds of the non-employed and older employed individuals ($\beta = -1.64$, odds ratio = 0.19). Those with at least a BA degree have greater odds ($\beta = 1.28$, odds ratio = 2.60) of seeing the interaction as non-problematic (vs. unacceptable). Looking to Table 38, Column B shows that having received sexual harassment training in the past decade is relevant to the comparison between being ambivalent about Mark and Sally's interaction (they consider it *either* inappropriate *or* sexual harassment) versus seeing the lab interaction is unacceptable. Having had this training increases the odds of being ambivalent about the interaction ($\beta = 0.18$, odds ratio = 2.24). Being politically conservative relates to the outcomes in a similar way; compared to political moderates and liberals, politically conservative respondents are more likely to be ambivalent (compared to being certain the interaction is unacceptable) in their labeling of Mark and Sally's interaction; the odds are roughly 107 percent ($\beta = 0.73$, odds ratio = 2.07) greater for conservatives versus those of different political leanings. Finally, the stronger one's belief that the public overreacts to sexual harassment, the greater their odds ($\beta = 0.49$, odds ratio = 1.63) of seeing nothing problematic with Mark and Sally's interaction as opposed to seeing it as entirely unacceptable.

Beliefs About Merit

Results in Columns C and D of Table 38 establish how merit beliefs relate to the outcome. Greater adherence to meritocratic beliefs is positively related to seeing Mark and Sally's laboratory interaction as unproblematic versus seeing it as entirely unacceptable. That is, the stronger one's belief that good things come from hard work and talent – the mainstay of meritocratic beliefs – the greater their net odds ($\beta = 0.60$, odds ratio = 1.82) of seeing nothing problematic with the interaction compared to finding it both inappropriate and sexual harassment.

Confidence in knowledge about sexual harassment, conceptualized as being able to explain it to a friend, is associated with the labeling of the interaction. The odds are similar—about 50% lower—for seeing nothing problematic or being ambivalent about it versus it being entirely unacceptable. Our second measure of sexual harassment knowledge operates in a different direction. Having been trained is associated with roughly 113 percent greater odds of being ambivalent versus entirely certain the lab interaction is unacceptable. Finally, the more one believes that the public overreacts to sexual harassment, the greater their net odds of being ambivalent about the interaction compared to viewing it as entirely unacceptable (beta = 0.53*, odds ratio = 1.69).

We found no difference in the relationship between either gender or merit beliefs in engineering laboratory versus an ambiguous laboratory setting. We tested the robustness of this finding of no difference across setting in three ways. First by observing the non-significance of the control for version (engineering vs. ambiguous) in the full models. Second, by estimating separate models for the engineering versus ambiguous models (not shown, available upon request) and seeing the same pattern of relationship between beliefs and the outcome in both settings (and as the relationship between the setting and outcomes in the full model). Third, by estimating a statistical interaction between beliefs and setting in the full model (not shown, available upon request).

Discussion

Overall, we find an association between holding some gender beliefs and meritocratic beliefs and one's likelihood of "seeing" inappropriate, sexual harassment as it occurs to others. Contrary to previous research on gender essentialist beliefs and support for gender discrimination (e.g., Skewes, Fine, and Haslam, 2018), we find no relationship between holding gender essentialist beliefs and describing the interaction between Mark and Sally as inappropriate and/or as sexual harassment and so we find no support for *H1*. We suspect that gender essentialist thinking may relate better to seeing sexual harassment happen to oneself because one is best able to assess their own supposedly innately gendered traits. One way to test this explanation is to ask an individual to imagine being involved in an incidence of workplace sexual harassment (i.e., a scenario in which they imagine they are the "victim"). It is important to note that when we predict sexual harassment *or* inappropriate behavior separately (see Table A2), gender essentialism is positively related to labeling the interaction as inappropriate but not as sexual harassment. This finding aligns with the notion that essentialists' "mental label" leaves no room to consider sexual harassment between a man and woman; instead, the interaction between Mark and Sally is an attempt to affirm the idea that men and women are inherently different. We are not surprised then that the measure describing the interaction as unacceptable in our models (the interaction between Mark and Sally is inappropriate *and* sexual harassment) is not related to gender essentialist views, net of controls.

Holding gender egalitarian beliefs are related to labeling an illegal interaction as inappropriate and as sexual harassment, results that support our second

hypothesis. An egalitarian's "mental label" that women and men have the same rights and deserve equal treatment makes them more likely to detect inappropriate behavior and illegal sexual harassment. We suspect the mechanisms whereby egalitarian beliefs relate to identifying sexual harassment are two-fold. First, egalitarians may have a better understanding of broader gender inequalities, both in the workplace and outside of it. Their capacity to see broader inequality may account for their ability to see a specific type of gender-based inequality: sexual harassment. Our models control for knowledge of sexual harassment, but we cannot control for knowledge of general gender-based inequalities or any other legal rights of women and men at work and elsewhere. Second, our fictitious interaction occurs in a laboratory and gender egalitarians may be well-cued into STEM women's challenges. While results do not differ across laboratory context (engineering laboratory vs. an ambiguous laboratory setting), it suggests that they understand all women as easy targets of inappropriate and sexually harassing behaviors. Studying the same interaction in a non-research setting could test this last mechanism.

While research to date has examined the association between holding meritocratic beliefs and seeing workplace discrimination (see Eyer, 2012), we are among the first to empirically test whether beliefs about merit relate to viewing an interaction as inappropriate behavior and/or sexual harassment. We hypothesized that the stronger one's adherence to beliefs about merit, the less likely one is to identify inappropriate and/or sexually harassing behavior (*H3*). Our results partially support our hypothesis; stronger adherence to meritocratic beliefs is associated with seeing nothing wrong with Mark and Sally's interaction.

Knowledge of sexual harassment, which we measure as the confidence to explain what constitutes sexual harassment to a friend and sexual harassment training attendance, stands out as a significant predictor of seeing the interaction as inappropriate and sexual harassment in models including both gender beliefs and merit beliefs. Ones' confidence in explaining sexual harassment to a friend could stem from increased social media exposure to sexual harassment cases in the #MeToo era. With this greater exposure may come the belief (either real or perceived) that one can identify sexual harassment. Attending sexual harassment training, as 36 percent of respondents have done in the past decade, is associated with a feeling of ambivalence toward rather than unaccepting of an illegal act of sexual harassment. That is, our results demonstrate that those with training are less likely to call Mark and Sally's interaction completely unacceptable compared to someone without training. We suspect this happens because trainees are more familiar with the legality of sexual harassment and may be uncertain if the fictitious scenario presented qualifies as such. At the same time, we do not know the content of the training a respondent had. Sexual harassment trainings are common forms of sexual harassment prevention in American workplaces (Perry, Kulik, Bustamante, and Golom, 2010), yet evidence of their effectiveness is inconclusive (Roehling and Huang, 2017). Nor are all trainings alike; most attempt to change employees' behaviors, attitudes, skills, and knowledge around sexual harassment (Roehling and Huang, 2017) but do so differently and have varying effectiveness. For example, traditional video trainings can change employees' knowledge, but

may not change behaviors and attitudes (Perry et al., 1998). Further, anti-discrimination trainings can unintentionally exaggerate differences between demographic groups and benefit the majority group. These trainings can also increase bias by making it more cognitively available in the minds of those undergoing training (Dobbin and Kalev, 2018; Wynn, 2018). Sexual harassment trainings which prohibit specific behaviors and signal that men trainees are probable perpetrators can lead to a decrease in the number of women managers within a company. In companies with a high proportion of women in management positions, sexual harassment trainings may activate group threat among men and with it, backlash against women, especially against women managers (Dobbin and Kalev, 2019).

#MeToo changed the general public's views on sexual harassment, reducing both women and men's dismissal of sexual misconduct (Szekeres, Shuman, and Saguy, 2020). The attitudes of respondents reflect this new understanding; overall they felt the public does not overreact to sexual harassment. The media often highlights extreme acts of sexual harassment altering public perceptions of what constitutes sexual harassment. Thus, when seeing milder acts of harassment, like our scenario, even those who believe the public does not overreact to sexual harassment may not label Mark and Sally's interaction as such.

On the other hand, the stronger one believes that the public overreacts to sexual harassment, the more likely it is that they see Mark and Sally's interaction as acceptable. Believing the public overreacts to sexual harassment may also be closely related to the idea that some have been punished unfairly for sexual harassment, that workplaces are to blame for harassment (Grimsley, 1996), or that women exaggerate, lie, and misinterpret events as sexual harassment rather than just a "misunderstanding" (Buddie and Miller, 2001). Exposing respondents to a scenario depicting a more extreme act of sexual harassment could further help us explain this finding. We were especially interested in seeing whether one of the most male-typed and male-dominated fields, engineering, would exacerbate the relationship between gender beliefs (gender essentialism and egalitarianism), merit (personal responsibility for sexual harassment), and recognition of sexual harassment. We find no evidence that the connection between gender and meritocratic beliefs differ in an engineering research setting versus an ambiguous one. We did find belief systems operate similarly across setting, possibly because both are laboratory research settings. No matter what type of setting (male-typed or gender ambiguous), just knowing that the interaction occurred in a research lab made the settings similar in the respondent's minds. That is, for respondents, a lab is just a lab; the STEM discipline of the lab users is irrelevant. Contrasting an engineering research setting outside of a laboratory with, for example, a research setting in a female-typed non-laboratory setting can help tease out whether the gender-typing of a field moderates the relationship between beliefs and seeing sexual harassment.

Conclusions

Our study addresses a valid and growing social problem. Given growing concern about gendered workplace experiences, sexual harassment is an increasingly

common discussion topic among employers, workers, and academics. Women are the most likely to be targets of gender discrimination, sexual harassment, and workplace harassment, particularly in male-dominated work environments like engineering (Cortina, Magley, Williams, and Langhout, 2001; Schmitt, Branscombe, Kobrynowicz, and Owen, 2002; Berdahl, 2007; Rospenda, Richman, and Shannon, 2009). They experience higher rates of workplace mistreatment than men, including sexual harassment and generalized workplace harassment (Uggen and Blackstone, 2004; McLaughlin, Uggen, and Blackstone, 2012; Harnois and Bastos, 2018; Minnotte and Legerski, 2019; Roscigno, 2019). In 2019, the United States EEOC received 7,514 sexual harassment complaints, 10 percent of *all* workplace harassment charges (EEOC, 2019a). Women filed nearly 80 percent of these charges (EEOC, 2019b). Yet the pervasiveness of sexual harassment experiences in women's lives is far greater than the number of EEOC filings suggest (Fitzgerald and Cortina, 2018). Anywhere from 80–87 percent of women in the USA have experienced an incidence of sexual harassment in their adult lifetimes (Keplinger et al., 2019).

Regardless of its form, sexual harassment experiences have serious implications for the health, well-being, and organizational commitment of victims, particularly for women. Women who experience sexual harassment suffer from severe health problems and work-related stressors that lead to lower job satisfaction, lower leadership ambition, and even job loss (see Barling et al., 1996; Fitzgerald et al., 1997; Schneider, Swan, and Fitzgerald, 1997; Piotrkowski, 1998; Richman et al., 1999; Harned and Fitzgerald, 2002; Willness, Steel, and Lee, 2007; Chan et al., 2008; Merkin, 2008; Rospenda, Fujishiro, Shannon, and Richman, 2008; de Haas, Timmerman, and Höing, 2009; Ho, Dinh, Bellefontaine, and Irving, 2012; Okechukwu et al., 2014; Reed, Collinsworth, Lawson, and Fitzgerald, 2016; Fitzgerald and Cortina, 2018; Lindquist and McKay, 2018; Thurston et al., 2019). Specifically relevant to our current study, interviews with women faculty working in science, engineering, and medicine who had been sexually harassed revealed that some victims stepped down from leadership positions, left their institutions, or left their fields all together following their sexual harassment experiences (National Academies of Sciences, Engineering, and Medicine, 2018).

Limitations

While the study contributes to an important understanding of sexual harassment experiences in research settings and the influence of gender and merit beliefs on the recognition of such incidents, we would be remiss if we did not discuss study limitations. First, we examine what shapes peoples' recognition of sexual harassment in a scenario in which respondents have very little context with which to form opinions. The labeling of an act of sexual harassment at work depends on a multitude of contextual factors we cannot account for here. In-depth interviews with workers in an organization may provide greater perspective on how individuals' adherence to certain beliefs matter in recognizing sexual harassment in the workplace. Our study explores how beliefs shape the recognition of sexual harassment, not how an individual's beliefs about gender and meritocracy might

affect their reactions to the behavior (e.g., intervene, do nothing, approach the accuser, etc.). It is important to understand the behavioral outcomes of holding these beliefs for universities and employers interested in reducing sexual harassment incidents by seeking bystander assistance training within their institutions.

Contributions

Intersectionality and an Agenda for Future Research

Transferability of the Results to Other Types of Workplace Discrimination. Discriminatory behaviors and harassment at work are not limited to sexual harassment. Men and women encounter other types of gender-based discrimination and harassment, like that found on the basis of family status (family responsibilities discrimination [FRD]). FRD is unique from sexual harassment in that society sees FRD as a “status of choice” (see [Blaine and Williams, 2004](#); [Major and Sawyer, 2009](#); [Eyer, 2012](#)). In other words, many people no longer think of having children as a “natural” or inevitable part of the adult life course, but rather as a choice that some individuals make. When a status is “chosen” or “controllable” – as in the case of family responsibilities – individuals’ ability to detect FRD may be especially influenced by their beliefs because they already lean toward seeing the harassment as warranted (see [Savani et al., 2011](#); [Hebl, Moreno, and King, 2018](#)). Future research should consider how adherence to beliefs beyond those studied here affect individuals’ ability to detect discrimination on the basis of characteristics that are perceived to be both within (e.g., family) and outside of (e.g., gender or race/ethnicity) employees’ control.

Transferability of the Results to Other Social Spaces. The link between one’s beliefs and interpretations of workplace interactions occur in a social context. They occur in informal spaces, highly regulated ones, and in spaces with varying cultures. Our analyses focused on a male-typed space, a university engineering department, and a gender-ambiguous space. Engineering is one of the most male-dominated and male-typed disciplines in university settings, both in the USA and elsewhere (for an exception, see [Kmec et al., 2019](#)). Studying engineering departments serves to highlight its male-typed culture. It is very likely that the connection between beliefs and the labeling of an illegal male-female interaction is very different in, for example, female-typed settings like education or nursing. Women “fit” in female-typed settings; society does not challenge their presence in them. As such, a negative male-female interaction, like sexual harassment, may seem more obvious or unacceptable in these spaces. Further, negative male-female interactions take place beyond academia, in work contexts with less inflexible and traditional career progressions, organizational cultures with varying power dynamic structures. Beliefs on meritocracy and gender matter in, for instance, corporate cultures.

What is more, the link between beliefs about gender and merit matter outside of the workplace. Currently Americans are deeply divided on an array of political and social issues ([Pew Research Center, 2017](#)), and the rest of the world grapples

with similar divisions as seen with Brexit (Schumacher, 2019). Our findings hint that people's belief systems are at the root of their interpretation of these issues. Future research should continue here, investigating the role of gender and meritocracy beliefs on sexual harassment in social spaces inside and outside of academia.

Transferability of the Results to Other Socio-Demographic Groups. The relationship between gender beliefs, meritocratic beliefs, and sexual harassment recognition may operate differently when members of different socio-demographic groups are involved in workplace sexual harassment. We suspect that when individuals attempt to make sense of a situation involving an illegal act of sexual harassment, they draw on widely shared beliefs about a person's socio-demographic characteristics. Seeing an act as sexual harassment is a social process involving at least two actors (a perpetrator and a victim), so like any social process involving actors, individuals draw on deeply ingrained status beliefs and biases about the groups to which those actors belong to help make sense and form opinions of the situation. When a victim is an underrepresented racial/ethnic minority, status beliefs about race and ethnicity inform the interpretation. Seeing sexual harassment may differ if a victim is from a lower social class compared to a higher one or when one is young versus old. Our scenario made the gender of Mark and Sally obvious so we believe what we observe will operate similarly with a female victim. Our observations may differ with a male victim; people may assume that only a "weak" man is harassed and so their beliefs about gender may operate differently. Our findings may not transfer the same way to situations involving race and ethnic minority victims (although we did not indicate Mark and Sally's race, respondents' likely assumption is that they are white absent other signals). Future research should vary the victim's socio-demographic characteristics to test this idea.

Research and Applied Contributions

This study contributes in multiple ways to the growing body of work on the sexual harassment of women, especially as it occurs in male-dominated work cultures. We are among the first to survey a representative sample of America's sex, race, and age composition and to expose each respondent to the same instance of sexual harassment in a research setting. By exposing all respondents to the same interaction, we are confident that we capture a real relationship between individuals' beliefs and their labeling of an act as sexual harassment.

Our study updates research on sexual harassment by collecting data in a time when the media regularly expose individuals to acts of and discussion about sexual harassment. The exposure to these conversations likely impacts the detection of sexual harassment. One of the first studies to investigate individuals' knowledge about sexual harassment is decades old, published near the time when US federal government recognized sexual harassment as an illegal workplace act. For example, 1981 study of roughly 7,000 subscribers to the Harvard Business Review (Collins and Blodgett, 1981) concluded that nearly all

respondents were able to label extreme behaviors as sexual harassment (e.g., “Mr. X has told me it would be good for my career if we went out together. I guess that means it would be bad for my career if I said no”) but far less able to identify an ambiguous interaction (e.g., “My supervisor (a man I work with) puts his hands on my arm when making a point”) as sexual harassment. Because the public’s knowledge of what constitutes sexual harassment and legal remedies around it have dramatically changed since the early 1980 – the U.S. Merit Systems Protection Board (2018) found that by 2016, 94% of men knew that unwanted sexual remarks were sexual harassment and 97% of men knew that pressuring a female coworker for sex was sexual harassment – accounting for this knowledge is important. By including measures of sexual harassment knowledge using data collected in 2020 we can better capture how knowledge matters for “seeing” sexual harassment.

Second, we add to the growing body of research that examines the ways beliefs matter for individuals’ ability to see discrimination that *happens to others* (e.g., Cech et al., 2018; O’Connor and Kmec, 2020). Rightfully so, researchers have paid close attention to understanding sexual harassment as it happens to them but understanding the factors that lead people to see sexual harassment that happens to others is increasingly important considering the broader movement asking allies and bystanders to intervene in instances of workplace discrimination (Miller, 2017). In fact, the EEOC (2016) issued a report providing a series of recommendations for reducing workplace harassment that included a section on bystander intervention training.

Finally, our study has policy implications for the workplace. To reduce sexual harassment and discrimination of all kinds, individuals must be able to identify discriminatory behaviors, yet largely missing from attempts to mitigate workplace discrimination is consideration of personal beliefs about gender and merit. As we see in some models, having received sexual harassment training in the last decade does not always lead one to believe that the interaction between Mark and Sally is entirely unacceptable. If these beliefs are strongly tied to seeing inappropriate or sexually harassing behaviors, it is possible that when training employees about sexual harassment discrimination, appealing to their understanding of gender and the role of personal responsibility can be useful. For example, employer-led sexual harassment trainings, in both university and non-academic institutions, may be more effective (or at least more appealing) if they start with a recognition of the influence of gender beliefs on interpretation of an action (i.e., a discussion of attribution theory) before moving to discussions of the legality of the harassment.

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Appendix 1

Scenario

Dr Sally Fisher and five other [engineer/researchers] have been working together for several months [to develop a new cell phone battery/on an important new research project]. They frequently work into the late evening. Dr Mark Holmes, the Department Director, recently attended one of these evening work sessions.

To support the [engineers/researchers], he brought them pizza and told them they could skip the next day's department meeting. On his way out, he noticed Dr Sally Fisher's appearance. He approached her and said, "You look very attractive in that skirt. You should wear it more often."

For the rest of that work session, Sally could not focus on her work. She frequently wore skirts to work and Mark often made comments like this about her appearance in them. These repeated comments made her feel uncomfortable. And like the other times, she felt uneasy with Mark's comments at the work session, so she left and tried to avoid Mark for the rest of the week.

Appendix 2

Table A1. Scale Operationalizations.

<i>Gender Essentialism Scale</i>
<p>A scale (alpha = 0.89) that combines respondents' agreement with the following statements: "Differences between women and men's personalities are in their DNA," "Men and women have different abilities," "Genes are at the root of differences between the sexes," "People generally over-estimate how much sex differences in behavior are biologically based (reverse)," "Differences between men and women in behavior and personality are largely determined by genetic predisposition." "Fathers must learn what mothers are able to do naturally," "People tend to be either masculine or feminine: there's not much middle ground," "Wherever you go in the world, men and women differ from one another in the same kinds of ways," Members of each gender have many things in common (rev)," "It is possible to know about many aspects of a person once you learn their gender," "Trying to make boys and girls have similar likes and dislikes is pointless," "In 100 years, society will think of the differences between women and men in much the same way as today," "Women and men are fundamentally different," "Women are innately more nurturing than men," "Knowing that someone is a man tells you very little about what the person is like (rev)," "Men and women's personalities are more or less the same (rev)," "Men and women differ in numerous ways," "Their underlying nature makes it difficult for men to learn to behave more like women," "Differences between boys and girls are fixed at birth," "Mothers are naturally more sensitive to a baby's feelings than fathers are," "Men and women have different personality types," "Male and female brains probably work in very different ways," "Differences between men and women are primarily determined by biology," "Women are naturally less aggressive than men," "Upbringing by parents and the social environment have far greater significance for the development of sex differences than inborn differences in female and male brains (rev)" (1=strongly disagree to 5=strongly agree).</p>
<i>Sex-Role Egalitarianism Scale (SRES).</i>
<p>A scale (alpha = 0.94) that combines respondents' agreement with items that measure beliefs about equality across five dimensions: marital roles (e.g., "Cleaning up the dishes should be the shared responsibility of husbands and wives"), parental roles (e.g., "A husband should leave the care of young babies to his wife", reversed), employment roles (e.g., "Women have as much ability as men to make major business decisions"), social-interpersonal-heterosexual roles (e.g., "A woman should be careful not to appear smarter than the man she is dating", reversed), and educational roles (e.g., "Expensive job training should be given mostly to men", reversed).</p>

(Continued)

Table A1. (Continued)

Meritocracy Scale

A scale ($\alpha = 0.88$) that combines respondents' agreement with the following statements: 1. Overall, U.S. society is equitable and fair. 2. Individuals are personally responsible for their position in society. 3. Opportunities for economic advancement are available to anyone who cares to look for them. 4. Society has reached a point where poor people and rich people have equal opportunities for achievement. 5. Society has reached a point where white Americans and racial/ethnic minority Americans have equal opportunities for achievement. 6. Society has reached a point where women and men have equal opportunities for achievement.

Appendix 3

Table A2. Logistic Models Predicting Seeing Sexual Harassment (Columns A and B) and Inappropriate Behavior (Columns C and D), $n = 210$ (Odds Ratios).

	A: Sexual Harassment ^a	B: Sexual Harassment	C: Inappropriate ^a	D: Inappropriate
Gender Essentialism Scale	0.86 (0.29)	—	1.69 (0.66)	—
Gender Egalitarian Scale	2.44* (0.98)	—	2.07^ (0.88)	—
Merit Scale	—	0.75 (0.15)	—	0.64^ (0.15)
Controls				
<i>Knowledge of Sexual Harassment</i>				
Confidence in explaining to a friend what constitutes sexual harassment	1.83** (0.36)	1.95*** (0.39)	1.14 (0.22)	1.2 (0.23)
Participated in any sexual harassment training in past 10 years	0.42* (0.16)	0.43* (0.16)	1.29 (0.52)	1.20 (0.48)
<i>Engineering Culture</i>				
Engineering masculine typing scale	1.16 (0.35)	0.85 (0.21)	1.12 (0.38)	1.10 (0.30)
Engineering mostly men (omitted: mostly women, mixed)	0.42* (0.18)	0.48^ (0.19)	0.93 (0.40)	1.05 (0.45)
<i>Demographic and Individual-level Characteristics</i>				
White female	0.62 (0.27)	0.82 (0.34)	1.29 (0.59)	1.53 (0.71)

Age & Employment status (omitted: 31–45 and employed and unemployed, all ages)

18–30 and employed	3.37* (1.82)	2.64 (1.37)^a	1.65 (0.93)	1.19 (0.66)
46–81 and employed	1.34 (0.60)	1.59 (0.71)	1.39 (0.75)	1.84 (0.99)
Ever experienced sexual harassment at work	2.02^ (0.79)	1.98^ (0.77)	0.89 (0.39)	0.97 (0.41)
Bachelor's degree or above	0.53^ (0.19)	0.52^ (0.19)	0.36** (0.14)	0.32** (0.13)
Conservative/very conservative political orientation	0.68 (0.29)	0.73 (0.31)	0.98 (0.43)	1.03 (0.46)
Public Overreacts to Sexual Harassment Scale	0.61* (0.12)	0.61** (0.13)	0.64* (0.13)	1.43 (0.63)
Engineering setting	1.17 (0.40)	1.16 (0.39)	1.27 (0.48)	1.22 (0.45)
Constant	0.03	2.67	0.07	16.64
Pseudo R ²	0.21	0.20	0.11	0.11

Notes: ^p ≤ 0.10, *p ≤ 0.05, **p ≤ 0.01, ***p ≤ 0.00.1.

^a For outcome measures, coding indicates the outcome definitely sexual harassment/inappropriate (vs. possibly and definitely not).

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Managerial Discourse as Neutralizer? The Influence of the Concealment of Social Categories on the Experience of Workplace Bullying in Research Organizations

Agnès Vandeveldde-Rougale and Patricia Guerrero Morales

Abstract

This chapter looks at the discursive dimension of the working environment in research and higher education organizations; more specifically at neoliberal managerial discourse and at how it participates in shaping the way researchers, teachers and support staff perceive themselves and their experiences. It is based on a multiple case study and combines an intersectional and a socio-clinical approach. The empirical data is constituted by in-depth interviews with women conducted in Ireland and Chile, and includes some observations made in France. A thematic analysis of individual narratives of self-ascribed experiences of being bullied enables to look behind the veil drawn by managerial discourse, thus providing insights into power vectors and power domains contributing to workplace violence. It also shows that workplace bullying may reinforce identification to undervalued social categories. This contribution argues that neoliberal managerial discourse, by encouraging social representations of “neutral” individuals at work, or else celebrating their “diversity,” conceals power relations rooting on different social categories. This process influences one’s perception of one’s experience and its verbalization. At the same time, feeling assigned to one or more of undervalued social category can raise the

Diversity and Discrimination in Research Organizations, 331–364



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perception of being bullied or discriminated against. While research has shown that only a minority of incidents of bullying and discrimination are reported within organizations, this contribution suggests that acknowledging the multiplicity and superposition of categories and their influence in shaping power relations could help secure a more collective and caring approach, and thus foster a safer work culture and atmosphere in research organizations.

Keywords: Academia; care; clinical sociology; harassment; intersectionality; managerial discourse; power relations; research organization; subjectivity; women; workplace bullying

Introduction

In this chapter, we look at the discursive dimension of the working environment in research organizations; more specifically in higher education institutions,¹ which undertake research and teaching activities. We question neoliberal managerial discourse and how it participates in shaping the way researchers (often also teachers in academia) and support staff perceive themselves and their experiences.

The managerial (or management) discourse can take various textual forms, such as “governance policies” advertised on the organizations’ websites, trainings offered to academics to teach them how to fund their research projects or to lead their departments, or “personal development reviews,” among others. This dominant discourse, infused with corporate culture, is marked by several “key themes,” that show a shift in priorities, where “economic values” take over “the intrinsic worth of academic enquiry” and teaching (Morrish, 2017: 138), but also where academics have internalized managerial values, such as individualization, performance and positivity... As linguist Liz Morrish points out, this subjective influence of managerial discourse complicates its questioning. However, as shown by social psychology research on emotions and their communication (Rimé, 2005), when confronted with difficult emotional experiences, individuals struggle to make sense of these experiences. This can help question the dominant discourse.

In order to question the subjective influence of managerial discourse, we therefore chose to consider workplace bullying,² “a highly complex area where polyphony is important” for sense-making (Liefogge and Mackenzie Davey, 2010: 71),

¹In this chapter, the words “higher education institutions,” “academia” and “universities” are considered synonymous and encompass “vocational schools”; the organizations considered link research with teaching activities.

²In this chapter, we understand “workplace bullying” in a broad sense, in order to label experiences of victimization at work linked to work-related misconduct, such as emotional abuse, and including (but not limited to) sexual harassment. Workplace bullying is commonly designated as “acoso moral” or “mobbing” in Chile, “harcèlement moral” in France, and “workplace bullying” in Ireland.

but that has been “institutionalized” through legislative and organizational texts (Liefoghe and Mackenzie Davey, 2010). These texts, such as so-called “anti-bullying policy” or “diversity and inclusion charter,” are “anchoring [workers] in a dominant, individualizing discourse” (Liefoghe and Mackenzie Davey, 2010). When acknowledged, bullying is generally framed “as a form of interpersonal conflict or as a response to organizational pressure, change, or chaos” (Hutchinson et al., 2010: 38), interpretations that “obscure the role of power dynamics within institutions” (Hutchinson et al., 2010: 39). We suggested in previous work that managerial discourse can limit the use of the symbolic function of language, and thus the possibilities of making sense of workplace bullying (Vandeveld-Rougale, 2015, 2016, 2017, 2020; Vandeveld-Rougale and Guerrero Morales, 2019), inter alia by “erasing heterogeneity” (Oger and Ollivier-Yaniv, 2006), thus leading the individuals to find fault within themselves rather than questioning the organizational and social systems (including power relations) that facilitate workplace bullying. This contribution investigates this phenomenon further with a focus on research organizations and higher education institutions. It addresses one main research question, namely: how can social categories and their intersection help make sense of bullying experiences in academia?

Our reflection is based on a multiple case study (Yin, 2014) that makes it possible to analyze the data within each situation as well as across different situations. It combines an intersectional approach (Collins, 2009; Bilge, 2013, 2015) with a socio-clinical approach, which links psychoanalytic theories with social ones (Gaulejac et al., 2007; Enriquez, 2009). The empirical data is constituted by in-depth interviews with women conducted in Ireland and in Chile, and it includes observations made in France. Our fieldwork is based on our experiences as researchers; the similarities that we observed in these various countries helped us question the specific influence of neoliberal managerial discourse, that spread across countries and languages.

After a brief overview of neoliberalism and management in academia, a thematic analysis of individual narratives of self-ascribed experiences of being bullied enables us to look behind the veil drawn by managerial discourse, thus providing insights into five main intersecting power vectors and domains contributing to workplace violence (that includes but is not limited to bullying), namely: class, age, gender, structure, and embodied aspects. We argue that neoliberal managerial discourse, by encouraging social representations of “neutral” individuals at work, or else celebrating their “diversity,” conceals power relations rooting on different social categories. This process influences one’s perception of one’s experience and its verbalization. At the same time, feeling assigned to one or more undervalued social category can raise the perception of being bullied or discriminated against. While research has shown that only a minority of incidents of bullying and discrimination are reported within organizations (O’Moore and Lynch, 2007; Schraudner et al., 2019), this contribution suggests that acknowledging the multiplicity and superposition of categories, and their influence in shaping power relations, could help secure a more collective and caring approach, and thus foster a safer work culture and atmosphere in research and higher education organizations.

Neoliberal Management in Academia

During the past decades, research organizations and higher education institutions have been increasingly confronted with two paradoxical trends documented in research conducted in several fields (mainly education sciences, sociology, psychology, sociolinguistics): on the one hand, they are urged to take part in worldwide competitions symbolized by international rankings systems³; on the other hand, they face states' budgetary disengagement and a targeted distribution of resources (Noûs 2020; Hodgins and McNamara, 2021). These trends are accompanied by management practices inspired by the corporate sector (such as the New Public Management reforms that introduced and institutionalized market values in the public sector), embedded in various tools and discursive practices that receive a growing interest since the early 2000s, and even more so since the 2010s. Linguist Liz Morrish thus stresses the “shift towards a new arena of discourse [...] associated with managerialism in Universities” that “has started to cause concern among the academics who are its recipients” (Morrish, 2017: 136).

Managerial discourse conveys a utilitarian view of human beings and relationships, considered as resources to maximize profit or limit expenses (Le Texier, 2016). It is based on the principles of “efficiency, organization, control and rationalization” (Le Texier, 2016: 14 – our translation). Critical work focusing on managerial discourse has shown that it participates in defusing social critics through their integration in organizational communication (Boltanski and Chiapello, 1999). Increased attention for the individual and his/her well-being in the twentieth century has thus been integrated into professional and personal development schemes promising self-actualization, and the search for happiness has been instrumentalized through “happiness management” (Cabanas and Illouz, 2018). The valorization of the individual (through notions like autonomy, responsibility, adaptability etc.), the promotion of excellence and the promise of “objective” measurement have led to the euphemizing of structural inequalities and power relations, and to the “displacement of conflictuality from the social to the psychic dimension” (Gaulejac, 2020: 16 – our translation).

Combined with neoliberalism, managerial discourse is both an ideological tool spreading neoliberal values, a tool of symbolic power, and a pragmatic tool that influences individuals' behavior (Vandeveldde-Rougale and Fugier, 2014). With the globalization that started in the 1980s, neoliberal managerial discourse has thus contributed to the naturalization of market thought across sectors and countries, impacting both work organization and the workers' subjectivities. It has notably participated in the construction of the organizational reality of the

³“There are three prominent and prestigious ranking systems – QS World University Rankings, Times Higher Education World University Rankings and Academic Ranking of World Universities (commonly called Shanghai Rankings),” “all commercial enterprises making the irrational adherence to them all the more surprising” (Hodgins and McNamara, 2021: 10–11). Chile, France and Ireland higher education institutions feature in all of them.

“neoliberal university” (Holborow, 2013, 2015), with agencies for evaluation and funding promoting “a culture of ‘performance’, ‘results’, and ‘excellence’” (Noûs, 2020). This trait of neoliberal managerial culture resonates with the “principle of anonymous and asexual meritocracy” that had been introduced with diversity in universities (Cardi et al., 2005: 50 – our translation) and with “the academic predisposition to overwork and to self-scrutiny” (Morrish, 2017: 151). Together with the promise of self-actualization, this contributed to the appropriation of neoliberal managerial discourse by academics. And similarly, managerial discourse can participate in euphemizing or denying structural inequalities, as well as inhibiting critics. Indeed:

a characteristic of neoliberal discourse is that it disguises its own negative impact and so forestalls resistance, and that by locating critique outside the range of the sayable, our resistance is blunted. It is an environment where the rank-and-file academic is made to feel responsible for their own oppression and stress, while at the same time feeling privileged and undeserving of better. (Morrish, 2017: 147, 148 – based on Davies and Petersen, 2005: 85)

Although “academic careers differ from country to country in both form and content,⁴” the evolutions brought on by neoliberalism resulted in several general tendencies affecting conditions of work and employment in academia worldwide, notably: precarious employment with increased use of temporary staff, fiercer competition among workers for permanent positions and/or funds, search for cost-efficiency, and threats on academic freedom (Petersen and Davies, 2010; Monte and Rémi-Giraud, 2013; Collective, 2014; Morrish, 2017; Gray et al., 2018; ILO, 2018; Duclos and Fjeld, 2019...). These trends have inter alia been documented in the countries where we conducted our fieldwork: Ireland (e.g., Holborow, 2013; Holborow and O’Sullivan, 2017; Hodgins and McNamara, 2021), France (e.g., Gaulejac, 2012; Noûs, 2020) and Chile (e.g., Campos-Martinez and Guerrero Morales, 2016; Foladori and Guerrero, 2017; Guerrero, 2017; Guerrero, Foladori, and Silva de los Rios, 2019; Guerrero, Gárate Chateau et al., 2019).

Workplace Bullying

Parallel to the interest for neoliberalism and managerial discourse, workplace bullying has received a growing attention since the 1990s, with “bullying at work research” now constituting “a field in its own right” (Liefvooghe, 2004: 265). The interest from researchers resonated with the concern from legislators and organizations alike, thus leading to an “institutionalization” of bullying at work that

⁴See the Academic Careers Observatory from the European University Institute: <https://www.eui.eu/ProgrammesAndFellowships/AcademicCareersObservatory/AcademicCareersByCountry> (retrieved on October 25, 2020).

limits its understanding to “the dominant perspectives conceptualizing workplace bullying as an individual or interpersonal issue” (Liefoghe and Mackenzie Davey, 2010: 71). This conception is embedded in organizational texts on the prevention of workplace bullying and the promotion of and respect for diversity in organizations, that form part of today’s managerial discourse.

European higher education institutions have followed the trend set in the United States, and have been increasingly committing in writing to “creating an environment where diversity is celebrated and everyone is treated fairly regardless of gender, age, race, disability, ethnic origin, religion, sexual orientation, civil status, family status [...]”⁵ over the last decade. Such statements can be read on French or Irish universities’ websites for instance. They are usually signed by the universities’ head and accompanied by dedicated “policies and procedures,” notably guidelines setting out “the framework for dealing with complaints of bullying and harassment, including sexual harassment.” Although prevention of bullying as such hasn’t been integrated in the institutional communication of Chilean universities, the late 2010s have also seen an increased attention to the promotion of diversity and gender equality, as exemplified with the creation of a “unit for equality and diversity” and a commission to define “criteria and protocols to address cases of sexual harassment that may occur within the institution” in the University of Valparaiso in 2016.⁶

Workplace bullying can be defined as “systematic negative treatment of an individual over an extended time in situations which he or she has difficulties to defend against” (Rosander et al., 2020: 2, based on Einarsen et al., 2010) and two main methods are usually used when assessing bullying:

- (a) the self-labelling method, involving people assessing if they feel they have been victimised based on their own understanding of the concept of bullying, or based on a given definition; and
- (b) the behavioral experience method, which entails the perception of being exposed to a range of different bullying behaviors without ever mentioning bullying. (Rosander et al., 2020: 2, based on Nielsen et al., 2010)

⁵Quote from the website of an Irish university (2020); similar wordings can be read on French universities’ websites consulted in October 2020. One or more task managers (named “equality referent”) from the human resources department are usually in charge of coordinating action with members of the faculty that can be identified as “equality referees.” The comparative work conducted by Laure Bereni on diversity managers in the private sector in New York and Paris highlights “the salience of race and gender in the corporate framing of diversity, beyond the ubiquitous rhetoric celebrating an infinite array of differences” (Bereni and Noûs, 2020). The same may be said about higher education institutions, whose rhetoric copies the corporate framing of diversity, but it would need further study to be confirmed.

⁶See <https://igualdadydiversidad.uv.cl/unidad> and <https://pdn.uv.cl/?id=7748> (retrieved on October 25, 2020).

Andreas Liefoghe and Kate Mackenzie Davey (2010) stress the complexity of workplace bullying and the importance of the perception of powerlessness that it entails:

With bullying at work, sense-making plays an important role. Certain acts are experienced as negative. They are long-term, ongoing and individuals perceive themselves as powerless to do anything about them.

Workplace bullying is not limited to interpersonal acts, but can encompass “institutional bullying,” that imposes “oppressive or damaging conditions on the individuals in the organization” and “is characterized by on-going, persistent unreasonable demands on staff and lack of care for the impact of these processes on welfare and well-being” (Hodgins and McNamara, 2021). In addition to contributing to the alteration of the working environment (that is often associated with increased levels of interpersonal bullying), institutional bullying can have direct detrimental effects on the individuals. Considering recent evolutions in Irish public universities, Margaret Hodgins and Patricia McNamara have thus argued that the policies and practices of new public management, such as increased individualism, over-competitiveness and “the tyranny of performativity,” are in themselves a form of bullying. For instance, the lack of funding for research can lead to “a pejorative distinction between research-active and non-research-active academics” (Hodgins and McNamara, 2021: 7), while the promotional process to achieve tenure (with its shifting goalposts and its large committees) can contribute to the humiliation and demoralization of those who are not promoted (Hodgins and McNamara, 2021: 8), and the intensification of work can push academics to “breaking point” (Hodgins and McNamara, 2021: 11).

Following these definitions, we consider “workplace bullying” in a broad sense, focusing not on the “systematic” nature of the acts experienced as negative, but rather on the feeling of victimization linked with acts conducted in the workplace and that could be referred to as workplace bullying, emotional abuse and/or harassment.

Although social awareness has increased in the past decades, it has been found in a study conducted within a research institute in Germany that “only a minority of incidents of bullying and discrimination are reported to the corresponding points of contact” (Schraudner et al., 2019: 5). It has been “argued that self-reports may underestimate the problem of bullying because admitting being bullied at work is akin to admitting being weak and unable to cope” (O’Moore and Lynch, 2007: 112) i.e., to admitting not being in line with the managerial representation of what a professional person should be. It has also been shown that bullied workers “often blame themselves for being targeted and have trouble creating coherent story lines that persuasively and succinctly convey their situation” (Tracy et al., 2006: 7), although such a “coherent story line” is needed for the acknowledgment of the bullying experience by others. This is especially the case in the professional context, where the check-lists and procedures drafted by human resources departments set up the standard for the “adequate way” to report one’s experience.

We suggested earlier (Vandevelde-Rougale, 2015, 2016, 2017, 2020; Vandevelde-Rougale and Guerrero Morales, 2019) that managerial discourse can hinder both the self-awareness of being bullied and the expression of ill-being at work. Our study of organizational procedures designed to “deal with incidents of bullying” has shown that they tend to focus on the individual, while the gap between organizational communication and practices related to the management of workplace bullying can contribute to the individual’s confusion and feeling of insecurity. The individuals are thus led to find fault within themselves rather than question the organizational and social systems that enable workplace bullying (Vandevelde-Rougale, 2015, 2016, 2017, 2020; Vandevelde-Rougale and Guerrero Morales, 2019). Others have also stressed that “‘well-being initiatives’ offered to combat stress just facilitate the internalization of the narrative of individual responsibility and even failure to perform” (Hodgins and McNamara, 2021: 17), while organizational process and policies, that fail to acknowledge that the perceptions of events can vary from one person to another, can contribute to the problem (McKay and Fratzl, 2011).

Despite this focus on the individual, social categories intersecting with organizational and socioeconomic factors seem to play a part both in bullying experiences and in acknowledging them. Research has indeed shown that some groups of employees, such as women (Salin, 2018), persons with precarious employment such as untenured academics (McKay et al., 2008), young working parents (Kelan, 2014), ethnic or sexual minorities (Hoel et al., 2018), persons with disabilities or chronic illnesses (Lewis et al., 2018), are more vulnerable to workplace violence, while gender can also influence ways of coping (Jóhannsdóttir and Ólafsson, 2004). As stressed by Hutchinson et al. (2010: 25) when researching bullying in nursing, power is a key dimension to understand this phenomenon – not only power considered in relation between two or more individuals, but also “less readily observable forms of power that manifest within institutions.” We explore this phenomenon further, in academia.

Methodology

Critical discourse analysis of organizational charters on the prevention of bullying showed that the focus of managerial discourse on individuals and interpersonal relations, when looking at allegations of bullying, tends to hide or neutralize power dimensions (Vandevelde-Rougale, 2016). We adopt a qualitative approach in order to look behind this discursive veil and provide some insights on the influence of intersecting social dimensions.

A Multiple Case Study

Although “bullying is often presented as a gender-neutral phenomenon” (Escartín et al., 2011: 162), gender differences in what forms of behavior are perceived as threatening or undermining have been documented (Escartín et al., 2011; Rosander et al., 2020), as well as “different thresholds for men and women for when acknowledging to oneself that a negative treatment actually is bullying”

(Rosander et al., 2020: 8). It has also been shown that cultural dimensions may affect both “the preferred forms of bullying” and “how targets make sense of different negative social acts” (Salin, 2021). We therefore decided on a multiple case study (Yin, 2014) based on narratives from women about self-ascribed bullying experiences in academia, and we chose to consider experiences in different countries, namely Ireland and Chile, where we conducted fieldwork on workplace bullying. We also take into consideration the situation of academia in France, based on our observations as well as those from other researchers.⁷ This approach enables us to analyze the data within each situation as well as across different situations, based on the assumption that thinking about and from particularities can help develop “an argumentation of a more general scope, and whose conclusions can be used again” (Passeron and Revel, 2005: 9, translated by Lacour and Campos, 2005).

We focus on six cases from a corpus constituted by in-depth interviews with female professionals in higher education institutions that we conducted in Ireland (Vandeveldde-Rougale) between 2011 and 2013, in the framework of a Ph.D. research in sociology and anthropology considering the verbalization of emotions related to workplace bullying, and in Chile (Guerrero Morales) since 2012, as part of two action-research projects (2012–2016 and 2019–2022) with professionals confronted with workplace bullying. All participants were consenting adults. The participation was voluntary, with no incentives given for participation. These research projects were exempt from prior approval by an ethics committee, in accordance with the rules for non-biomedical research in our countries and institutions. Trust is essential for empirical research in human and social sciences, between researchers and participants in their research, but also between researchers (Chaumont, 2019: 219); “our responsibility lies in the other and is justified by the other” (Maritza, 2016: 20). Informed consent to research and publication was obtained from the participants, including consent for recording their voices during the interviews. Opportunity was provided to the participants to ask question and receive answer prior to the interviews, during and after the interviews, as well as to withdraw from the research even after their participation had begun (it can be noted that none of our participants withdrew). Provisions were taken to ensure the confidentiality of participants’ data by the anonymization of the transcripts and of the results, so that neither the interviewees nor their working organizations are identifiable. All names of participants and organizations mentioned in our work are pseudonyms and no personal information that could lead to the recognition of the individuals or their specific living and working places have been disclosed. The interviews were conducted in English in Ireland and in Spanish in Chile. For easier understanding here, we translated the verbatims from Spanish to English. The in-depth comprehensive interviews (from 65 to 85 minutes for

⁷For instance, on <https://academia.hypotheses.org> and <https://universiteouverte.org>. These websites share information and tools on the situation (recruitment, evaluation, working conditions, governance...) and mobilization in academia in France (and also include some information on the situation in other countries).

those conducted in Chile, from 105 to 200 minutes for those conducted in Ireland) were loosely structured and provided a space where the participants could narrate their experiences without interruption or judgment. Some of the people we interviewed were still working in the context of abuse at the time, while the context had changed for others (either thanks to change in the organizations or because they departed from them).

Our first observations aligned those made by Tracy et al. (2006: 31) regarding the similarities among workers' emotional experiences from various employment sectors, ages and status when confronted with bullying, suggesting "that the emotional experience of workplace bullying can be similar across workgroups, age, and sex." We decided to re-enter our data, not to question the similarity or differences in emotional experiences, but to question what these emotional experiences can reveal about underlying social categories and their influences. The six cases presented here have been selected for their focus on bullying in academia. Indeed, our original research projects were not focusing on workplace bullying solely in research organizations and higher education institutions, but included interviews with workers in other types of organizations (school, bank and hospital for instance).

From the Irish corpus, we consider three narratives of bullying experiences recorded in the early 2010s: Tara's, Eryn's and Betty's. At the time of the interview, Tara was a single white female academic from British origin in her early 50s. Eryn was a married white female academic from Irish background in her 30s. Betty was a married white woman from Irish background in her 50s; she was support staff within a higher education institution, mother of a university student and sole provider for the family. Tara kept her job in her department after the bullying ended; both Eryn and Betty left their organizations.

From the Chilean corpus, we also focus on three cases of bullying: Matilde's, Ana's and Amanda's. Matilde (interviewed in the mid 2010s) and Amanda (interviewed a few years later) were both Latino women academics in their 30s at the time of the interview; they came from upper-middle class families, were married with young children. Matilde had dark hair (so-called "morena"), a trait that is culturally associated with the representation of a "sexy" woman in Chile. Both Matilde and Amanda had studied in prestigious universities and first worked with working-class private universities promoting excellence, that they left when confronted with bullying. Ana was a 28-year-old Latino woman when interviewed in the mid 2010s; she came from a working-class family, lived with her boyfriend at her mother's house, and didn't want to have children. Ana had studied at a prestigious private university for the working-class, and held two part-time jobs, one as a teacher in a non-selective working-class university (where she didn't earn enough to live) and the other as a research-assistant in a prestigious selective university, in order to earn additional resources.

An Approach Combining Intersectionality and Clinical Sociology

Bullying experiences in research and higher education institutions can be defined as follows from this excerpt from the "Dignity and respect policy" of an Irish

University (2017), based on the definition of workplace bullying by the Irish Health and Safety Authority adopted in 2007:

repeated inappropriate behaviour, direct or indirect, whether verbal, physical or otherwise, conducted by one or more persons against another or others, at the place of work/study and/or in the course of employment/study which could reasonably be regarded as undermining the individual's right to dignity at the place of work/study.

While organizational procedures addressing workplace bullying focus on the individual experience of the person who feels that s/he is being bullied and tend to consider it on an individual and on an interpersonal level (with the planning of “mediations” between the parties involved), we pay special attention to what the narratives reveal regarding demographic and social characteristics and functional dimensions, such as status. We combine an intersectional and a socio-clinical approach in order to conduct a thematic analysis of the narratives based on “power vectors” and “power domains” (Bilge, 2015).

Intersectionality implies that inequalities result from a complex architecture and that they must be analyzed together because they are inseparable and irreducible (Collins, 2009). This concept incites us to explore the power structures and organizations based on the analysis of “power vectors” (Bilge, 2015). Power vectors are markers of difference and of identity categories, and the most important ones are gender, class, nation and race (Bilge, 2015). Intersectionality also implies linking power vectors with “power domains” (structural, representational, disciplinary, interpersonal and embodied aspects) (Bilge, 2015). Bilge's definition gives ground to cross the analysis of power vectors with the analysis of power domains. The latter are also present in the critical study of management systems in organizations by clinical sociology.

Clinical sociology links psychoanalytic perspectives with social ones, and builds on the comprehensive and critical paradigms. It acknowledges the role of subjectivity in producing knowledge and the role of the unconscious in social life. The unconscious designates phenomena that aren't necessarily unknown or unspeakable but that act with “an uncontrollable strength and intensity” (Enriquez, 2009: 27 – our translation). In particular, seven “instances” (or levels) of analysis have been identified by Enriquez to study the linkage between the “psychic reality” of organizations and their “historical reality”: “mythical, socio-historical, institutional, organizational (or structural), group, individual and instinctual instances,” with the instinctual instance “going through the others” (Enriquez, 2009: 41). Organizations show an explicit will to be driven by life instincts, with their corporate communication stressing values such as positivity, efficacy, dynamism and change (Enriquez, 2009: 139), all key “values” of the neoliberal managerial discourse. But they are also subjected to death instincts fighting otherness, that can be perceived at three levels: intra-subjective (internal other), inter-subjective (against others), and trans-subjective (at the level of the link between the individual and the socio-cultural context, notably behavioral

conventions). Death instincts do not necessarily lead to the end of the organizations; the latter can instead stabilize in a pathological mode, preserving institutionalized power relations (Enriquez, 2009: 141–142).

While today's organizations insist on core values driving their "culture" such as "excellence," "integrity," "engagement," "diversity" – thus exemplifying their focus on "life instincts" (Enriquez, 2009) –, the fact that bullying experiences take place amidst them, sometimes despite clear prevention procedures (when specific legislation exists and where written policies to promote dignity and respect in the workplace have been adopted), illustrates the combination of these three levels of death instincts: intra-subjective (when the person targeted by the inappropriate behavior blames him/herself for what's happening), inter-subjective (when one or more persons repeatedly behave inappropriately against another or others), and trans-subjective – for instance, when inappropriate behaviors are tolerated by the organization so that they can be repeated, and when the people targeted by bullying behaviors no longer know how they should behave, both in general terms and so that their suffering could be heard by human resources departments and steps taken to stop the causes.

Considering both the difficulty of persons who experienced bullying to tell their stories in "neatly emplott[ed] narratives" (Tracy et al., 2006: 10) and the euphemizing of power relations by managerial discourse, we paid special attention both to the categories or discriminatory factors mentioned by the interviewees and to the metaphors and images used in their narratives. Indeed, as stressed by Tracy et al. (2006) quoting Robert Marshak:

metaphors provide people with a way to "express aspects both of themselves and of situations about which they may not be consciously aware, nor be able to express analytically and/or literally." (Marshak, 1996: 156)

Findings

Like other researchers before us, we noted that "decades [or in the cases we studied, years] after experiencing abuse at work, people still vividly recall the painful, oftentimes shattering and life-changing, experience" (Tracy et al., 2006: 8), and also that "the emotional pain reported and metaphorical language used across [our] samples were remarkably similar" (Tracy et al., 2006). The fact that bullying happened in Ireland or in Chile did not seem to play a part in what workplace bullying felt like. Our attention to singularities in this corpus from different countries thus helps highlight the influence of neoliberal managerial discourse within organizations across languages and continents.

The women we interviewed were still trying to make sense of their experiences, even those whose bullying had stopped some years prior to the interviews. From their narratives emerged several markers of difference and of identity categories, linked with various "power domains" (Bilge, 2015), some specific to academia. In Ireland, where the majority of university staff are white Europeans and where white women, with mostly white colleagues, were interviewed by a white female

European (French) researcher, race and nation didn't appear as important "power vectors" (Bilge, 2015). The same mostly goes for our data in Chile, where Latino Chilean women were interviewed by a Latino Chilean female researcher in Chile about their experiences with Latino colleagues. One characteristic only can be related to race as a power vector, intertwined with gender: women with dark hair (so-called "morenas") are perceived as "sexy" in Chile and this can trigger sexual harassment. But other markers of difference and of identity categories emerged from our corpus as significant in shaping power relations, namely: class, age, gender, structure, and embodied aspects.

Class

Class and the Use of Language. Class-related issues can appear in relation with the use of language in the working environment. They are linked with social background, qualification (education, diploma) and accents.

Betty, who was personal assistant to the head of a scientific school within an Irish university but had been moved to the front desk following a restructuration, stressed that she used a "simple language," whereas the administration manager by whom she felt bullied was "qualified" in the area of "writing reports," so that she was afraid of not being able to defend herself properly in the internal investigation launched by the university. On the contrary, Eryn, who was an academic in a medical school and who felt bullied by a colleague and her line manager, perceived language as a resource to regain some control over the situation; she stressed her ability to use an "appropriate language."

Tara, who felt bullied by another academic who had the same professional status and same national origin (British) but had taken up the temporary position of head of school, stressed both a discrimination and a class-struggle linked to language. She recalled that when studying, she had been advised to change her "regional accent" to the "Oxford accent," considered as the "proper" manner to speak in British universities, so that she could be promoted. Tara resisted this advice to take on an accent that she considered to be "very class-ridden," even though she also studied at Oxford University after having first studied at free public schools. She also resisted what she perceived as expected from individuals in order to be successful academics, namely speaking in a "high register," using "pretentious ways of expressing ideas," "being bitchy [...] really nice to [others] in meetings and then get [them] in the back." Confronted with bullying from a colleague who spoke with an "Oxford accent" (associated with prestigious private education), she wondered if her "inverted snobbery," which gave visibility to class-struggle (showing that she managed to "get there" without having "all the advantages"), may not have been a trigger for the violence she experienced. This led her to feel somewhat responsible for what happened to her.

In Chile, where education is segregated by wealth in a three-tiered system according to socioeconomic backgrounds (the more privileged the background, the better the education), Ana, who came from the working-class, also illustrated the importance of speaking habits in discrimination related to class. But unlike Tara, who took pride in her regional background and public education and

manifested her resistance to class contempt, Ana spoke of her humiliation and her resignation:

I realized that [teachers] didn't value me, they corrected my speech.

I'm used to everything costing me [...] since I was a child [...]

I was the best, but I was sure that everything would be difficult, because I lack basic skills. I have had to learn everything, from speaking like the upper class to thinking like the upper class.

Class and the Structural Environment. Class-related issues can be entangled with the structural environment and revealed by subjective experiences of bullying, where the micro-processes of harassment are both triggered by and causing social discrimination.

As shown by the sociologist [Pierre Bourdieu \(1966\)](#) when studying social reproduction, social classes play a part in the education and orientation of children and students, as well as on their employment perspectives. This is notably the case in the Chilean higher education market, where there is a segregation of students in private universities according to classes, with different universities for the working class, the middle class and the most affluent classes ([Guerrero, 2017](#); [Guerrero Morales, Gárate Chateu et al., 2019](#)). Parallel to this system, there are also public universities with high entrance requirements that mix all social classes. They are based on the promise of “equal opportunities” for “excellent” students and academics, but at the cost of excluding those who cannot compete within the excellence framework promoted by the neoliberal culture ([Guerrero, 2017](#); [Guerrero Morales, Gárate Chateu et al., 2019](#)). It can be noted that in general, students who study in these highly selective universities end up teaching and conducting research in their own or similar universities, studying in international universities or in highly prestigious national universities. Therefore, they are not likely to question the neoliberal paradigm that enabled their “success stories” ([Guerrero, 2017](#); [Guerrero Morales, Gárate Chateu et al., 2019](#)), nor the indirect segregation that it entails, which also impacts the possibilities of conducting research. In fact, in Chile, non-selective private and public universities only have scarce resources for research – they are also called “universities to teach” (“Universidades docentes”).

Ana explained that, despite her efforts, she was discriminated against on a class-related basis both during and after her studies in a prestigious selective university. Her teachers didn't support her in her research (not helping her while she worked on her master thesis and taking a year to correct it), nor in finding job opportunities, while they supported other students from more privileged backgrounds. She became afraid of working in prestigious universities where she felt that “the rich [were] aggressive.” She took refuge in a working-class university, where she was working part-time as a teacher and where, despite her master's degree, she was paid like a teacher without higher education and lacked resources to conduct research. In order to survive financially, she also took on a part-time job as a research assistant in a highly selective university, where she remained subjected to class-related strain.

Amanda and Matilde, both with privileged background, experienced an inverted class-related discrimination. They both studied at prestigious public selective universities and received higher education, where they were recognized for their abilities and performance. After these studies, they were offered jobs at private universities for the working-class. They gladly took up these positions, because of their political commitment to the underprivileged classes in Chile. But they were led to feel that “it [was] not their place.” They were bullied by men and women from lower social classes and without similar studies, who did not accept that a place should be given in “their” universities to women from high social classes and with high capacities, and who disparaged their studies and class-affiliation and prevented them from working serenely. Amanda and Matilde both expressed emotions of injustice and powerlessness, as well as anger and a feeling of being unprotected. They finally left these working-class universities to follow the more traditional path for graduates who studied in high-selective universities, namely to teach in their own or similar universities or international universities.

Ana, Matilde and Amanda showed the difficulty of changing educational paths and breaking free from the larger system of class-related segregation in Chilean universities. In Chile today, and despite progressive political discourse calling for more diversity, academics must continue to teach their own social classes.

Class and Metaphors. Class-related issues also emerge in the metaphors used by the persons who feel bullied. As already pointed out, “abused workers feel like slaves and animals, prisoners, children [...]” (Tracy et al., 2006: 20). These metaphors express and may “accentuate feelings of vulnerability and degradation” (Tracy et al., 2006: 21), but they also reveal that these social categories are associated with degradation. Thus, in Ireland, Eryn expressed both her feeling of degradation and the perception of the job of sex-worker at the bottom of the class hierarchy of workers, when she said:

ok, if I can't work here [in her teaching and research unit] because of this colleague and if I can't be a manager [in the school], the only thing that's left is being a prostitute.

The class-related metaphor can also give insights into the process of bullying and resistance to bullying. Tara thus compared the strength of slaves, who “stick up for themselves and fight back,” with her shame that she didn't stand up. She suggested that belonging to the middle class instead of an oppressed class could have contributed to her lack of reaction.

Age

Tara was in her 50s and felt bullied by a colleague that she estimated to be slightly older than her. Betty was about 55 years old and felt bullied by two women somewhat younger; Eryn was in her 30s and didn't give specific information on the age of the colleague and the head of school by whom she felt victimized. The 28-year-old Ana was the youngest member of her department and working with

much older teachers. In their narratives, representations and feelings associated with age emerged: helplessness was associated with childhood, while power – to speak up or to abuse – was associated with adulthood.

Age doesn't appear as a "power vector" (Bilge, 2015) per se, but is linked with statutory and behavioral dimensions, so that it can be considered both a "power vector" and a "power domain" (Bilge, 2015).

Age and Recognition. Age creates differences between people. Tara, who is in her 50s, thus recounted that the change in the age composition of her department contributed to her feeling more isolated. She "fe[lt] protective" of her younger colleagues but tended not to socialize with them. She also felt that in the "transition period" where "the older people had left" the department, the "younger people who were just new and tried to fit in" would not have noticed the bullying she felt exposed to from the new head of school or would not have spoken up on her behalf. On the contrary, she assumed that reaching retirement (i.e., being older than others but also on the path to leave the organization) could give more freedom to speak up.

On the other side of the age and status spectrum, and of the Atlantic, Ana, who was working in a non-selective university as a part-time teacher, was seen as "the baby of the department," despite being almost 30 years old and not in the early stages of her career. She received a very low salary compared to the other teachers, many older professors (some over 65 years old) having well-paid tenured positions with overtime that did not allow them to do research. In addition, they didn't have Ana's skills to do research, since qualitative research was not in favor at the time they were trained, during Pinochet's dictatorship. They were therefore calling on her as an assistant, so that she had to do all the research work. Ana accepted the situation, in order to find a place in that space:

I still like being the "baby" of the department. I like it because I'm taken care of. I get more work because I do everyone's job. The old professors don't know how to do any research. [...] My only problem is that I get paid as a baby.

She preferred this situation to the class-discrimination she felt at the selective university when studying for her master's degree, but expressed the wish that the situation would change after she did a Ph.D. abroad, maybe trusting that a higher degree could compensate her lack of recognition.

Age and Perceived Position of Power. Feeling like children fosters a feeling of helplessness that is revealed in situations of discrimination and bullying. In particular, it makes it harder to face the bully and talk to him/her, as generally advised as a first step to improve the situation and work toward a better working atmosphere; this weakens the individual further (Vandeveldde-Rougale, 2017).

Tara thus stressed that being bullied made her feel like a child, because she felt that she couldn't "act in a grown-up way about it" – i.e., by standing up for herself and being able to ask the bully to stop the inappropriate behavior. Both Betty and

Eryn recalled an incident involving their line manager and a pen, which put them back in the position of being school-children confronted with a scolding teacher. Betty remembered her manager in the administrative department tapping a table with a pen “like a teacher” while talking to her about her body language and her personality, and her being subdued. Eryn recalled a meeting where after her line manager said “put your pen down, you’re not taking notes,” she indeed put her pen down, for two reasons: one resulting from rational thinking (putting her pen down did not affect her aim, namely to be heard so that a colleague would stop having inappropriate behavior toward her), the other associated with fear of the head of school who “ha[d] the power” and could “block her career,” like a teacher who could pass or fail her.

In these examples, the real age of the persons involved wasn’t what mattered, but rather the perceived position of power: Betty was older than her manager, but nevertheless felt like a child. This perception appeared suffused with the power relation linked to the status in the managerial hierarchy, and a higher level in the managerial reporting lines seems to take precedence over the academic ranking. Indeed, Eryn’s manager had a lower academic status (since she didn’t have a Ph.D., while Eryn had one); Tara and the head of school were both senior academics with similar ranking; but both Eryn and Tara felt powerless.

Gender

Gender inequalities in academia, to the detriment of women, are still documented today, reminding us that, as “in most cases, work is organized on the image of an unencumbered worker who is totally dedicated to the work and who has no responsibilities for children and family demands other than earning a living. [...] implicitly a man” (Acker, 2019). Even if the last decades have seen changes in university employment, with an increased gender-parity and a diversity of experiences (Le Feuvre, 2017), women researchers and academics in several countries stress the persistence of gender inequalities, linked to various factors: the indicators chosen to acknowledge research and teaching work and taken into account for promotion (e.g. the focus on bibliometric calculations, while the attention to and accompaniment of students in their research, often taken care of by women or younger teaching staff, aren’t measured) (Devineau et al., 2018); unequal division of labor at home and of tasks related to care at university (Amano-Patiño et al., 2020; Confinée Libérée, 2020; Larochelle et al., 2020); cultural representations (Goerg, 2017). Among such representations are for instance the perception of parenting (Toffoletti and Starr, 2016) and the persistence of a “maternity penalty” (Kelan, 2014). Another one is the perception of intellectual work as more “masculine,” so that some women researchers are thanked for their work in footnotes instead of being properly quoted and referenced – their work then being under the radar of rankings based on bibliometric calculations (Heinich, 2020) – and/or are paradoxically submitted to higher standards (Hengel, 2017). The Covid-19 pandemic rendered some of these trends and their intersection more visible, for instance in slowing down the careers of academic mothers (Amano-Patiño et al., 2020; Confinée Libérée, 2020).

Even if men in academia still have more positions of power than women, and despite the fact that having more power can increase the risk of abusing it, our observations show that both women and men can be bullied, and that bullies can be men as well as women. Our data enables us to explore gender not so much as one of the “barriers that obstruct women’s opportunities for advancement” (Acker, 2019), but more as a dimension increasing vulnerability, where some misbehaviors are built on gendered aspects of the target woman’s life (being a mother, experiencing gendered illnesses) and on sexual drives (including through sexual harassment).

Social Relations of Gender and Gendered Social Representations. Due to the class segregation in Chilean universities, class-differences spurred the bullying that Matilde and Amanda (highly qualified and from upper middle-class) have been subjected to: their managers (male heads of school belonging to the working-class, in working-class universities, and less qualified than they were) devalued their studies and class-affiliation in a reaction to the symbolic violence that they associated with Matilde and Amanda’s presence. But in their cases, reported harassment and discrimination are also clearly gender-based. Matilde and Amanda faced two main forms of discrimination: one was to send them back to “their place” as mothers, the other was sexual harassment. Recalling the occasion where she got funds to conduct a Ph.D. research, and was the only one in her department to get it, Amanda pointed out:

instead of congratulating me, they [colleagues] asked me: “how are you going to do it, with your daughter, if your husband is also studying?” I was angry and sad, a feeling of lack of recognition [...] But I realised that there was envy, that although it seems to be just gender discrimination, it is also a class issue. They can’t stand that I handle the codes, that I come from the best universities, that I have training outside the country, that I am from the privileged social class and that this is recognized. I remind them that they can only apply to this university, that for them this is their place and they must defend it from people like me.

Recounting the situation where she asked for explanations from her manager when he refused her the possibility to teach in her field of specialization after returning from her Ph.D. research in the UK, Matilde explained:

my boss asks me “Why did you do a Ph.D.? In this university you don’t need a doctorate. Look at me, I only have a master’s degree and I’m your boss. [...] Stop studying, stop doing things that take time away from your son.” Then he came over and tried to touch me, before I grabbed his hand and hit him. I felt really powerless, the situation was terrible. At that moment, I knew that I had to give up, because all the bosses were the same.

These examples show that bullying can be prompted by class differences and envy, and can feed of traditional gendered representations: representation of

parenting (Toffoletti and Starr, 2016), where the mother is supposed to take care of her children and give them priority over her career, and “traditional” practice of sexual harassment, where men feel somehow “authorized” to physically touch women.

Gendered Violence and Fantasy Scene. Cases from Ireland show other gender-related violence, drawing on personal experiences and playing on the fantasy scene. After the bullying started in her research unit, Eryn had a miscarriage. When she returned from sick leave, her manager (also a woman) decided to put her in charge of some teachings with a pregnant woman and, somewhat later, she sent her pictures of funny baby faces. In her narrative, Eryn expressed the feeling of having been “tortured.” Furthermore, academics, like other workers, aren’t neutral individuals. Sexuality is usually kept at bay in the workplace, but sexual drives can act on the fantasy scene. Tara’s narrative unveiled the scene of male-bonding and of a disappointed lover who tried to take revenge:

I couldn’t think he was interested in me, I didn’t... think he thought about me at all [...] And suddenly it was like... He tried to make my life misery so every power, position of power, I was removed from [...] He would be horrible to me in front of everybody. [...] So, I felt completely isolated [...] some of the younger men would try to be friendly with him and then they would also attack me.

Tara’s narrative also showed that gender divide can be used as a tool to maintain or gain power: she had the impression that the younger male colleagues in her department sided with the male head of school (who had the same academic grade than she had and was bullying her) and felt more and more isolated. This gender-divide was also palpable in Betty’s experience: she was bullied by two women and felt let down by the head of school (a male senior academic) whom she had been personal assistant to. Betty explained that she appealed to him, but he ignored her, adding to her confusion:

I’ve seen the head of school and I told him “why do you let them do this to me? How can you not know?” And he told me, “I don’t know what you’re talking about.”

Betty’s narrative gives the impression that the male head of school couldn’t be bothered with what happened among the women administrative staff. This lack of acknowledgment, or even contempt, echoes the image of a dominant male with his female harem. It seems at the intersection of gender (male/female) and structural dimensions (head of school/administrative staff).

Structure

The introduction of “academic capitalism” in universities has been accompanied by changes in their structure: “changes to structure have followed changes

in ethos and ideology” (Morrish, 2017: 141). The narratives that we gathered show that several hierarchical systems are competing within academia, and that they can exacerbate tensions and violence at work, including through bullying. This competition between hierarchical systems has been nurtured by the reforms toward a “neoliberal academy,” whereby layers of management are added to existing reporting lines, and administrative tasks are allocated to academic staff, changing the nature of part of their work. In addition, the scarcity of permanent positions raises competition among workers as well as precarity, which can be understood as “growing existential and structural uncertainties” (Ivancheva et al., 2019: 449).

Competing Hierarchical Orders and Feeling of Unfairness. Betty was an administrative staff in a successful scientific school of an Irish university. After some new managerial layers were added to the reporting line, and although she was still officially personal assistant to the head of school, she was moved to the front desk and lost her direct access to her director. She felt bullied by the new head of administration and not supported by the human resources department. A colleague advised her to “go to an academic, get an academic behind [her],” which could be interpreted as a belief in a power of academics over administrative staff.

However, all academics don’t have the same power, and it seems that managing roles – although not related to the core aspects of their work (research and teaching) – can confer powers to some academics over others, which can be resented as unfair. This can disrupt the traditional hierarchy in academia, based on diplomas, years of research and teaching experience, research supervision, peer reviews, etc., both by increasing the administrative workload on some (which leaves less time for researching and teaching) and by giving others some power over fellow researchers, so that they can support or hinder their progress.

Tara, who started working in academia before the managerial turn, pointed out that “academics are very jealous people” and that the “restructuring” and the “new style” of management, which “is more telling people what to do, what [academics] are not used to” complicated matters, with a feeling that some people had been unjustly promoted to positions of power and then abused them. For instance, when her colleague who had the same academic status used his managerial position as head of school to prevent her taking a sabbatical leave, she resented it as an unfair tentative to prevent her doing research.

Envy and Place Struggle. In a context of scarce permanent positions, differences can also lead to feelings of insecurity and jealousy or, more precisely, envy. While jealousy is linked to a feeling of loss of something to someone else, envy is a will to have something that someone else has or to have him/her deprived of it (Vidaillet, 2019). It confronts the envious person to his/her limits, is exacerbated in neoliberal societies promoting competition and excellence, and can lead to violent behaviors (Vidaillet, 2019). Our corpus exemplifies this dynamic.

Being the only one in her section with a Ph.D. in the post-2008 financial crisis in Ireland where rumors had it that “only Ph.D. employees would be kept,” Eryn had been faced by envy from a colleague and their line manager, both of whom probably felt threatened by her diploma. Eryn understood their feeling, but resented it as unfair, because it was not linked to her behavior. She described herself as “easy going”:

I don't see myself as something special because I have a Ph.D., I don't treat people as anything but equals no matter where they are in the spectrum.

She dated the animosity that she suffered from the time she completed her Ph.D., and noted that “things have gotten worse” after she conducted a research job in another department for a year:

Because now, not only do I have the experience of a Ph.D. but I now have had the experience of working as an academic in another department.

She thought that her colleague was angry at the system and felt threatened in her job, so that this colleague tried to put her out to “ensure [her] continuous survival [...] in terms of career.”

Eryn explained that her colleague took it out on her with verbal abuse, while her line manager tried to humiliate her (for instance by putting her in charge of “the sluice” i.e., the room designed for the disposal of human waste products) or to distress her (for instance by sending her pictures of baby faces after her miscarriage). Both of them tried to block her from doing Ph.D. supervision and writing articles at the workplace. This had consequences both on her teaching and research work, but also on her life, which she described as a “misery,” “unbearable,” “horrendous.”

Eryn's bullying experience found some echoes in Matilde's and Amanda's. The three of them had high capacities and managed to obtain funds to conduct their Ph.D. research, which differentiated them further from their colleagues. The latter felt threatened in their positions within the workplace, where there was high competition for jobs; they were also envious of others' achievements.

Class Struggle and Place Struggle. With respect to Matilde, Amanda and Ana, it is important to stress that the bullying targeting them is installed within the segregation of the Chilean higher education system. Ana, with a working-class background not well-received in affluent universities, has been prevented from teaching and researching in more prestigious universities: she did not get any scholarship, her efforts weren't acknowledged. As a result, although she hopes for a different future where she would get a scholarship to conduct a Ph.D. research abroad and would be acknowledged as a full teacher and not only “the baby of the department,” she contributes to her own segregation by teaching at a

non-selective university, that lacks funds both for doing research and for paying her as a full-time teacher.

Amanda's path is different, but it reveals a similar pattern of lack of recognition related to both class struggle and place struggle. Amanda decided to work in an underprivileged sector, but had requirements and expectations based on the standards of the prestigious university where she studied. Her managers, less qualified and from the working-class, didn't have the cultural capital to compete with her and tried to isolate her. She stressed that her line manager "didn't like [her] to shine." She also narrates the example of one of her colleagues, who became her friend and with whom she organized seminars. This female colleague had a working-class background but was more qualified than others (thanks to a scholarship, she had studied at a prestigious university) and shared Amanda's will to promote an educational path outside the class-segregated system. This colleague had a precarious job, not a permanent position, and lost her job, which Amanda feels guilty about: "I had a tenure, but she was weaker. She lost her job." These examples illustrate the vulnerability linked to status within organizations, that is not specific to Chile but can be observed worldwide.⁸

Precarity and Vulnerability. Precarity is increasing in universities and other research organizations, and even more so since the 2008 economic crisis. This precarity can take on various forms⁹: financial, administrative, contractual, affective, but also cognitive precarity, when researchers, submitted to performance reviews, are confronted with a tension between scientific rigor and managerial pressure for productivity.¹⁰

Precarity impacts both permanent and precarious workers in academia, and may lead to increased vulnerability. Thus, Amanda's colleague, who didn't have a tenure, lost her job when Amanda's managers tried to isolate her. Tara, who had a permanent position as an academic, pointed out the lack of suitable positions for her (it can be difficult to move from one university to another due to specialization, lack of opening of positions...), her attachment to a job she liked and in which she felt "useful," but also her "affective precarity" (Ivancheva et al., 2019), which increased the importance of work in her life and, therefore, her feeling of

⁸See for instance the survey conducted on workplace bullying in a mid-sized Canadian university (McKay et al., 2008).

⁹As shown by testimonies of researchers and academics, both women and men, in France in 2020. See for instance: <https://universiteouverte.org/2020/04/24/portraits-de-precaires-entretiens-dessines-avec-cyril-pedrosa/> and <https://universiteouverte.org/2021/04/14/pas-de-postes-on-craque-ou-on-crame/> (retrieved on April 20, 2021).

¹⁰This tension is increasing with the "audit culture" and "performance reviews" in academia (Morrish, 2017). It mirrors the tension experienced by archaeologists recruited outside academia, in preventive archaeology in France, as well as other countries, notably UK, Canada, Australia and Japan (Zorzini, 2015; Vandeveldde-Rougale and Zorzini, 2019).

being trapped when bullied. She explained: “that’s a very important part of my life anyway, because I don’t have, I’m not married, I don’t have children. So, my job is very important.”

Embodied Aspects

Martha Nussbaum points out that:

disgust and primitive shame are deeply rooted in the structure of human life [...] both of these emotions are ways in which we negotiate deep tensions involved in the very fact of being human, with the high aspirations and harsh limits that such a life involves. (Nussbaum, 2006: 70)

She suggests that these emotions “have an intimate connection to social hierarchy and to a public culture that expresses the belief that people are unequal in worth” (Nussbaum, 2006: 340). Following this perspective, and analyzing further the narratives of bullied persons with a focus on shame and disgust, can reveal both the normalcy of what a professional (here in academia) should be, and some categories that remain undervalued despite the insistence on the protection and promotion of diversity in the communication of research and higher education institutions.

Somatization and Vulnerability. When telling about their bullying experiences, victims (or targets) talk about psychological and physical ill-being. Calling in sick is often a step in the process of conscientization of the violence caused by bullying practices, since somatization takes place when one cannot think and act when being confronted with a conflict (Grenier-Pezé, 2001). Individuals facing bullying also express shame and disgust toward physical and emotional expressions of fear and weakness, as well as fear and disgust toward the bullies.

Matilde thus mentioned her disgust at the manager who bullied her; his smell bothered her. When she wrote a letter of resignation after having hold her position at a selective working-class university for 17 years, she felt nauseous, a feeling that she compared to the first months of pregnancy, a time where she felt fragile and in need of protection:

I am a tremendously strong woman. I never suffer so much. But I had been working there for 17 years. My life was there. My commitment to the working-class sectors of my country was there. So, I was leaving a life of political commitment to the institutions. My feeling was the same as the first few months of pregnancy. I was fragile. [I] felt that they had filled me in with rage and grief and that my hormones were working to get it out somehow. And I had to resist, to be there, to look at their faces.

Seeing herself as a “tremendously strong woman,” she also expressed her efforts to resist, “to look at their [the bullies] faces”; in other words, not to lose face.

Bullying experiences confront their victims with their vulnerability: their vulnerability as human beings, but also their vulnerability as “professionals” – where professionalism is a complex notion based on self-recognition and recognition by others as “professional” (Boussard et al., 2010). Indeed, the women we interviewed expressed a fear of no longer being able to be, nor to be seen, as “professional” if they expressed negative emotions in the workplace, especially through physical manifestations: fear of being “too human,” with embodied sensations (“sick to my stomach,” “upset,” “cry,” ...), but also fear of being “less professional” if they were perceived as lacking mental sanity or not being strong. At the same time, as also shown by Tracy et al. (2006), bullying experiences lead the victims to perceive the bullies as “less human” or “abnormal,” as can be seen through some of the metaphors (e.g., “monster,” “demon,” “evil,” “lunatic”) they use.

The fear for one’s mental sanity, and the suspicion or accusation of mental health problem of the bully, can be perceived as two sides of the same coin: the rejection of mental illness and the association of mental illness with an undervalued category in the workplace.¹¹ This makes it difficult for the victims of bullying to ask for help from colleagues or human resources, who tend to direct them to psychological support, thus reinforcing their feeling of inadequacy. As Tara indicated:

you always worry that people then think you’re mad, you know. Like one woman who said to me “well, you should take sick leave”; “but I can’t take sick leave.” It’s like saying, I’m, you know, like I am in a nervous breakdown and I never get into the job.

The same goes for the fear of being “weak,” not being able “to cope,” when faced with a bully perceived as “strong,” whether by him/herself or thanks to the support from the organization (other colleagues, human resources department, which tolerate bullying behaviors), thus creating power imbalance. Feeling and showing weakness is perceived both as shameful, an attack on one’s identity, and as increasing the risk of vulnerability in the workplace. “They smell blood and then maybe it would be worse, because he would know that you are weak,” explained Tara...

Role Expectations and Corporal Involvement. Narratives on bullying experiences can reveal representations framing role expectations at work (e.g., keeping negative emotions inside, having a healthy mind and body), but also their intersection with other dimensions that can impact the bullying process. For instance, when Betty explained her nervous breakdown, she stressed the gap between this

¹¹This is not specific to research and higher education institutions; we also observed this phenomenon in other organizations. We suggest that the fear for one’s sanity is linked to the confusion created by the bullying process, while the accusation or suspicion of mental problems of the bully are linked to the difficulty to understand his/her behavior from a rational point of view.

state and her “normal self,” its undermining effect, but also the fact that for economic reasons, she couldn’t quit her job, so that she had to do with the shame of facing people who had seen her in an “inappropriate” state:

Like Monday I really went into panic. I was crying out loud, which is... I don’t allow things like that. [...] I dread going back on Monday and to face people who have seen me in such a state. [...] I’m the main income, I’m the main provider, I can’t afford to lose my job. I would love to walk out of it.

Eryn showed that a different combination of factors can lead to a different approach. Unlike Betty, she had a working husband and she believed that she could easily find another job in her sector (medical sector), although a different type of job. She also mentioned jokingly that as a last resort, she could become a prostitute. Eryn stressed her grounded involvement in research, but the violence she had been confronted with at work and the vulnerability she experienced both physically (miscarriage) and psychologically (fear, state of shock, inability to cope) finally led her to decide that “[her] health is more important than a career,” so that she left the field of research.

Matilde shared the same concern for her health. She explained that she was no longer ready to sacrifice her health to her political commitment, previously entangled with her academic career (until she left the working-class university after having been bullied). She pointed out that in her new position at a selective university, she wouldn’t commit herself as much as before, and expressly pointed out the embodied dimension of commitment:

the truth is that I don’t give my body, I don’t work overtime, I don’t ‘get hooked’ on anything, I don’t ‘put the shirt’ from my work [i.e., I don’t engage in my work]. I don’t plan to give more than what is necessary, nor hours of sleep. At any moment you are no longer useful. And that hurts, in the stomach, in the head, you get depressed. Less political commitment, less corporal commitment.

This verbatim also recalls the metaphor of the prostitute (with expressions such as “give my body,” “get hooked” and the feeling of having been used and “no longer being useful”), mentioned by Eryn as a last resort. It shows both the corporal involvement in work, and the feelings that victims of bullying have of being pushed toward the margins of society (considering the persistent stigmatization attached to professional sex workers in today’s societies and the social recognition attached to “being useful”).

Conclusion

The intersectional and clinical approach adopted in this paper to question narratives of bullying experiences in academia shows that being confronted with bullying exposes one’s vulnerability as a complex being: a biological and psychological

being (with body and mind), a social being (in relation with others, with economic constraints and resources, entangled in social structures – such as the present class segregation in the Chilean educational system...), a worker (teacher, researcher, support staff...) etc. These findings also shed additional light on the denial that sustains research and higher education institutions – namely the conception of university as “the depository of universal values in the name of which its anchoring in social reality is of the order of the vulgar, the unthinkable and, consequently, the unthought” (Cardi et al., 2005: 61 – our translation). A denial linked to the “neutral masculine” historical coloration of university (Cardi et al., 2005), now sustained by the managerial discourse of the neoliberal academy, and that the attention to social dimensions helps question.

Modern managerial discourse, that is centered on “excellence” and on the “just” relation to oneself and the other, and that diffuses in organizations and society through personal and professional development training, self-help books, coaching, the medias..., draws from and contributes to the development of a psychological culture, that hides the importance of social dimensions (Gordo and De Vos, 2010). This participates in making the individual subject “taking ownership” and “responsibility” for the difficulties s/he encounters, be they linked to bullying behaviors or other types of violence, such as systemic lack of time and funds preventing a researcher to conduct research in line with the ethics of his/her field, or institutional segregation linked to socioeconomic backgrounds for instance. Indeed:

Due to a lack of references to think what comes from the social area, [the subject] repatriates the causality as intrapsychic. She [or he] thinks her [or his] suffering in terms of personal responsibility. (Pezé, 2003: 160 – our translation)

Place struggle (Aubert and Gaulejac, 1991) covers up class-struggle and gender discriminations, while those can be exacerbated by neoliberal managerial values and organization of work, as has been exemplified here by cases from Ireland and Chile. We focused in this paper on experiences from women, but this dynamic also concerns men, as illustrated by a recent testimony of a male archaeologist in France who explained the tension between the quality of work he would like to achieve, the lack of paid time allocated to do so, and his fear to go back to being long-term unemployed. This tension led to his personal involvement in his work during his free time, finally leading to his burning-out.¹²

By concealing power relations rooting on different social categories and emphasizing the individual feeling that one would be “faulty,” individually responsible for being targeted by bullying behaviors, managerial discourse encourages the social representation of a “neutral” individual at work, who would be free from the markers of difference and identity categories that contribute to power play in organizations and societies. The cases presented here give a different picture:

¹²<https://archoenlutte.tumblr.com/post/634485435546140672/ce-métier-ma-littéalement-consumé-alors-que-jen> (retrieved on November 11, 2020).

narratives of bullying experiences can help unveil dimensions that are usually hidden when individuals are led to view their experiences of bullying through the managerial lens, and show their intersection. They also show that experiencing bullying can lead one to feel associated with undervalued social categories (sick, disabled, unemployed, prostitute), or to fear joining them, thus contributing to the suffering caused by bullying.

While neoliberal notions frame organizational and social life “not as collective, but as the interaction of individual social entrepreneurs” (Bilge, 2013: 407), thus “den[ying] preconditions leading to structural inequalities” (Bilge, 2013), the attention to “power vectors” and “power domains” (Bilge, 2015) and their intersection proves a useful tool to question narratives of bullying experiences and go beyond the “institutionalized” conception of workplace bullying (Liefvooghe and Mackenzie Davey, 2010). It shows the importance that demographic and social characteristics and functional dimensions such as status can have in workplace bullying, confirming the interest to look beyond individual characteristics and interpersonal relations (as managerial discourse would have it) in order to understand “inappropriate manifestations of power within institutions” (Hutchinson et al., 2010: 25).

Increased attention has been given to gender social relationships in academia in recent years (Amano-Patiño et al., 2020; Confinée Libérée, 2020; Devineau et al., 2018; Goerg, 2017; Heinich, 2020; Hengel, 2017; Kelan, 2014; Larochelle et al., 2020; Le Feuvre, 2017; Toffoletti and Starr, 2016...), showing inter alia the “contradictions between the schedule of an ideal researcher and that of a mother” (Marry and Jonas, 2005), the persistence of unequal access to high-ranking functions (Buscatto and Marry, 2009), but also the subjective strain on those who can’t abide with the “care-free masculinized ideals of competitive performance, 24/7 work and geographical mobility” sustained by the “globalized academic market” (Ivancheva et al., 2019: 448). Our findings encourage to look further at gender and other social dimensions as well as their interaction in order to better understand the complexity of power relations in academia.

Discourses and measures tackling one type of discrimination or imbalance of power don’t seem to be sufficient to bring about change, and can even have detrimental effects, as shown by Toffoletti and Starr when considering the “work-life balance discourse” in academia in Australia. They show that it has a “power to pathologize individuals who fail to live up to this ideal” (Toffoletti and Starr, 2016: 501), notably because it ignores the influence of other factors such as employment level, career perspectives, attitude of management etc. Therefore, a first step to foster a safer work culture and atmosphere in research and higher education organizations could be to acknowledge the multiplicity and superposition of categories, in order to help secure a more collective and caring approach. To do so, the path opened by the “ethic of care” (Gilligan, 1982, 2011) seems especially relevant, where the “ethic or care” is:

“an ethic grounded in voice and relationships, in the importance of everyone having a voice, being listened to carefully (in their own right and on their own terms) and heard with respect,” with an “inductive, contextual, psychological” logic. (Gilligan, 2011)

It could help promote equity in a grounded and reflexive approach, thanks to multiple initiatives to induce change.

This could seem to be somewhat mirrored in the “diversity rhetoric,” whereby universities are apparently showing a more complex understanding of the social dimensions infusing the workplace. But caution should be exerted when considering this discourse, by remembering the lessons learnt from studying management discourse in the corporate sector. Indeed, as previously shown by critical studies of management discourse (Boltanski and Chiapello, 1999), a major characteristic of this discourse is that it absorbs social critics and defuses it. Research has shown that the “diversity rhetoric,” which transformed a legal constraint into a managerial category (Bereni, 2009), participates in hiding hierarchies and antagonisms between social groups (Bereni, 2020), by emphasizing individual differences and euphemizing social inequalities. For instance, the valorization of presumably “women characteristics” (cooperation, common good, care) can have an adverse effect on equality, by hiding the fact that access to power is still based on qualities socially viewed as “masculine,” such as ambition or the ability to delegate domestic tasks (Bereni, 2020).

As Hodgins and McNamara (2021) stressed when reflecting on the Irish case:

if universities [both the universities as organizations and academic staff within] remain stuck in the NPM [New Public Management] narrative, they will remain in a narrative that keeps failing academics, their students and society.

They advocate for a “cultural change for the academy,” in order to “recreate an altruistic culture,” away from “businessification” (Hodgins and McNamara, 2021). Our findings suggest we look at solutions beyond the individual level, in order to associate practical measures with the “diversity rhetoric” (Bereni, 2009) and the managerial discursive claims of “good places to work,” so as to help build not only better “subjective working conditions” but also better “objective working conditions” (Heller, 2020). An initiative launched by French and Belgian female archaeologists illustrates the implementation of such an approach: taking into account their experiences and observations on excavation sites as well as various testimonies on discriminations occurring during fieldwork, they drafted a charter to encourage the prevention of discrimination and risks on excavation sites (Vandeveldde, 2020). The first excavation sites were labeled in 2019,¹³ giving some visibility to underlying power relations so as to promote better working conditions.

With its wealth-based discriminatory structure, the Chilean situation also calls for strong political measures to desegregate the educational and the higher education systems. Political protests against neoliberalism in schools and higher education institutions are now gaining momentum, with school teachers and academics joining forces both to think and oppose the “evaluation culture” of the SIMCE

¹³See: <https://archeoethique.wixsite.com/association/charte-chantier-ethique> (retrieved on November 29, 2020).

(Education Quality Measurement System) in Chile.¹⁴ This exemplifies the necessity to act beyond the borders of education levels, of scientific disciplines and of each research and higher education institution in order to foster change. Initiatives to re-politicize issues such as precarity,¹⁵ individualization of performance assessment,¹⁶ and search for knowledge,¹⁷ are emerging locally. Let us hope that the globalization that helped the spread of neoliberal managerial discourse and practices will also contribute to the sharing of local alternatives, and thus help bring about change for less discriminatory and more fulfilling work in research and higher education institutions worldwide.

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Conflicts of Interest

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¹⁴See for instance the video released on April 28, 2021, that denounces “the culture of management and standardized evaluation [that] has built a culture of workplace bullying for teachers, excessive demands and senseless evaluation for students” in Chile: <https://www.youtube.com/watch?v=O7pwBVMqrSg> (retrieved on April 30, 2021).

¹⁵See for instance the “group of precarious workers of research and higher education” launched in 2016 in France: <https://precaireser.fr> (consulted on April 11, 2021).

¹⁶On the acknowledgment of the collaborative dimension of research, see for instance the initiative “Camille Noûs,” launched in March 2020 in France by a group of academics of various fields as a symbolic signature to show the contribution of the scientific community as a whole to individual work of research. See: <https://www.cogitamus.fr/camilleen.html> (consulted on April 11, 2021).

¹⁷See for instance the initiative “Université Buissonnière,” launched by sociolinguists in France, in order to create a space dedicated to the search for knowledge and liberated from the obligation of rentability. See: <https://universitebuissonniere.com/2018/07/> (consulted on April 11, 2021).

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Chapter 10

Perceiving Diversity – An Explorative Approach in a Complex Research Organization

Linda Steuer-Dankert and Carmen Leicht-Scholten

Abstract

Diversity management is seen as a decisive factor for ensuring the development of socially responsible innovations (Beacham and Shambaugh, 2011; Sonntag, 2014; López, 2015; Uebernicket et al., 2015). However, many diversity management approaches fail due to a one-sided consideration of diversity (Thomas and Ely, 2019) and a lacking linkage between the prevailing organizational culture and the perception of diversity in the respective organization. Reflecting the importance of diverse perspectives, research institutions have a special responsibility to actively deal with diversity, as they are publicly funded institutions that drive socially relevant development and educate future generations of developers, leaders and decision-makers. Nevertheless, only a few studies have so far dealt with the influence of the special framework conditions of the science system on diversity management. Focusing on the interdependency of the organizational culture and diversity management especially in a university research environment, this chapter aims in a first step to provide a theoretical perspective on the framework conditions of a complex research organization in Germany in order to understand the system-specific factors influencing diversity management. In a second step, an exploratory cluster analysis is presented, investigating the perception of diversity and possible influencing factors moderating this perception in a scientific organization. Combining both steps, the results show specific mechanisms and structures of the university research environment that have an impact on diversity management and rigidify structural

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barriers preventing an increase of diversity. The quantitative study also points out that the management level takes on a special role model function in the scientific system and thus has an influence on the perception of diversity. Consequently, when developing diversity management approaches in research organizations, it is necessary to consider the top-down direction of action, the special nature of organizational structures in the university research environment as well as the special role of the professorial level as role model for the scientific staff.

Keywords: Diversity management; organizational culture; change management; psychological concepts; perception; leadership styles

1. Introduction

The global society is confronted with different challenges. Examples include so-called megatrends such as Gender Shift, Silver Society, New Work and Neo Ecology (Horx et al., 2021), climate change and the resulting sustainability debate. Looking at the 17 sustainable development goals (SDGs) (United Nations, 2018) adopted in 2015 by all United Nations member states, it becomes clear that the reflection of diverse needs plays an essential role in being able to meet the challenges mentioned. In order to ensure the implementation of diverse perspectives on the creation of solutions, it is necessary to establish diverse working groups at the most varied levels of impact. A prerequisite is therefore diversity management, which on the one hand increases diversity in organizations and on the other hand supports the active implementation of different perspectives in the work process by creating an environment in which diversity is lived and regarded as a valuable component of successful processes.

1.1. So Important and Yet So Ineffective – Why Diversity Management¹ Efforts Fail

Despite the high importance of diversity in for example decision-making and development processes, Thomas and Ely stated in 1996 that diversity management efforts tend to fail (Thomas and Ely, 2019) and renewed this assessment in 2020 when stating that “[t]he problem is that nearly 25 years later, organi[s]ations have largely failed to adopt a learning orientation toward diversity and

¹Diversity management is, compared to the term diversity, not a uniformly defined concept. In the framework of this paper, diversity management is in alignment with the OENORM S 2501: 2008-01-01 2008 understood as a strategically oriented management approach, intending the targeted perception and usage of human diversity as well as relevant organizational environments and/or stakeholders. By creating structural and social conditions that allow all employees to develop and unfold individual capabilities, diversity management aims to motivate employees to increase the individual performance and thus the organizational success (OENORM S 2501:2008-01-01 2008).

are no closer to reaping its benefits” (Thomas and Ely, 2020: n.p.) and affirm: “[...] Increasing the numbers of traditionally underrepresented people in your workforce does not automatically produce benefits” (Thomas and Ely, 2020: n.p.). Along with Thomas and Ely (2019, 2020), also Dobbin and Kalev (2016) as well as Vassilopoulou (2017) conclude that diversity efforts have failed in many cases, even in a member organization of the Diversity Charta in Germany, a corporate initiative that promotes diversity in companies and institutions (Vassilopoulou, 2017). Summarizing the conducted analyzes, the main reasons for this development are seen in diversity management strategies that strive for a simple identity-group representation, neglect intersectionality, assume that “[...] the main virtue identity groups have to offer is a knowledge of their own people” (Thomas and Ely, 2019: n.p.) and “[...] miss [...] out to tackle deeper-level structures of inequality and discrimination” (Vassilopoulou, 2017: 303). Following from these reasons, the high efforts in the context of diversity management also seem to fail due to a lack of analysis of organization-specific conditions and structural barriers. The organization-specific framework conditions include hierarchies and powers of direction, external influencing factors, but also the organizational culture as a common understanding of values and a possible source for discrimination patterns. In conclusion, especially a profound linkage of diversity management with the respective organizational culture seems to prevent a sustainable implementation of diverse perspectives into existing organizational structures (Leicht-Scholten, 2011; Steuer-Dankert, 2020; Thomas and Ely, 2020). This becomes even clearer when regarding Schein’s (1990, 2004) understanding of what can be summarized under the term *organizational culture*.

1.2. The Triangle of Diversity Management, Discrimination and Organizational Culture

Schein describes

[c]ulture [...] as (a) a pattern of basic assumptions, (b) invented, discovered, or developed by a given group, (c) as it learns to cope with its problems of external adaptation and internal integration, (d) that has worked well enough to be considered valid and, therefore (e) is to be taught to new members as the (f) correct way to perceive, think, and feel in relation to those problems. (Schein, 1990: 111)

Following this definition, organizational culture not only influences working routines and processes, but also shapes human interactions, the perception of individuals, and thus has a significant influence on the expression of discriminatory behavior. In accordance with Schein (1990), organizational culture is designed by a (dominant) group, which first results in the fact that it is human-made, but also shows how diversity is reflected and connoted at the respective organization. At the same time, this not only underlines the necessity of linking diversity and

organizational culture, but also points to the dangers of discriminatory structures in the absence of a reflection on diversity.

The connection between organizational culture and diversity becomes even clearer if reflected in a context with social cognitive psychology theorems. Following Fiske (2009), *social cognition* describes a process of mental steps that are conducted when people think about other people. In this context, the human mind is understood as a system that creates an individual's reality (Bandura, 1999, 2001). This reality is influenced by three types of environmental structures summarized under the *Social Cognitive Theory* (Bandura, 1999). The Social Cognitive Theory distinguishes (i) the imposed environment, (ii) the selected environment, and (iii) the constructed environment, and points out that the human environment "[...] is not a monolithic entity" (Bandura, 1999: 6). Considered from another perspective, this means that not only concrete experiences, but also the organizational culture, as a pattern of values and norms, can have an influence on the perception of individuals and, consequently, can have an influence on the individual reality. To cope with this complex reality, people use cognitive categories to understand and comprehend their environment (Rosken, 2016). Described as *prototypes* (Fiske and Taylor, 1991), *stereotypes* (Glick et al., 1988) or *schemata* (Kalin and Hodgins, 1984), these systems aim for a swift classification of the unknown and action strategies that can be derived from it. While *schemata* describe an overarching concept that assigns meanings to associations of attributes resulting from a certain stimulus (Fiske and Taylor, 1991), *prototypes* represent specific cognitive structures expressed in common but also significant categories (Rosken, 2016). *Stereotypes* describe generalized knowledge about a certain group or phenomenon and can thus be a basis for judgment (Rosken, 2016).

In summary, the concepts described serve as instruments to reduce complexity and to process information. As cognitive processes they do not automatically result in discriminatory behavior. However, if the associated stereotypes are not subject to critical self-reflection, the categorization of people based on these cognitive concepts can lead to discriminatory behavior patterns. In this context, a decisive factor is to what extent the individual reflection of stereotypes and prejudices is part of the subjective capacity for reflecting these underlying assumptions, but also of the organizational culture that motivates this self-reflection. In addition to intrapersonal thought processes and reflection structures, interpersonal processes play an important role in the perception of diversity and the existence of discriminatory structures. For this reason, interpersonal processes will also be briefly discussed below.

While cognitive concepts like schemata, stereotypes and prototypes consider the intrapersonal processing of environmental complexity, Tajfel (1974) as well as Tajfel et al. (1981) focus on social psychological factors in intergroup behavior. In this context, *social categorization* is understood as "[...] a process of bringing together social objects or events in groups which are equivalent with regard to an individual's actions, intentions and system of beliefs" (Tajfel, 1981: 254). Comparable to the interpersonal process mentioned above, intrapersonal processes like social categorization describe socially derived value differentials that result from cognitive mechanisms of categorization. But considered from an interpersonal

perspective, social categorization leads to a classification of humans into two groups – the individual's own group (ingroup) and the outgroup (Tajfel, 1981). Study results show that people tend to favor groups to which they feel they belong, even if the characteristics leading to membership can be considered irrelevant and a direct subjective advantage is not apparent (Tajfel et al., 1971). In this context, Van Knippenberg (2000) summarizes that

[i]dentification leads individuals to perceive themselves in terms of the characteristics they share with other members of their ingroups – their shared social identity – rather than in terms of the idiosyncratic characteristics that differentiate them from other individuals – their personal identity [...]. (Van Knippenberg, 2000: 358)

Following this argumentation, belonging to a group automatically results in differentiation from other groups and can therefore be a cause of discrimination. Tajfel et al. (1971) stated

[...] that discriminatory intergroup behaviour cannot be fully understood if it is considered solely in terms of an “objective” conflict of interests or in terms of deep-seated motives that it may serve. (p. 176)

These motives can also be the counterpart of a prevailing organizational culture, which in turn can lead to a demarcation through belonging or not belonging. Summarizing the effects of interpersonal and intrapersonal processes, the necessity arises to develop a diversity management approach which is adjusted to the target organization and takes the prevailing organizational culture into account. This results in the development of organization-specific measures that reflect the prevailing dominant habitus and perception of diversity in the target organization.

1.3. Diversity Management in Research Organizations

Research organizations have a special significance regarding the reflection of discrimination and diversity on different levels. Public educational institutions such as universities represent places of education and further development and therefore require a special confrontation with discriminatory structures and the establishment of an organization-specific diversity management (Steuer-Dankert, 2020). In Germany, financed by the public authorities (Hochschulrektorenkonferenz, n.d.), scientific organizations are specifically obliged to conduct socially responsible research that reflects the needs of a diverse society. This is also proclaimed by central science organizations such as the American National Science Foundation (NSF) or the Deutsche Forschungsgemeinschaft (DFG) (German Research Foundation), which emphasizes the importance of diversity in education and science (National Science Foundation, n.d., 2011, 2019; Deutsche Forschungsgemeinschaft, 2017, 2018a, 2018b, 2020). In doing so, the DFG (2017) states that to ensure long-term engagement with all social areas, an adequate

representation of all these different areas in science is required. Consequently, the need for research groups that are characterized by heterogeneity is seen and promoted (DFG, 2017). This perspective is also expressed by the European Union's (EU) framework Responsible Research and Innovation (RRI) that "[...] anticipates and assesses potential implications and societal expectations with regard to research and innovation, with the aim to foster the design of inclusive and sustainable research and innovation" (European Commission, n.d.).

Against the backdrop of the expressed need for implementing diversity as a topic in science, but also into personnel structures in research organizations, the question arises as to how this claim should be realized and to what extent it has been realized so far. Furthermore, the analysis of diversity management efforts (Section 1.1), but also the analysis of the interdependency of diversity management, discrimination and organizational culture as well as the derived need for making the organizational culture a central part of diversity management strategies (Chapter 1.2) reveal a focus on private sector organizations (Steuer-Dankert and Leicht-Scholten, 2019). To be able to develop measures that are adapted to the framework conditions of organizations in the public educational sector (Steuer et al., 2017a) and the absence of corresponding research and approaches in the appropriate context, this chapter presents an analysis that precisely addresses this research gap.

Considering the mutual dependencies between diversity management, organizational structure and discrimination described above (Section 1.2) as well as the described need for investigating diversity management in public educational institutions (Section 1.3), this paper first discusses the special conditions of university-related research organizations (Section 2), bringing together the system-theoretical approaches of Klaffke (2009), Cox (2001) as well as Aretz and Hansen (2002). In doing so, this article closes a research gap to implement a targeted and sustainable diversity management that considers the organization-external and -internal influencing factors on organizational culture. Based on these insights, we will then present an explorative study applying a quantitative survey in a Cluster of Excellence (CoE), a large research institution in Germany, that relates the perception of diversity to the importance of diversity in the respective research organization (Section 3). In doing so, a blueprint will be presented that aims to help diversity management initiatives to reflect organization-external and -internal influencing factors of public educational organizations in Germany and to reflect the key persons in these systems. Consequently, the presented chapter aims to support the development of sustainable diversity management strategies. In addition, combined with the model of organization-external and -internal framework conditions of the target organization, political, management, but also theoretical implications are derived and discussed (Section 4).

2. Analyzing Diversity in Organizations – A System-Theoretical Approach

Aretz and Hansen (2003a) emphasize that a deep understanding of the factors influencing an organization is needed to develop and implement a targeted

diversity management. In doing so, they refer to a system-theoretical approach that understands organizations as social systems that are characterized by operational openness to the environment. From this openness, the influence of organizational processes and structures can be derived, which in turn can have an influence on management but also on the perception of diversity. Also, Klaffke (2009) makes this connection in stating that organizations must consider the impact of a diversified workforce against the background of the organization-specific strategic objectives, which in turn are subject to organizational influencing factors. This results in the need for organization-specific diversity management strategies that mirror the organization's framework conditions. But how can the influencing factors be captured in a structured way?

2.1. Prevailing System-Theoretic Diversity Models

Different models try to provide a holistic perspective on organizational levels and influencing factors on diversity management in order to ensure a basis for structured analyzes of these levels. Klaffke (2009) suggests a model that implements the reflection of *skills*, *structures* and *strategies*, standing in an equivalent relation to the culture of diversity. In his *3-S-Diversity Model*, the element *skills* represents a diversity-appreciative attitude with a corresponding mindset and supportive measures. Following Schein's (1990) understanding of an organizational culture, the mindset refers to the culture lived in the organization and the associated perception of diversity. This is also accompanied by an assignment of leadership competences, supporting the organization-wide appreciation of individuality. With *structure*, Klaffke (2009) describes the targeted adjustment of instruments and processes. For example, hiring processes and recruitment strategies need to be coordinated to an organization-wide diversity management strategy (Kreitz, 2007) and manifested by defined target values and measurable goals. *Strategy* stands for concepts that reflect the mutual compatibility of the organization's need for diversity and the individual's need to be included in a diverse organization (Klaffke, 2009). With the three dimensions mentioned above, the *3-S-Diversity Model* initially provides a conceptual framework for implementing diversity management in an organization in a strategy-oriented manner, indicating the necessity to reflect different pressure points of an organization while developing and implementing a diversity management strategy.

Aretz and Hansen (2002) propose a comparable approach with their system-theoretical perspective. Their approach first points to the individuality of organizational framework conditions. In contrast to Klaffke (2009), they explicitly differentiate between factors internal to the organization and factors external to the organization. From their perspective, a complex external organizational environment is automatically reflected in organization-internal complexity. This is mirrored in a functional differentiation of subsystems that are derived from the external environment. Consequently, these systems can be distinguished between those which provide intangible resources and those which supply tangible ones. In their model, this results in four types of sub-systems which are further described in the following (Aretz and Hansen, 2002, 2003a) (Fig. 16).

Capital, Work, Know-how	External-instrumental	External-consumeral	Management of Organization
	<ul style="list-style-type: none"> • Adaptation to external environment • Provision of resources 	<ul style="list-style-type: none"> • Usage of system resources for goal attainment • Focus on feasible objectives under the consideration of a complex environment 	
Values, Sense, Vision, Mission	Internal-instrumental	Internal-consumeral	Reception of operating Consortium
	<ul style="list-style-type: none"> • Latent pattern maintenance for creating a resistance of the system against changes 	<ul style="list-style-type: none"> • Integration of internal system components using the system resources to create a stability of the overall system 	

Fig. 16. Entrepreneurial Frame: Sub-systems and Their Functional Tasks (After Aretz and Hansen, 2003a).

Aretz and Hansen (2002, 2003a) distinguish external-instrumental, external-consumeral, internal-instrumental, and internal-consumeral systems. In the context of this differentiation, *external-instrumental* subsystems deal with the provision of resources that enable the establishment of diversity. For example, it requires time and knowledge on the employee level to actively deal with the changes and new requirements which are coupled with a diverse workforce. Concrete approaches could include employee trainings such as anti-bias trainings that enhance knowledge and internal competencies as well as an adapted time budgeting for projects. *External-consumeral* subsystems deal with an active and effective usage of resources to fulfill intended goals and thus focus on the management level. In this context, for example, the top-down representation of corporate values and the active integration into the organizational culture are crucial factors for the implementation of diversity management. Consequently, measures must be linked to corporate strategies and targets since diversity management is mutually influenced by factors like conflicts and challenges in human resource, market access, creativity, costs and problem-solving approaches. The *internal-instrumental subsystems* stand for the linkage of diversity management with the corporate visions and values and, as such, with a clear definition of diversity and diversity management as part of a corporate identity. This is accompanied by enabling teamwork on the employee level in diverse teams through corporate structures that reflect the challenges of such cooperation. *Internal-consumeral subsystems* describe the need for a holistic integration of diversity management into an organization and

the context-sensitive consideration of processes, corporate strategies and organizational structures. Consequently, the internal-consumeral subsystems require diversity management to be an objectively justified strategy at the management level connected with the stakeholders' and shareholders' perspectives (Aretz and Hansen, 2003a).

In contrast to Aretz and Hansen's (2003a) organization-focused approach, Cox (2001) takes a more human-centered perspective for the development and implementation of a diversity management strategy. From his point of view, a successful diversity management and an accompanying change require the involvement of five central elements. In his model, he focuses on *leadership, research and measurement, education, alignment of management and follow-up processes* (Cox, 2001).

Starting with *leadership*, Cox (2001) indicates that the management level is responsible for introducing change by exemplifying corporate values and aims. In doing so, Cox (2001) proclaims a top-down approach when implementing diversity management. With *research and measurement*, Cox (2001) points to the necessity of data collection to capture the quantitative structure of an organization and to analyze if and which diversity is statistically prevailing. Under *alignment of management structures and processes*, concepts of human resource management are summarized (Cox, 2001). In doing so, Cox (2001) points out that those processes must be adapted to the aims of a diversity management strategy in order to achieve sustainable effects. This is comparable to the external-consumeral subsystem of Aretz and Hansen's (2003b) model and what Klaffke (2009) summarizes in his 3-S-Model under *structure*. Follow-up processes aim for a continuous improvement and the evaluation and further development of already implemented measures and strategies (Cox, 2001). In this context, instruments like the Diversity Scorecard or organization-specific key figures are appropriate to evaluate the success of the strategy (Hermann-Pillath, 2009).

The models described are all characterized by a structured and systemic perspective on organizations regarding the integration of diversity management strategies. The difference between the approaches can be seen in the focus on the different layers of an organization that need to be considered and actively involved into the development and implementation of a diversity management strategy. Combining those different perspectives thus results in a complete picture of organizational reality.

Due to the absence of approaches that specifically reflect the framework conditions of publicly funded research institutions, a new perspective on and active implementation of the identified levels is needed. Moreover, in targeting those different layers, it becomes evident that a structured change management process is needed to accompany the development and implementation of diversity management. Consequently, there is a need for a new approach that both combines the different perspectives represented by the three models and understands the change management process as an approach that contributes to successful diversity management (for more information, see Steuer-Dankert, 2020).

Following, a system-theoretic approach is presented summarizing the perspectives of Klaffke (2009), Aretz and Hansen (2003b) as well as Cox (2001) and reflecting the special framework conditions of the German science system.

A so-called CoE is used as an example of a science organization to illustrate the special features of the science system and thus the specific factors influencing diversity management.

2.2. A System-theoretic Diversity Model for an Interdisciplinary Research Organization – The CoE

CoEs are conglomerates of different specialists and researchers from various faculties and research institutions (DFG, 2014). As big research organizations, CoEs are characterized as competitive research and educational institutions (DFG, 2014). Established in the scope of the Excellence Initiative of the German federal and state governments, the German Research Foundation (DFG) and the German Council of Science and Humanities, they represent a core element of the German research landscape (DFG, 2014, 2016). As associated organizations and research networks at German universities, CoEs are characterized by a highly complex structure which results from authorities on the level of the research institution, faculties, but also CoE management. This complexity is also mirrored in the high autonomy of the university chairs and the resulting institution-specific processes (e.g., recruitment processes but also innovation processes and HR management), hierarchy structures as well as organizational culture, subject habitus, values and leadership styles. In this context, the freedom of science and the resulting independence on the institutional level represent a fundamental structural influence on the development and implementation of diversity management strategies in a CoE. This autonomy is also reflected in the fact that employment contracts are usually concluded with the respective superordinate organization, in this case a university or research organization like the Fraunhofer-Gesellschaft. Considering the application processes, job interviews and decisions are decentralized and carried out in the respective research institution (Steuer et al., 2017b; Steuer-Dankert and Leicht-Scholten, 2019).

Analyzing the organizational structure of the target organization, further indicators for a given complexity can be determined. The target organization is structured in so-called research areas. Also called workstreams, employees coming from different research institutions work in sub-projects under a certain research topic. Regarding the authorities, the projects are supervised by a management in the respective research area. This management is subordinate to the CoE management level as well as the workstream lead. Comparable to a matrix-organization, this means that research associates working in those workstreams are subordinate to different authorities, as in addition to the already mentioned hierarchy levels, the professorial level in the respective research institutes is also entitled to issue instructions. This results in the fact that employees are confronted with different management structures and leadership styles, which are then reflected, for example, in decision-making processes within the framework of the interdisciplinary projects.

In conclusion, Clusters of Excellence can be understood as big research projects, giving an organizational frame by having a management board and associated committees such as Industrial and Scientific Advisory Boards (see Fig. 18).

The workstreams are made up of people from different research institutions whose research institutes represent the daily working environment. As a superordinate organization, the CoE therefore defines the framework conditions for cooperation through elements such as project structures, workstream lead and key performance indicators, but the direct authority lies with the management of the research institutes.

Against the background of the development of a diversity management approach, it is particularly important to take into account this clash of different structures and management styles when considering the organizational culture in accordance with Schein (1990). The initial analysis of the framework conditions already shows that, due to the complexity of the CoE structure, different organizational cultures can prevail, which can influence the diversity management strategy of the CoE as an overarching organization. In accordance with this, the challenge is to identify the key determining factors for cultural change in the sense of diversity management. For this reason, it is not only necessary to analyze the conditions in the target organization, but also to analyze the factors influencing the organizational culture in the respective research institutes as they represent the direct working environment.

Due to the resulting complexity that influences the implementation of a diversity management strategy in a CoE, a detailed investigation of external influencing factors in the target organization is necessary to link the strategy to existing structures (Steuer et al., 2017a). Considered from an organization-external perspective, CoE-specific patterns and frameworks can be identified. Embedded into the public educational sector, Clusters of Excellence are influenced by university-specific structures as well as obligations. In Germany, teaching responsibilities and research are obligatory task fields of the research groups that are located at a university and thus the CoEs that consist of members of these research groups. In concrete terms, this means that researchers fulfill educational tasks, train junior managers and fulfill duties for their research assignments. Regarding system-external aspects, scientific cultures, but also labor law frameworks must be considered. The majority of the CoE staff are research associates striving for a doctorate degree and thus hired under the so called *Wissenschaftszeitvertragsgesetz* (*WissZeitVG*), an academic fixed-term employment regulation. The *WissZeitVG* dictates that working in a scientific institution must be considered as an individual scientific qualification phase; therefore, the law modifies the possibility of fixed terms for employment. As a result, research associates can be employed at scientific institutions for a maximum of six years [§ 2 Abs. I *Wissenschaftszeitvertragsgesetz* (*WissZeitVG*)]. This, on the one hand, leads to a workforce fluctuation and, on the other hand, to an allocation of resources. In sum, the influencing factors on scientific organizations show (Fig. 17) that these organizations underly different framework conditions than enterprises in private sector. Fig. 17 illustrates the adaption of Aretz and Hansen's (2003a) model to the specific influencing factors of a public scientific organization in the educational sector (see Fig. 17).

Consequently, it is questionable to what extent established diversity management strategies are applicable for organizations with the described framework

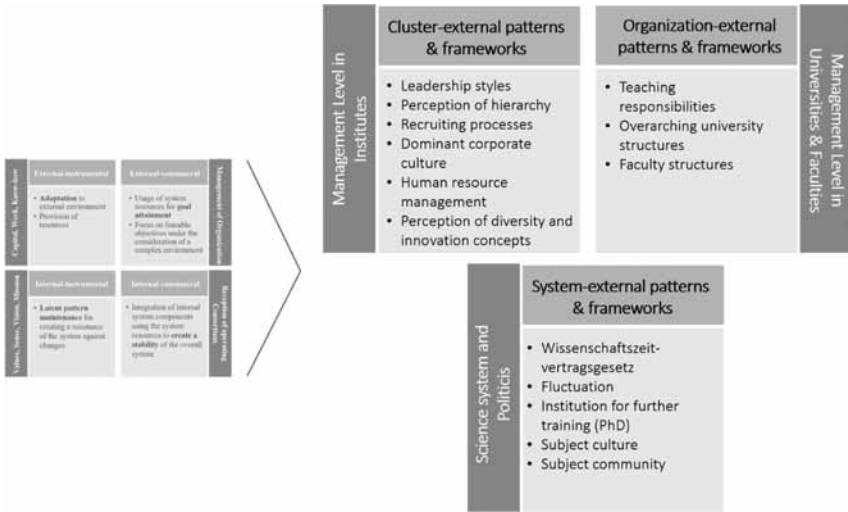


Fig. 17. Influencing Factors on a Research Organization (Steuer et al., 2017a).

conditions. This results in the need for a system-theoretical analysis of such research organizations for being able to identify and develop target-oriented concepts and measures (Steuer-Dankert, 2020).

To realize a first application of the derived model, a study is presented that investigates the management level in institutes and the CoE as an organization from an employee perspective. In doing so, the prevailing mindset on diversity and the primary leaderships styles are investigated and combined in an exploratory analysis to derive the organizational culture of the CoE and measures targeted to the organization and its environment.

3. Perceiving Diversity at a CoE at a Technical University in Germany

Coming from the system-theoretical perspective (Section 2), the analysis of prevailing mindsets and perceptions of diversity seems to be a crucial factor for the development of a diversity management strategy that reflects the organization-specific culture and circumstances and thus strives to have a long-term impact. This is supported by Ellemers and Rink (2016), concluding that the recognition and explicit positive appreciation of diversity in an organization is a key factor for success, as it

[...] is an important source of work motivation and belongingness for minority group members [...]. Thus, it is not the numerical representation of different groups of workers, but the social acceptance of different people with different perspectives that is decisive [...]. (Ellemers and Rink, 2016: 51)

A recent theoretical analysis suggests that the key to benefiting from diversity lies in the team members' diversity mindsets, which in turn must be reflected in a context with the organizational culture (Section 1.2). But what can be understood under the term *diversity mindset*? Following van Knippenberg et al. (2013), diversity mindset refers to employees' mental representation of diversity which is reflected on how they engage and interact with a heterogeneous team. Consequently, believing in a positive value of diversity has a measurable impact on the attitudes toward minorities and (van Dick et al., 2008; van Knippenberg et al., 2007) thus can influence the extent to which the benefits of diversity are harnessed for the organization. This effect, resulting from the diversity mindset can be explained by the related concept of *diversity beliefs*. Van Knippenberg et al. (2007) define diversity beliefs as "[...] a moderator of the relationship between work group diversity and individuals' identification with the work group [...]" (van Knippenberg et al., 2007: 2), which "[...] causally influence discriminatory behavior tendencies" (Kauff and Wagner, 2012: 1). Extrapolated to the social cognitive theories (Chapter 1.2), van Dick et al. (2008) explain this perceptual process of social categorization, according to the *Social Categorization Perspective* (van Knippenberg and Schippers, 2007), as "[...] group members' cognitive differentiation between themselves and other members due to perceived differences on a certain attribute (such as ethnic background, age, gender, functional background, etc.)" (van Dick et al., 2008: 1465), which takes up the interpersonal perspective (see Chapter 1.2). From their point of view, those

[d]iversity beliefs are of particular interest, because they may be associated with positive responses rather than the negative effect of social categorisation processes when workgroup diversity is subjectively salient [...]. (van Dick et al., 2008: 1465)

Considering the impact of organizational framework conditions, the organizational culture seems to have an impact on employees' diversity beliefs, too. In particular, attitudes and values exhibited by the management level seem to lead to imitation of the same behaviors on employee level of all hierarchy levels (Marshall and McLean, 1985).

To develop a concept that reflects the different perspectives on diversity, the diverse needs of employees and thus enables a broad acceptance of diversity management strategies, it is necessary to realize a participative approach that involves all employees of an organization in the development process. In doing so, it is particularly important to examine the variety of mindsets toward diversity on the different employee levels and, in a further step, to reflect on them in the context of the prevailing organizational culture. Based on the assumption that a diversity management strategy is implemented in already existing structures, Aretz and Hansen (2002, 2003a, 2003b) recommend a system-theoretical approach that follows the theory of general systems of action as an analytical framework for gathering a more differentiated perspective on prevailing diversity dimensions (see Chapter 2). Consequently, managing diversity implies a continuous process of reflection, which allows for scrutiny of hegemonic (Bates, 1975; Clayton, 2006)

constructions and aims to counteract the processes that constantly recreate those structures (Aretz and Hansen, 2003a). In this connection, *hegemony* is defined as a social reality that affects how perceptions, thinking and evaluations of individuals are shaped by so-called social collective standards (Aretz and Hansen, 2003a). These standards result from social interaction contexts, which lead to an institutionalization of denotations (e.g., stereotypes) and thus to an action effectiveness in society (Aretz and Hansen, 2003a). Consequently, the subjective and individual perception seems to be more significant than factual existing diversity. This is supported by Sepehri and Wagner (2000) stating that factual existing diversity seems to be not required when implementing a diversity management strategy. As organizations can be considered as micro-societies in which own definitions and reference frameworks as well as norms and values are defined that shape the organizational culture, it requires to question whether and how diversity is socially constructed and defined in the respective target organization (e.g., as a strategic success factor, as part of leadership) (Aretz and Hansen, 2003a) and perceived as a management approach.

Against the background of developing a diversity management approach for a CoE, the perception of diversity and the self-reflection in the social system seem to be crucial factors for successfully implementing diversity management in an organization. Thereby, it can be assumed that there is a range of different perceptions of diversity, depending on the individual experiences and backgrounds of the people working together in an organization. Taking the insights and study results discussed into account, in the following an explorative study is presented investigating prevailing mindsets and attitudes toward diversity in a CoE, a large research organization in Germany. The overarching question of the explorative analysis was how diversity is perceived by the employees in order to be able to derive the diversity mindset, to draw conclusions about the organizational culture and to develop an organization-specific diversity management strategy. This approach is expected to lead to a more targeted management of diversity and to achieve a higher acceptance of corresponding approaches. In the framework of the research concept, the management as well as the employee level are investigated separately. This section presents the results of the quantitative research approach applied on the employee level.

3.1. Data

The study was conducted at a CoE in Germany. Defined as large and competitive research organizations, CoEs are characterized by a strong focus on central scientific issues and a high level of interdisciplinary collaboration (Deutsche Forschungsgemeinschaft, 2019). The object of investigation had its focus on a paradigm shift in production technology and a holistic perspective on production theory (RWTH Aachen University 2011). This was accompanied by a strong engineering orientation of the research organization.

Reflecting on the influencing factors of a research organization described in Chapter 2.1, the organizational structure of the CoE is characterized by an arrangement in a central management board, but with strong decentral structures.

At the time the survey was undertaken, the target organization had 381 members. Fig. 18 illustrates the organizational structure with the hierarchical levels. Four research areas, the so-called Integrative Cluster Domains (ICDs), represent the Aachen House of Integrative Production. A total of three cross-sectional areas affects, with cutting edge topics, all four core research areas and function as inter-sectional research projects.

Five different hierarchical levels can be distinguished as follows in the research object: The (1) research associates, (2) project managers, (3) department managers and senior engineers, (4) CoE management/executive board and (5) professorial level. The first level of hierarchy is represented by the research associates, the target group of the presented study. Focusing on this group, the research associates are characterized by originating from different research institutes working in interdisciplinary groups at a research project that is located at the CoE. Consequently, research associates are assigned to different projects in which they are operationally active.

The employee level of research assistants represents the biggest employee group at the target organization. Analyzing the basic population of the target group, a total of 149 persons were identified. The survey was distributed via e-mail. The response rate was 46.31%. The demographic data of participants are characterized by the demographic situation at the target organization. A share of 8.7% identified themselves as female and 91.3% as male. The average age was 32.6 years (min. of 26, max. of 64 years). Regarding the cultural background, 13.24% stated a non-European non-German-speaking background, 1.47% a European non-German-speaking background and 85.29% a German speaking background. In terms of the specialist background, 52 participants indicated an affiliation with

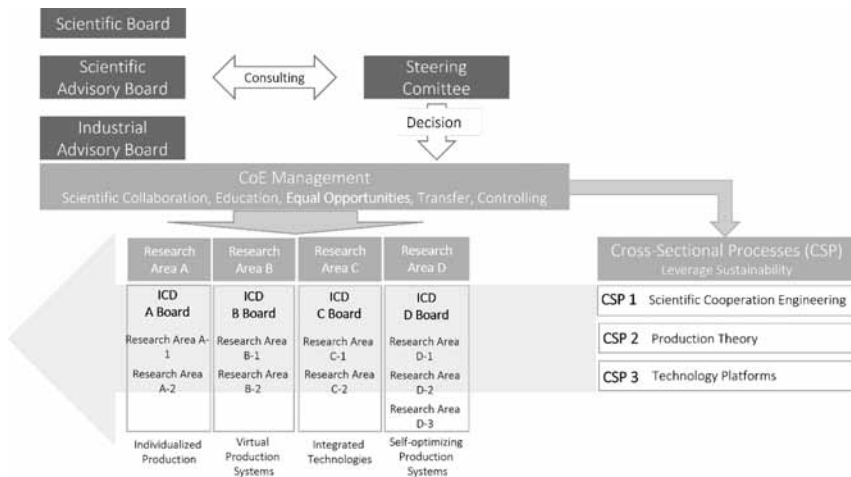


Fig. 18. Organizational Structure of the Second Funding Phase (In Accordance with RWTH Aachen University, 2011; Steuer-Dankert and Leicht-Scholten, 2019).

the engineering sciences, 13 persons with the natural sciences, mathematics and informatics, 3 persons with the humanities, 2 persons with the economic sciences and one person with the social sciences. One person mentioned an affiliation with others, multiple answers were possible. Regarding the educational background, 76.81% of the surveyed completed their studies at the RWTH Aachen University and 23.19% at other universities.

The research organization was characterized by a strong engineering habitus resulting from the focus on engineering issues and a high number of employees located at research institutes that are associated with the engineering faculty (82.4%). Other employees of the organization (17.6%) were located at the faculty for natural sciences and mathematics (11.8%), the faculty for economics (3.4%) and the faculty for linguistic and cultural sciences (1.3%). 1.1% gave no indication about their professional allocation. Considering the demographic composition, 86.4% of all employees classified themselves as male and 13.7% as female (Steuer et al., 2017a). 9.7% indicated a non-German background (Steuer et al., 2017a). In sum, the descriptive analysis of the organization shows an organization characterized by a male-dominated, German engineering habitus (Steuer et al., 2017a).

3.2. Method

In the context of the study presented, a quantitative approach was pursued at the level of the employees. In the absence of comparable studies in the application case of scientific organizations and against the background of the identified special framework conditions of research associations (see Section 2.2), the scales were developed based on the actual analysis of the organization. For investigating human mindsets and attitudes toward diversity, a further basis was formed by Schein's (2004) *Three Levels Conceptualization of Organizational Culture*. The *Three Levels Conceptualization of Organizational Culture* differentiates three inter-related aspects of organizational culture: artifacts, values and assumptions. In this context, *assumptions* stand for unscrutinized beliefs and are taken for granted. In contrast, *values* represent principles, standards and aims shared in the organization, whereas *artifacts* stand for visible and tangible traditions and places (such as "open door" policies, public areas for exchange, etc.) (Schein, 2004). Distinguishing these three elements that form an organizational culture, the survey focused on personal assumptions, mirrored in the evaluation of the effects of diversity categories on working contexts and the investigation of subjective assessments of perceived diversity. In doing so, the categorization and analysis of diversity followed the *4 Layers of Diversity Model* by Gardenswartz and Rowe (1998), dividing diversity categories by how influenceable, manageable and malleable a characteristic is from the company perspective, with the aim to derive appropriate diversity management measures. The focus was placed on diversity categories that are concentrated on by the DFG as a funding institution with corresponding concepts that make the respective diversity categories a subject of discussion. However, to be able to capture a further perspective on diversity, diversity categories based on Gardenswartz and Rowe (1998) were added, which are linked to the reality of the target group's lives. Furthermore, values were investigated in asking participants

for the perceived significance of diversity in the respective organization. The question was deliberately asked about the personal perception of the significance, as it is linked to a needs-oriented diversity management approach.

To reflect the influence of management and leadership on the organizational culture, the survey topics basing on Schein's approach (2004) were extended with elements of the Organisational Culture Assessment Inventory (OCAI) (Cameron and Quinn, 1999). The OCAI questionnaire is a quantitative tool to determine the prevailing but also the desired corporate culture (Wiener, 2018; Cameron and Quinn, 1999). The survey enables the investigation of four culture types in organizations (clan culture, adhocracy culture, hierarchy culture and market culture). Capturing the meaning of organizational structures and leadership, the target group was also investigated regarding the perceived hierarchies, perceived leadership style and innovation management approaches. The leadership styles were investigated after the leadership style classification model by Tannenbaum and Schmidt (1958), distinguishing between consultative, cooperative, authoritarian, participative, patriarchal and democratic leadership styles and thus showing a wide range of different leadership styles prevailing.

Basing on Schein's (2004) *Three Levels Conceptualisation of Organisational Culture* and the *Organisational Culture Assessment Inventory (OCAI)* and following the idea of identifying certain mindset types prevailing in a target organization, a cluster-specific questionnaire was developed, which reflects the scientific focus on the topics of diversity and innovation as no reliable and validate sets could be identified that reflect the specific requirements of the target organization (Steuer-Dankert, 2020). Using a six-tiered Likert scale (1 = completely disagree, 6 = completely agree), employees were asked about their perception and self-evaluation of the topics mentioned above (e.g., "I am of the opinion that in my institute the importance of diversity is too high/sufficient/too low" or "I would describe the leadership style at my institute as consultative/cooperative/authoritarian/participative/patriarchal/democratic"). In asking for the three categories "too high," "sufficient" and "too low," the intention was to ask for the subjective and individual perception of the interviewees regarding diversity. The Likert scale was selected as a suitable instrument for the measurement of attitudes in understanding attitudes as the emotional, mental and action disposition toward an environmental factor (Albers et al., 2009). In doing so, the range of measurement is ordinally scaled, assuming that the target group considers the intervals between the answers as equal (Völkl and Korb, 2017).

Data were analyzed using an SPSS-supported cluster analysis (Two-Step), rank correlation and contingency correlation. Depending on the given scale, rank correlations (ordinal scaled data) and contingency correlations (nominal scaled data) were applied for preliminary identification of highly correlating variables whose influence would affect the significance of the clusters. Consequently, highly correlating variables were expressed with Kendall's tau-b or Cramer's V and less correlating variables with the Two-Step cluster analysis. The cluster analysis aims a division of persons into groups (clusters), which are characterized by similarities in several characteristics (Janssen and Laatz, 2017). As a result, each cluster should be as homogeneous as possible, which implies that the clusters should be

as heterogeneous as possible among each other (Steuer-Dankert, 2020). In the following, the results of the analysis are discussed.

4. Results

Against the background of the large amount of data, individual results are presented below, which give an insight into the reflection and perception of diversity in the context of the research object presented. The main focus is on the results that allow conclusions to be drawn about needs-oriented diversity management. In order to make the traceability of the results more transparent, they are presented in sub-chapters below.

4.1. *The Perception of Diversity and Innovation Management*

To investigate the diversity mindset in the CoE, the subjective importance of diversity was investigated and combined with the perceived importance of innovation management. Since diversity can be considered as an innovation factor (see Chapter 1), the intention of this approach was to experience and combine the perception of the importance of both concepts. Participants were asked whether they regard the status of diversity as well as the perceived significance of innovation management as *too high*, *sufficient* or *too low*. In order to be able to identify differences based on organizational anchoring, questions were asked about the perception of diversity and innovation management in the CoE as well as in the respective research institute as a daily working environment. This yielded further insights into the extent to which the target group differentiates between the two organizations.

Results show that the significance of diversity and innovation management tend to be perceived similarly. Focusing on the significance of diversity, a slight deviation can be seen at the institute level where the significance of diversity seems to be perceived as less important compared to innovation management. A more detailed analysis of the perceived importance of diversity and innovation management based on Kendall's tau-b (Arndt et al., 1999) indicates that CoE members do not differ in their perception on diversity between the respective research institutes and the CoE on an organizational level. This is expressed in a weakly positive, highly significant correlation indicated by a Kendall's tau-b of 0.296 (*sufficient* importance of diversity) and 0.298 (*too low* importance of diversity). Similar results can be determined in the comparison of the perception of the importance of innovation management between CoE and institute, showing weakly positive correlations. For example, innovation management is perceived as *sufficient* in the CoE and in the respective institute (0.191). Regarding a perceived significance as *too high*, a highly significant correlation can be identified (0.460), shown both in the CoE and in the research institutions.

4.2. *The Perception of Diversity Categories*

The survey of perceived diversity aimed at the extent to which individual diversity categories are reflected. Within the framework of the survey, diversity categories

were implemented that are part of the yearly collected DFG questionnaire and supplemented by individual diversity categories from Gardenswartz and Rowe’s *4 Layers of Diversity Model* (see Chapter 2.3). This led to the investigation of the perception of the following categories: (a) age, (b) professional background, (c) gender, (d) professional experience, (e) physical abilities, (f) origin, (g) religion, (h) way of working, (i) first language and (j) culture.

Testing all diversity categories, the analysis shows a strong predictor importance for *origin* (Predictor Importance: 1.00), *mother tongue* (Predictor Importance: 0.72), *religion* (Predictor Importance: 0.67), *culture* (Predictor Importance: 0.52) and *gender* (Predictor Importance: 0.29). Consequently, those categories fulfill the prerequisite for an explorative study and were taken for the Two-Step cluster analysis. Due to the insufficient predictor importance of the other variables, an exploratory investigation of the other variables was not expedient, which considerably limited the investigation of perceived intersectionality.

Further analysis is needed to determine the extent to which the perception of specific diversity categories is related to the perceived importance of diversity. The perceived importance of diversity is considered in the context of the respective research institute as a daily working environment. Combining the diversity categories mentioned above with the item “*perception of the importance of diversity in the frame of the research institute,*” the cluster analysis shows two clusters (silhouette dimension for cohesion and separation: 0.6, cluster quality: good), consisting of 44 persons (see Fig. 19). The clusters can be described as not completely homogeneous, but clearly distinguishable in those who perceive their institute as diverse in terms of the diversity categories mentioned above (59.1%) and those who tend not to perceive diversity (40.9%). Despite the difference in perceiving certain diversity categories, both groups predominantly classify the value of diversity as *sufficient*. Analyzing the demographic data of the participants (e.g., gender, age, origin) in a context with the perception of diversity, also two clusters can be identified (silhouette dimension for cohesion and separation: 0.5, cluster quality: middle). The clusters illustrate that the perception of diversity seems to be independent of age, gender and origin, since all demographic data can be found in both the cluster that perceives diversity and the cluster that does

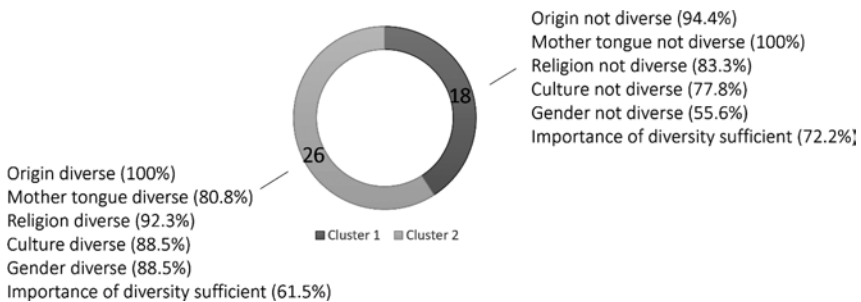


Fig. 19. Clusters Perceived Diversity and Perceived Importance of Diversity (Steuer-Dankert, 2020).

not perceive diversity. As a result, the perception of diversity does not seem to be determined by specific diversity characteristics. Thus, it is ambiguous which factors influence the perception and the subjective importance of diversity.

4.3. The Perception of the Benefits of Diversity

In the context of the previously discussed diversity beliefs and the associated diversity mindset in accordance with van Knippenberg et al. (2013) (see Chapter 3), it is necessary to examine the extent to which individual diversity categories are attributed in the context of project work. Following on from the connection between innovation and diversity examined in Chapter 4.1, this analysis focuses on the explicit connection between individual diversity categories and the perceived advantages and disadvantages of diversity. Both require diversity management, but each requires a different approach depending on its characteristics.

In this analysis, the perception of benefits of diversity was combined with the diversity categories mother tongue, culture and gender as those diversity categories were characterized by a high predictor importance (see Chapter 4.2). The analysis of the influence of the perceived impact of diversity on collaboration discovered five clusters (silhouette dimension for cohesion and separation: 0.7, cluster quality: good) (see Fig. 20). In the first cluster (28.8%, 14 persons), only gender diversity was perceived as beneficial, whereas cluster 2 (10 persons) and 3 (10 persons) reject the benefits of mother tongue diversity but differ in the perceived importance of diversity. In cluster 4, 8 people (17%) indicated that all three diversity categories are beneficial to cooperation but evaluate the importance of diversity as *sufficient*. The fifth cluster (6 persons) is characterized by a general rejection of the benefits of all diversity categories considered, with a simultaneous perception of diversity as *sufficient* (10.6%). While in cluster 4 the importance

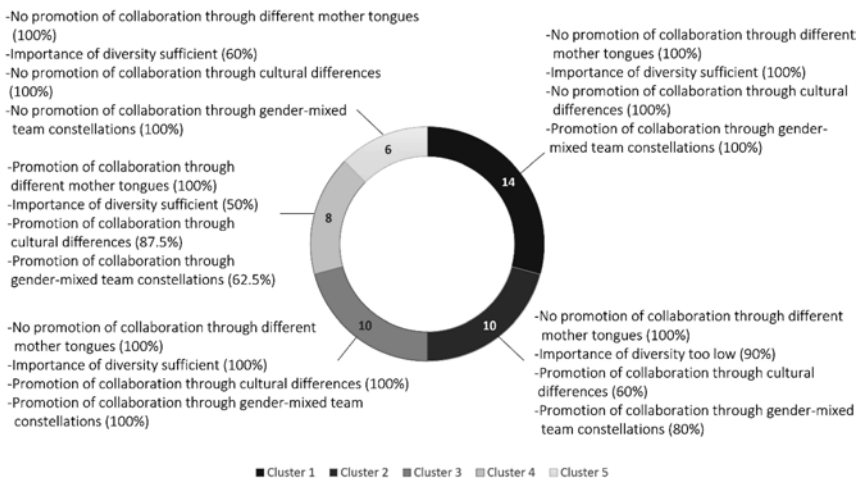


Fig. 20. Cluster Perceived Importance of Diversity and Perceived Benefit of Diversity.

of diversity in the respective research organization is classified as *too low* (21.3%), in cluster 5 it is classified as *sufficient* (21.3%).

In summary, very different perceptions can be identified regarding the benefits of individual diversity categories. Thus, there are also different diversity mindsets and a different appreciation of diversity with regard to this topic area.

4.4. The Perceived Importance of Diversity and the Impact of Leadership Style

Looking at Schein’s (1990) definition of organizational culture in a context with Social Cognitive Theory (Bandura, 1999) and social categorization (Tajfel, 1981) (see Chapter 1.2) allows the conclusion to be drawn that the prevailing leadership style can have an impact on organizational culture and the perception and appreciation of diversity. Therefore, the focus of the next cluster analysis addresses the impact of the leadership level.

Investigating the perception of Tannenbaum and Schmidt’s (1958) differentiation of leadership styles is the starting point for analyzing the impact of the management level on the perception of diversity. In a pre-analysis, the predictive influence was measured to select the perceived leadership styles with the highest significance. The analysis revealed a focus on the authoritarian (predictor importance: 0.93), patriarchal (predictor importance: 0.37), and cooperative leadership (predictor importance: 0.18) style, resulting in negligence of the participatory, democratic and consultative leadership styles which already can be seen as a first result when analyzing organizational culture in a research organization. The connection of the perceived leadership style with the perception of diversity reveals three cluster (silhouette dimension for cohesion and separation: 0.6, cluster quality: good) (see Fig. 21), which are characterized by being not clearly distinguishable. Whereas cluster 1 (42.6%, 20 persons) and 3 (25.5%, 12 persons) are characterized by perceiving a cooperative leadership style, a different perception of the value of diversity as *sufficient* and as *too low* can be identified. Consequently, no conclusions can be drawn from the leadership style on the perceived value of diversity.

To investigate the role model function of the management level, the leadership style prevailing at the institute and the perception of the individual leadership

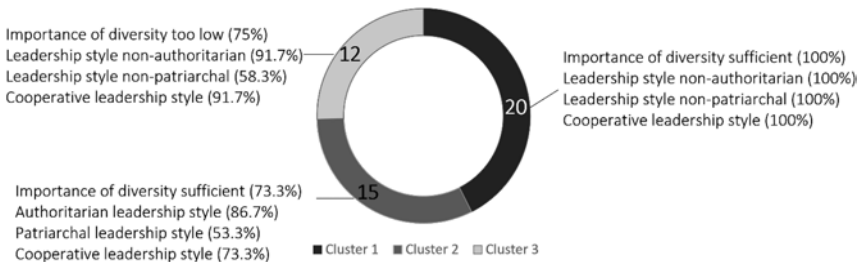


Fig. 21. Clusters Perceived Importance of Diversity and Leadership Style at the Research Institute (Steuer-Dankert, 2020).

style was investigated. The analysis was carried out as a rank correlation (Kendall's tau-b) since the equivalent variables correlate too high and were therefore not suitable for a cluster analysis. The analysis consistently shows medium to strong, positive correlations between the perception of the leadership style exemplified and the individual leadership style (consultative tau = 0.401, $p < 1\%$; cooperative tau = 0.466, $p < 1\%$; authoritarian tau = 0.285, $p < 5\%$; participatory tau = 0.390, $p < 1\%$; patriarchal tau = 0.481, $p < 1\%$; democratic tau = 0.500, $p < 1\%$). Consequently, a similar perception can be observed on employee level with regard to the perceived leadership style practiced by their management level at the respective research institution and the perceived individual leadership style.

5. Discussion and Implications

“[...] [P]ro-diversity beliefs seem to prevent negative effects of subjectively perceived diversity and thus might be able to facilitate positive consequences of diversity” (van Dick et al., 2008: 1483). A supportive organizational culture that has a positive effect on the perception of diversity can make a significant contribution to harnessing the potential of diversity. Following van Dick et al. (2008), the present study aimed at shedding light on the interrelations between organizational cultures in a research organization by investigating the perception of diversity and leadership styles on employee level. Following a system-theoretic approach, the study aimed first to capture the special framework conditions of public teaching and research organizations (Section 2), in this case a CoE at a technical university. Secondly, the status quo of perceptions and, associated therewith, the prevailing organizational culture were investigated on employee level (Section 3). Combining these two steps, the results form the basis for the development of a targeted diversity management strategy, which tackles the needs of the target group and considers the specific framework conditions of the target organization.

In the context of the research programme, a further analysis was conducted on the leadership level, investigating the perception on diversity in a qualitative study, which is not part of the present paper (for further information, see Steuer-Dankert, 2020).

The results of the present studies reveal specific mechanisms and structures that need to be considered when developing a diversity management strategy for a research organization. Resulting from system-specific hierarchies in the scientific sector and a direct dependence on the professorial level within the doctoral process, a direct role model function of the superior, in this case the professorial level, can be determined. Interesting in this context is the identification of the three leadership styles – authoritarian, patriarchal and cooperative – with a main predictor importance which allows conclusions to be drawn about the prevailing organizational cultures in the research institutes. Consequently, a successful implementation of a diversity management approach in a research organization requires, on the one hand, the active involvement of the employee level by investigating the prevailing organizational culture, but on the other hand, the active implementation and engagement on the professorial level right from the beginning. The need for this is also exemplified by the investigation of

the perceived leadership style performed by the management and the individual management style. In the analysis, the similarity indicates the exemplary function of the management and thus supports the top-down approach for diversity management especially in research organizations. The reason for the similarity between the individual and the exemplified leadership style can be explained either by the adaptation of the exemplified leadership style or the preference of the employee to work with a person with similar attitudes. This corresponds to Kanter's (1977) theory of *Homosocial Reproduction* (Gutting, 2015, Volpone, 2013, Kanter, 1977), describing a (mostly male) principle of promotion, and expressing that those male leaders in many organizations promote a relatively homogeneous group that is similar to themselves in norms, values, interests and abilities (Müller and Sander, 2005). This leads to the fact that leadership positions are passed on to people with similar characteristics and therefore potentially similar stereotypes. Thus, the presented analyzes support the need for applying a system-theoretical approach to capture the organization-specific framework conditions.

Due to the identified organizational complexity of CoEs and the external influencing factors on research organizations, a separate analysis of the respective research institute and the CoE as overarching organizations was necessary. The results show that the employee level does not distinguish between both organizations. As a result, it can be concluded that to achieve a sustainable effect, a diversity management strategy must be designed that is applied at both organizations – CoE and respective research institutes – and has a correspondingly broad and stringent application. This relates to the consolidation or alignment of management approaches and thus a focus on the management level as a key position in the implementation of a diversity management approach.

In conclusion, the studies confirmed that top-down implementation strategies are an important aspect when implementing diversity management especially into a research organization. Due to the scientific landscape, the autonomy of science and the resulting autonomous research organizations, a strategy development should start with a participatory process involving all decision-makers that are related to the CoE. Since resistance is to be expected with corresponding restructuring processes and a necessary transparency of internal organizational procedures, it should be considered to what extent incentive systems can enable an opening for this first important step. Thus, diversity management measures should first consider the target group of the management level and sensitize for the necessity of active reflection on diversity management in the target organization. Consequently, regarding the appreciation of diversity, a reflection on leadership and the impact on the organizational culture must take place at the professorial level at the respective research institution. This goes in line with Vedder (2006) stating that a transparent integration of a corresponding project into the organizational structure and the explicit support of the organizational management are important to achieve openness toward the project (Vedder, 2009). In doing so, an active communication of the necessity to establish a diversity management strategy that takes diversity into consideration is required (Schwarz-Wölzl and Maad, 2004).

To address the complexity of the CoE as a research organization, an approach is needed that could be effective at both the management level of the institute and at the central CoE level. A cross-organizational culture should be established with shared values, goals and standards that are stringently lived in all associated research facilities. Thereby, the establishment of a common values system is accompanied by a change, which, according to the change management approach of Kotter (2011), is first triggered by the recognition of a need. Furthermore, it is important to anticipate psychological effects such as reactance that accompany a change and, due to the role model function, to make the management level aware of the individual role and the impact on the employee level.

Considering the special framework conditions of the scientific research landscape, restrictive changes in structures and the removal of structural barriers is necessary. Pushing this change from external, the DFG as a central funding instrument could act as a change enabler, laying the fundament for change and enabling research organizations to change by reorganizing and removing structural barriers.

Regarding the limitations of the study, it must be reiterated that surveys provide a snapshot of a given situation. Consequently, the continuous evolvement of organizations as micro-societies needs to be taken into account, especially against the background of the Wissenschaftszeitvertragsgesetz (WissZeitVG) and an associated employee fluctuation. A further limitation can be seen in the fact that quantitative studies allow the investigation of correlations, but do not reveal causal connections. Hidden motives for the perception of the importance of diversity can therefore only be divined and must be investigated within a qualitative approach. Furthermore, to measure the reliability and validity of the applied research design and especially the quantitative questionnaire, the study could be transferred to other clusters in further research projects.

Furthermore, numerous questions arise for further research approaches within the framework of the overarching research question. Studies on the relationship between the preference for specific leadership styles and the respective professional culture would also be interesting in order to better understand the development of the resulting organizational cultures.

Implementing a sustainable diversity management strategy in a research organization is a continuous process that not only requires the participation of all stakeholders, but also starts at the professorial level, the members of which can make a change by being active role models. Diversity management is no less than a change in culture where each person is highly esteemed and free to develop their talents independent of their individual background, to their benefit and to that of the whole organization.

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Chapter 11

Intersectionalities and Perceived Discrimination in German Research Organizations: A Post-Soviet Migrant Women's Perspective

Irina Valerie Gewinner

Abstract

This chapter deals with the perception of (sensed) discrimination and the coping strategies of Russian-speaking female scholars in Germany and applies an intersectional approach between culture, migration, gender and social background. Based on telephone interviews, the study aims to contribute to the discussion on discrimination in research environments and individuals' professional integration by exploring narratives of migration and work in 13 women who migrated from the former Soviet Union (FSU) to Germany from 1990s to 2010s. Based on the findings, the author derives implications for policy and practice, such as a recommendation to implement introductory conversations with newcomers to reduce culture clash in competitive work contexts.

Keywords: Research organizations; perceived discrimination; intersectionality; gender and migration; post-Soviet migrant women scholars; German academia

Introduction

While the body of knowledge on discrimination and its perception in organizations has been growing over the past few decades (Czarniawska and Sevón, 2008;

Diversity and Discrimination in Research Organizations, 393–417



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Gewinner, 2017; Johansson and Śliwa, 2014; Śliwa and Johansson, 2010; Strauß and Boncori, 2020; Zikic, 2015), there is still a lack of understanding of discriminatory practices and processes in academic institutions. Research organizations are often deemed collaborative contexts where scholars benefit from interdisciplinary expertise. However, the entrepreneurial nature of universities and research institutes creates a natural competition between teams and single scholars, turning each of them into individual entrepreneurs who seek to achieve tenure and public recognition (Ranga and Etzkowitz, 2013; Steinþórsdóttir et al., 2017). This causes imbalances, patterns of protectionism and inequality, thus raising a question of the contextual and cultural factors that condition marginalization, exclusion and the perception of workplace discrimination. A clear dearth of research exists regarding critical reflection of social dynamics beyond the collaboration in research, and implementation of practical tools and measures against discrimination.

Previous research has successfully documented the kind of inequalities women face in academic contexts. Deficits in supervisor support and lack of networks (Zippel, 2020), tensions in reconciliation of work and private life (Gewinner, 2019; Thun, 2020), career stagnation and glass ceiling (Fernando and Prasad, 2019; Moratti, 2020; Skachkova, 2007) are some examples of the obstacles women are exposed to within research organizations with a hitherto male-dominant academic culture. However, the nub of research addresses native-born women, thus causing inequalities and lack of knowledge within the most prominent category of differentiation so far. Information on the interplay of several categories of difference, such as gender, socioeconomic and migration status, and how it is reflected in various academic cultures and adds to the perceptions of discrimination, remains extremely limited. Investigations of intersectionalities in academic organizations are a rare issue, especially in Germany. The social class reproduction in Germany is relatively high and largely contributes to the reproduction of elites, which gives an understanding of why a substantial proportion of professors in German research institutions have an academic parental background. The progress of the knowledge economy and competition for human resources urge diversification of the highly skilled workforce and internationalization of organizations involved in knowledge production.

Drawing upon original interviews with Russian-speaking female scholars in Germany, this study asks, whether and how migrant female scholars perceive discrimination, which factors support or counteract it, how women cope with it, and how this affects their continued participation in the German research sector. Highly skilled women from the FSU represent a particularly interesting case in German research organizations, since they not only outnumber migrant men from the post-Soviet space (*Bundesamt für Migration und Flüchtlinge* (BAMF), 2018), but also constitute a considerable share in highly skilled migration flows (Gewinner and Salvino, 2021; Zaionchkovskaya, 2004). Delving into the explorations of organizational and individual, as well as cultural and contextual factors that result in the perceptions of workplace discrimination, might further conceptualize discrimination in research organizations and design (institutional) policies, and practices of inclusiveness. This, in turn, can largely affect the attractiveness

of the German academic system not only in terms of its further internationalization and social accountability, but also in terms of research excellence, diversity of researchers and reviewers, and research topics.

The German Academic and Cultural Context

Internationalization of German research organizations began as early as the 1990s and consisted of both cross-border education, i.e., mobility of students, scholars, ideas and services, and local internationalization, i.e., cultural opening of campus in terms of projects, activities as well as attitudes and actions of the campus members (Hahn, 2004; Knight, 2006). Under the pressure of realization of competitive advantage, higher education institutions aimed at building an international profile and reputation, which also entailed strategic facilitation of international careers, support of mobility actions, and hiring scholars with international career profiles. Previous studies have demonstrated that mobility and migration go hand in hand especially for scholars and other intellectual workers, which enables highly skilled people to enter Germany with either a scholarship or a work contract (Jöns, 2002; Wolfram, 2017). German universities became extremely attractive particularly for non-German women motivated to advance their careers and further research (Gewinner, 2019), driven by their career capital and passion for work (Zikic, 2015). Yet the proportion of scholars with foreign citizenship within professorial positions hardly exceeds 7% (*Deutscher Akademischer Austauschdienst* (DAAD), 2021; *HSI Monitor*, 2020).

In 2007, Germany launched the so-called Fixed-Term Research Contracts Act (*Wissenschaftszeitvertragsgesetz*), which provides universities and research institutes with certain freedoms regarding fixed-term contracts. Aimed at shortening the qualification phase, i.e., the individual establishment phase in academia, to a maximum of 12 years, this law has had historic consequences in terms of unpredictability and impossibility of long-term job planning, and increased competition between scholars. Today, the German academic system is characterized by a high proportion of academics in temporary positions: only professors have permanent contracts, while 87% of staff below professor level have temporary contracts (*Deutsches Zentrum für Hochschul- und Wissenschaftsforschung* (DZHW), 2020). Time-limited contracts can last from six months to three years, depending on the public or project funding. In international comparison, Germany is much less attractive in terms of contract duration (Kreckel, 2016), and solely quantitative indicators, such as the number of publications, measure the productivity of academics and the amounts of money received for project funding.

Established organizational structures in German research organizations have additional specificities. In contrast to the Anglo-Saxon system that features larger proportions of professors without their own staff, a single professor with a subordinated research staff heads chairs or working teams. The size of the single teams in subordination depends not only on the result of negotiations with the rectorate, but also on the professor's own activity in attracting external funding for projects. In this way, the German academic system resembles a pyramid, in which only 25% of junior scholars subsequently reach professor status (DZHW, 2020).

Moreover, success in a research career often depends on disciplinary cultures, i.e., a certain unwritten system of rules, publications, styles of argumentation, evaluations, etc., which form the cultural habitus and include the scientist in the scientific community of a particular scientific discipline. For instance, in social sciences it is common to publish a paper co-authored by two to three individuals, whereas in natural sciences the number of co-authors might be substantially higher. Similarly, chapters in edited volumes are still a broad practice in the humanities, while it is almost inconceivable in natural sciences.

Such socio-political conditions and institutional structures disadvantage women in German academia for several reasons. Firstly, according to previous studies, both men and women in German research organizations are less likely to become parents if they are only employed on temporary contracts. For example, in 2011, only about 25% of young scientists (PhD students and postdoctoral fellows, aged between 27 and 40) had children at the time of the survey (Möller, 2011). Moreover, German academics tend to postpone or even renounce family formation in an unstable academic working environment, even though they would like to become parents (Gewinner, 2019; Metz-Göckel et al., 2011). Secondly, academia has historically been viewed as a male environment, where the ideal image of a scientist is a man who has devoted his entire life exclusively to science (Gassmann, 2018). This stereotypical image still shapes a conservative disciplinary culture, which is particularly evident in the natural sciences which require controlled laboratory experiments and workplace presence. This view tends to disadvantage women when they are expected to be less flexible or have obligations other than work, such as family. Thirdly, gender norms in German society as a whole can still be characterized as conservative, where women are more frequently expected than men to take over the role of social reproduction, i.e., the responsibility for the household and childcare. This is particularly clear after the birth of the first child, when men continue to be actively employed and women reduce their paid workload for the sake of the family (Gassmann, 2018; Schürmann and Sembritzki, 2017). The proportion of mothers in German academia is therefore low and having a child despite difficult working conditions is potentially linked to the non-academic social background of female scholars and, hence, a traditional high value is placed on having children as a life goal (Gewinner, 2019).

Highly Skilled Post-Soviet Women Migrants in German Academia

Particularly since the beginning of the 1990s, Germany has experienced large immigration flows from the FSU, consisting of not only ethnic Germans, i.e., individuals forcefully resettled to the FSU after WWII and welcomed back to Germany after the fall of the Iron Curtain, but also individuals of Jewish origin. Apart from ethnic migration, educational and labor market migration intensified considerably, attracting (highly) skilled professionals. The latter is especially the case for post-Soviet women who enjoyed a solid education but reached their limits within the labor markets in their countries of origin due to various reasons.

Together with prerequisites for migration embedded into the cultural context, this encouraged them to search for better fortune and opportunities abroad.

The breakdown of the Soviet Union resulted in a collapse of the established social order, which entailed a significant devaluation of intellectual labor and an upgrade of services and trade. Women have long outnumbered men in higher education completion rates (Rosstat, 2021), and those interested in research, but who faced structural inequalities on a day-to-day basis, sought alternatives to continue academic work under different organizational and cultural conditions. Germany has always been deemed an attractive scientific destination in Europe (Shinozaki, 2017) since it offers diverse possibilities for enrollment in master's or doctoral programmes as well as scholarships for both early career and established researchers. Moreover, post-Soviet women academics usually represent a wide range of disciplines, including both science, technology, engineering and mathematics (STEM) and humanities, which makes them competitive within the academic labor market in Germany (Bouffier, 2017; Gewinner, 2019; Wolfram, 2017). Migrant academics are often described as diligent, hardworking, and resilient as compared to their native-born counterparts (Mamiseishvili, 2010), which might apply to post-Soviet women in the German academic system.

Regardless of the relatively strong academic profiles of post-Soviet migrant women in Germany, their career trajectories are tightly intertwined with individual family situations (Antoshchuk and Gewinner, 2020; Shinozaki, 2014). Women are not merely driven by the aspiration for career advancement, but much more by their culturally rooted family values, such as motherhood and harmonic family relationships. Previous research found that highly skilled post-Soviet women placed equal importance on both paid employment and family, which greatly pre-determines the modes of their employment and family choices (Gewinner and Salvino, 2021), and as a consequence, of their life satisfaction.

Current State of Research on Discrimination of (Highly) Skilled Migrants in Academia

Discrimination of migrants seeking to gain access to various institutions of host countries has been well addressed in previous research (Düvel, 2016; Keita and Valette, 2020; Kofman, 2000; Kogan, 2012). While the disadvantage of less skilled individuals can be explained by deficits in human capital, soft skills (flexibility, resilience, communication skills), and lack of information about how things function in a new environment, there is less known about the mechanisms responsible for the discrimination of skilled and in particular highly skilled migrants. Examples not only pertain to hiring practices, but also to daily business in teams or career advancement opportunities. Most explanations, positioned at the micro level of agency, assume that social identity and respective unconscious ascriptions result in a great deal of bias toward those who are likely to be “different” (Dietz et al., 2015). The processes of differentiation and othering often go along the axis of social categorization and incorporate not only explicit categories, such as sex, race or ethnicity, or physical appearance, but also implicit ones, such as abilities, traits of behavior or culturally rooted values and beliefs.

Identification of hidden mechanisms in the creation and persistence of disparities between “appropriate” and “unsuitable” employees becomes increasingly important for smooth work in multicultural teams and organizations. In recent years, there has been a growing understanding of diversity as a driver of creativity, efficiency and productivity of organizations (Héroux and Fortin, 2016; Hubbard, 2004; Patrick and Kumar, 2012), which is crucial for academic institutions that produce knowledge. Previous research has accounted for individual preferences of “gate keepers,” such as managers, as causes of marginalization and discrimination of skilled migrants from decision making processes or leading positions (Goldman et al., 2006; Sturm, 2001).

Deviation from the “norm” turns otherness into an obstacle to career advancement. This is especially true of minorities in academia, such as women and/or migrants. It is even more challenging to obtain a professorship or a permanent position for those who have double or more disadvantageous factors (Crenshaw, 1989), such as migrant women, compared to the dominant group. Despite their hard work, it is difficult to unequivocally determine for what reason their careers develop more slowly than others – because they are women or because they are migrants? Such impediments to professional paths can be multiple, depending on the social characteristics of the individuals. For instance, language has been identified as a career impeding factor (Śliwa and Johansson, 2010; Tietze, 2008) or even physical appearance and self-representation of migrants (Bauder, 2006).

However, career obstacles cannot only be tackled from the perspective of individual positionality. A look at women’s cultural background, their set of values and beliefs sheds light on additional factors that might explain how women perceive and cope with discrimination. For instance, previous research has found that women who deem paid employment and career a crucial part of their life are more likely to persist in their careers or navigate through hindrances to meet occupational goals (Antoshchuk and Gewinner, 2020). In other words, embeddedness (Ryan, 2018) in the workplace, professional integration and strong ties to the academic community might lead to work satisfaction and career progress.

Although intersectionality helps us to understand inequalities and discriminatory practices in German research organizations, it only addresses the individual level of agency, thus merely shedding light on one part of the story. In recent years, scientific enquiry demonstrated evidence of discrimination based on subtle intra-organizational structures and processes. For instance, considering workplace venues as gendered organizations (Acker, 2012) enriches the perspective on gender differences in talent acquisition and career advancement. Since men have historically been the original founders of academic organizations, the prevailing codes of conduct and unwritten rules of work and evaluation favor them in subtle ways (Hearn, 2020; Steinþórsdóttir et al., 2017).

Incorporating the meso, or organizational level into the conceptual framework of discrimination in German academia provides additional insights into practices of othering and perceptions of discrimination. This approach reverberates that of Yuval-Davis (2006) in combining individual agency within organizations with institutional conditions as constitutive macro context. The latter can be best addressed through investigation of academic disciplinary cultures,

as arenas of complex processes of informal exclusions and discrimination. Analytical examinations of disciplinary cultures can facilitate substantial cultural changes in research organizations, making them more open and diverse. Academic cultures show themselves in the complex structure of routines of practices, attitudes, and implicit rules and rituals that create a certain feeling of belonging and inclusion in the community, which are perceived as natural (Damrosch, 2013; Liebau and Huber, 1985; Ylijoki, 2000). Belonging to a disciplinary culture develops through acquisition of the professional cultural habitus and is validated by established scholars. A shared disciplinary culture means belonging to a certain academic community, yet deviations hold potential for discrimination. For instance, Traweek (2009) demonstrated for physics that it understands itself as an open, culture-free discipline, yet successful academic careers in this area are only attributed to men. Disciplinary cultures also differ in their perceptions of gender-related (traditional) division of labor in work and family, which contributes to the hierarchy of successful careers in mathematics and social sciences (Vogel, 2012).

Most studies demonstrate that across academic disciplinary cultures, women experience more difficulties in climbing up the academic ladder (Banchevsky and Park, 2018; Huang et al., 2020; Van den Brink and Benschop, 2012). The crux of the research thus predominantly focuses on gender as a discrimination category from belonging to academic disciplinary cultures, whereas other social categories and their interactions remain less investigated. There has been some evidence for mechanisms of discrimination based on socio-economic background (Möller, 2015) and race/ethnicity in academia (Clancy et al., 2017; Thompson, 2019), yet not much is known about the perceived discrimination of migrants. This is especially true for German research organizations that have only recently committed to becoming more diverse (Auferkorte-Michaelis and Linde, 2016; Klammer and Ganseuer, 2013).

To date, the interaction effect of migration background and gender has been controversial. Several studies showed that the two social characteristics that are deemed “negative” in academic context, mutually eliminated one another, thus bringing migrant women scholars career success, meaning one should be strange or different to succeed (Czarniawska and Sevón, 2008; Sevón and Czarniawska, 2005). In that case, building solely female-based networks might jeopardize the status of those women who achieved the highest positions, which forces them to further play a role of a “maverick.” By contrast, Sang et al. (2013) demonstrated in the UK that a migration background makes individuals outsiders in academia, and being a migrant female scholar not necessarily results in double disadvantage (i.e., negative outcome for a career), but in double marginality (i.e., permanent contact with two cultures). The status of an outsider borders on invisibility (Mählick, 2013), which makes migrant women representatives of “marginalised elites” (Riaño, 2016). This significantly echoes the overall position of post-Soviet migrant women in the German socio-economic structure: while in educational terms many of them are equipped with good qualifications, they are unevenly represented in highly skilled positions within the German labor market (Färber et al., 2008; Gewinner and Salvino, 2021; Kogan, 2012). This raises

the question: how do women migrants perceive discrimination in academia and what are the instances they deal with in German research organizations?

Lastly, the macrostructural dimension is linked to the challenges immigrants experience in terms of mobility policy. In contrast to the inner-EU migrants, post-Soviet immigrants face a number of obstacles to enter Germany, such as issue of entry and residence visa and proof of qualifications (Kogan, 2012), which largely impact on job opportunities in academia. Requirements for migrants to prove evidence of sufficient financial resources and a valid job contract represent further legal conditions which are relatively strict in comparison to other European countries.

Methodology and Sample

The average age of the 13 interviewed women was 37.5 years (see Table 39). For the majority of them (nine), Germany was their first and only destination

Table 39. Socio-Demographic Characteristics of the Respondents.

Category	Sub-category	No. of Cases
Birth cohort	1960	1
	1970	4
	1980	8
Country of origin	Russia	9
	Ukraine	2
	Belarus	1
	Moldova	1
Academic position	PhD student	3
	Postdoc	5
	Researcher	1
	Assistant professor	2
	Full professor	2
Discipline	STEM	7
	Social sciences	5
	Humanities	1
Marital status	Married/in stable partnership	11
	Single	1
	Divorced	1
Children	Yes	5
	No	8

country, others have previously studied and/or worked in other countries prior to moving to Germany. The academic positions of migrant scholars ranged from PhD students to full professors, meaning that only two of them had permanent contracts as full professors. The disciplinary background of migrant scholars was heterogeneous and covered humanities, social sciences, and natural sciences, with one woman currently working within the field of information technologies. Of all the study participants, 11 female scholars were either married or in a stable relationship, two were unmarried or divorced. Eight women were childless, three had one child and two had two children, respectively.

To discern perceived discrimination and strategies to overcome it in German research organizations, this study draws upon telephone interviews with 13 migrant women employed at various German universities and research institutes. All women are Russian-speaking natives and originate from post-Soviet countries, mostly Russia, Ukraine and Belarus. They were identified through onomastic procedure and screening of research institutions nationwide in 2019. The former technique derives the regional origin of a person from their name with a certain degree of probability (Liebau et al., 2018). The most typical female Russian names were used in combination with academic degree to search for potential study participants who were then approached by mail and invited for an interview. Thus, single institutions were not screened to identify migrant Russian-speaking women, but the Slavic names were decisive for building a sample, which was the main prerequisite for the participation in the study. Another criterion was a post-Soviet origin and a possession of an employment contract in the German academic system.

Telephone conversations were conducted in 2019 based on an interview guide that included questions on professional activities and steps in occupational career, migration history, as well as private life and its organization. The average duration of the interviews was 50–70 minutes. Key to the interviews was an attempt to understand women's subjectivities including values and life goals that guide their career pursuits and behavior. For this purpose, interviews started with women's migration history and questioned why they moved to Germany. In the next step, conversations addressed current working conditions, academic work in general, and experiences in German research environments. This served the purpose of understanding women's feeling of belonging, including whether they felt different in terms of being a woman and working as a scholar in German research organizations. To condense the insights, respondents were asked about their return or further migration prospects and intentions. Lastly, attention was given to the private life of migrant female scholars, with topics addressing partnership and household activities, children and relatives, as well as overall life scenarios.

All interviews were recorded and analyzed in MaxQDA¹ according to the ethics guidelines for social sciences, in addition the names of all respondents were

¹MaxQDA is a software programme designed for computer-assisted qualitative and mixed methods data, text and multimedia analysis in academic, scientific, and business institutions.

changed for confidentiality reasons (European Commission, 2018). The themes raised in the interviews were analyzed through a culturally sensitive approach by considering artifacts, values, and beliefs of the respondents, and convey a synergy of meanings and experiences of the respondents within the culture. A thematic coding technique (Flick, 1995) was deployed to identify major topics, find similarities in academics' experiences of discrimination, and make generalist statements on factors that exacerbate or help respondents cope with said discrimination. The coding procedure consisted of three steps. First, individual case analysis took place by taking into account socialization context and pre-migration history of women. This was followed by the second stage, namely case-related investigations of women's experiences, with particular awareness of dimensions contributing to experiences with discrimination. This in-depth analysis implied a search for connections between different interview passages and the meanings, and development of a system of categories for each individual case, which was applied to the subsequent interviews and modified accordingly as required. The third step aimed to identify commonalities and differences between respondents. The final generalizations were thus based on the case comparisons and highlighted commonalities and differences between the cases. The findings reflect the micro, meso and macro levels affecting perceived discrimination, and the interaction of them.

In the analysis, women's age, social background, nationality and disciplinary belonging represent the social characteristics that are important for the determination of positionality. Individual embedding could be grasped through women's values and orientations. To comprehend institutional structures and disciplinary cultures, interviews addressed typicalities in the publishing process, usual steps in the research process, conference behavior, and communication peculiarities.

Findings

Several important dimensions appear crucial for the processes of discrimination in German research organizations. On the one hand, these processes were largely shaped by institutional structures, and on the other hand, they represent women's individual resources and life situations. Together, the interplay of these factors produces a range of possible scenarios and ways of executing and perceiving discriminatory practices that in the worst case can result in a dropout from academia and forced correction of life plans. These factors will be discussed below.

Degree of Internationalization of a Research Institution

In terms of institutional structures and their role in the processes of discrimination, the extent of internationalization of academic organizations turned out to be meaningful for perceptions of discrimination. Large research institutions where migrant women worked, incorporated a variety of technical fields of academic enquiry, such as engineering or natural sciences, and were more likely to establish international co-operation with similar institutions abroad. This not only facilitated a frequent rotation of scholars in research stay schemes, but also hiring

practices of international scholars, which altogether provided a positive image of German research organizations. Female scholars rooted in natural sciences mentioned a friendly welcome culture and campus information was additionally distributed in the English language to increase inclusivity of organizational culture. English was also frequently a working language in large research teams, thus enabling smooth communication between team members.

Ksenia (Full professor): *All my colleagues are German, and this is why we have a typical German work culture. I do not experience any internationalisation. I used to work in very international teams around the world, and I still cannot get used to the German rituals of mistrust towards newcomers and the need to assert oneself in order to be accepted.*

Alina (PhD student): *We have a very nice international team, which makes us normally communicate in English. We work collaboratively, but everyone has one's own agenda as well.*

At the same time, internationalized organizations automatically created spaces for amplified tensions and misunderstandings between single members of work teams. Conflict potential was inevitable especially in cases when different cultural values clashed and, in that way, disclosed very different ethical standards in interpersonal communication and work routine. This was particularly the case for gender-based discrimination, when non-Western scholars refused to work under a woman's supervision and questioned her authority and expertise. One respondent reported multiple cases when men from the Global South refused to work with her and requested her male supervisor instead.

Larissa (Lab director): *As I am responsible for the lab, I am in charge of smooth operational procedures. I arrive early in the morning and check whether everything is clean and ready for the working day, so that staff members can work there. We have a very international team at the institute. Imagine how often I hear the protest from men from the Middle East that they are not going to work under my supervision. They refuse to acknowledge my authority, they even go to my boss and request not to work with me. They do not even understand that they are doing something wrong. Men from China are used to women returning to work after parental leave, so they have a very similar norm of working women as we do.*

Thus, internationalization of research institutions is an ambiguous category that has its shadow effects apart from the positive reputation of creating and sharing knowledge, thus counteracting colonialism. Interview material shows

that affected migrant women overcame certain barriers to manage the discrimination they were exposed to, although this premised a portion of emotional power and resilience.

Disciplinary Culture

Another important differentiation category is academic disciplinary culture. Analysis of interviews disclosed that the openness or closedness of cultures made scholars with a given set of features feel that they belonged to them or not. Contrary to technical fields of scientific enquiry permeated by culturally based reasons for gendered discrimination, humanities and social sciences seem to evoke somewhat different instances of othering and discrimination. Although the knowledge they produce is largely international in its nature, the spatial component of this knowledge comes to the fore in these scientific disciplines. It makes local, country-level events and social processes the primary subject of investigation and theory building. Being recognized as belonging to the country in manifold terms, such as language proficiency, sharing of cultural values and beliefs, and adherence to standards of work, enables one to be eligible to enter and even more so to be considered as established in a respective disciplinary field. Sometimes it is just the career capital that enables further advancement at a new place, followed by further settling in rituals:

Inna (Full professor): *I was lucky to stay at one workplace. Back then, in the early 1990s, my imported knowledge helped me to advance a lot, my boss wanted to retain me and even offered two positions at two different institutes each because of my interdisciplinary profile... After that I put much effort in to learn new things It is very confusing that in Germany so many professionals have very narrow minds and are rarely able to think outside the box.*

Not living up to the expected standards and prerequisites of belonging induces mistrust and irritations on the part of diverse actors. The latter includes not only peer scholars and established colleagues, but also students. While students explicitly doubt the appropriateness of a migrant scholar as their teacher, most native colleagues demonstrate their suspicion through a reluctance to co-operate. In particular, a lack of publications with colleagues as a sign of established academic networks might result in a serious individual disadvantage in the meritocracy preached research landscape. However, against the background of overall competitiveness in German academic organizations, this disadvantage is often written off as a personal responsibility based on the lack of respective skills or low quality of work. This shows how expectations toward the set of attributes and features of a “proper” scholar are shaped and maintained within academic communities. Closed disciplinary cultures can be characterized as homogeneous and with a high share of native-born scholars. It makes no difference whether an academic discipline has a high or low share of women because competition permeates every field of study.

Isolda (Assistant professor): *Exclusion and discrimination experience was my daily routine, many colleagues did not want to talk with me back then. I think this was a fact of racism, since in Germany, only Germans can do research on German philology. My attempts to advance as a scholar in this field, being a foreigner, harboured much potential for conflict.*

Larissa (Lab director): *In my field of study, we started with 120 enrolments, at the end of my studies there were 11 of us. I was the only girl. Blonde. In my job application, I was able to succeed over 46 other candidates, and now, only me and one colleague from Eastern Europe are the only women at our big institute. Yes, we have women at serving positions, such as HR managers or lab assistants, but there are only two female scholars.*

Nina (Postdoc): *Equal opportunity services are a hypocrisy! Women have even greater competition than men, and try to eliminate rivals in even more sophisticated manners than men do.*

To compensate for insufficient inclusion into academic disciplinary cultures, extra work is a frequent agenda. To achieve a deserved acknowledgment in the community and gain colleagues' attention, migrant scholars reported to having approached various colleagues in the same field of enquiry with the prospect to jointly organize conferences, lecture series or small-scale projects. Another option is publications that make the author visible and her contribution to the body of knowledge indispensable and barely overseen.

Supervisor Support

The type of team leadership and a relationship of trust with the manager constitute another dimension pertinent to practices and perceptions of discrimination in German research organizations. Favorable team conditions and a friendly working climate created an inclusive environment, making migrant women feel accepted in their teams. On the one hand, larger teams in natural sciences who usually work in labs and depend on work continuity had certain conflict potential through a clash of cultures with regard to gender discrimination, since these fields of study are usually more internationalized. On the other hand, international team composition reduced the risk of race discrimination and othering based on ethnicity belonging.

Post-Soviet migrant women usually experienced little support from their supervisors in their countries of origin, since supervision is still understood as a formality (Gewinner, 2017). Moreover, the doctoral programmes in the FSU resemble school lessons and imply less individual work with PhD students. Therefore, the contrast between post-Soviet and German conditions became apparent:

- Larissa (Lab director): *My boss very much supports women in science, supports me. I am lucky to have my boss. At other institutes, women have it worse because they do not have such kind of support. Evil tongues whisper that my boss likes me in a very special way because I wear a skirt (knee length!) and sometimes use a lipstick!*
- Inna (Full professor): *Back then, when I wrote my PhD and the Habil [the German second PhD that yields the status of “Privatdozent” – I.G.], I was greatly supported by both my supervisors. The first one believed in me, the second one adopted this strategy to retain me. Currently, my boss is the dean, but in this case, I do not experience any support, on the contrary.*

In case of tensions between colleagues, supervisor support turned out to be crucial, even if it occurred without an explicit intervention. For the majority of the respondents, a supervisor represented the most significant figure in career course, a point of reference and a source of inspiration for pursuing academic career.

- Inga (Assistant professor): *My second supervisor gave me a lot. He helped me on any occasion, gave me advice, he was a mentor for me who made me believe in myself as a scholar.*
- Isolda (Assistant professor): *At the beginning, I approached my colleagues in order to discuss my problems of being forced to stand my ground in the discipline, but they all reacted in such a way as if I were the problem, not the institutional racism. I then realised that and had to keep these issues private. Only my supervisor called a spade a spade and made me feel for the first time that I was not the source of the problem. It was a huge support and strengthened me.*

Individual Endowment

On the individual level, legal status and language proficiency have proved subtle yet important dimensions of discrimination for migrant scholars in German research organizations. The very notion of not possessing a permanent residence permit for most of the female scholars added to a latent need to justify their stay and the right for a highly skilled job in front of the authorities. Prolongation procedures of temporary residence status require a valid work contract, which makes legal status and work contract become interdependent parts, without one, the other is barely possible. Given the shift in entrepreneurial university with its mainly temporary contracts, this causes anxiety and the need to prove that one deserves the job.

Olesya (Postdoc): *I have been unemployed several times already, and the only reason why I have not got problems with the foreigners' authorities is because my husband has a continuous employment contract in academia.*

Nina (Postdoc): *With the urge of mobility in academia, it becomes highly critical what passport you have. The years of my doctorate, collected in France, zeroed in when I moved to the UK. In the UK, I did not seek to settle down and never applied for a long residence permit. I had to start from scratch after moving to Germany and now I cannot afford research stays abroad longer than two months because I would otherwise lose my residence status in Germany ... I cannot even go to the US for my next postdoc to advance my career! ... Next, where should I get my pension from, which country should I ask? Mobility is nice, but it is relative, especially for non-natives!*

While legal status is hardly a reason of conscious discrimination on the part of colleagues, language proficiency and skills might cause explicit discrimination. If the working language in teams is German, which is mostly the case for less internationalized institutions and more closed academic disciplines, then a poor command of the German language might induce certain exclusion from the informal communication and networks. This is not necessarily joint lunch or coffee break conversations, but more subtly friendship-like communications, joint activities beyond work and informal requests for help or support in difficult situations. Even accent creates a barrier of otherness that needs to be overcome. This is not an easy business, since access to informal networks requires a first step toward the dominant group from a “newcomer” who is not necessarily aware of this.

Isolda (Assistant professor): *My accent and mistakes disclose immediately that I am not German. This became an obstacle for finding a position, caused many conflicts.*

Anna (Postdoc): *English is my main language and although I learn German, it is maybe enough for a small talk, but definitely not for a conversation and friendship, not to mention scientific discussions.*

Work Ethic, Social Background and Belonging

Several individual factors turned out to have a substantial impact on female scholars' perceptions of discrimination. On the one hand, some of them developed a strong work ethic to compensate for otherwise lacking access to established scientific networks. At some point in their scientific careers, they realized that institutional structures were not necessarily transparent or inclusive, but rather favoring team members of eminently respectable professors with certain symbolic power. This was especially the case for those of them who did not have a prominent

supervisor, a renowned scholar with an excellent reputation who they could easily affiliate themselves with in terms of publications or fundraising initiatives. As a result, these female scholars established a strategy of solo attempts of gaining reputation in the scientific community through publications and conference attendance, hoping that the latter would make them visible and indispensable for the body of knowledge in their area. Not only the nature of intellectual work, but also the less advantageous position compared to men forced women to work more than their contract specifies. Migrant women's strategy of overwork echoes previous research that has demonstrated that women need to be 1.5 times more productive to be rated equal to men in their work (O'Connor and O'Hagan, 2016).

Isolda (Assistant professor): *My colleagues legitimised my person and the arguments I brought about in discussions with students or at conferences just through being there with me. When I was teaching or presenting alone, it had a conflict potential – in their opinion, a non-German person simply cannot teach German. It helped me to concentrate on the work and not let my goals out of sight.*

On the other hand, this strategy fitted the migrant scholars' general work philosophy that was greatly bound to women's social backgrounds. All of them originated from academic families where not only their parents, but also partly grandparents graduated from higher education institutions. This belonging to the class of intelligentsia is tightly connected to ubiquity of intellectual work and certain work profiles, such as medical doctors, teachers, engineers and artists, critical reflection skills and high moral standards. Working hard and seeing (intellectual) work as a life value is key to understanding female scholars' work ethic and decisions regarding academic work in German research institutions. They define themselves through academic effort and consider it a natural part of life, which largely supports the argument of strong work embedding. Being fully involved in academic work in the German academic system, for them, means professional fulfillment, commitment and counterbalance to significant competition. Simultaneously, women are proud of having maintained their social status and see the positions they achieved as a contribution to gender equality and their own independence.

Larissa (Lab director): *My colleagues tell me, I am more German than they are with regard to my work principles. They wonder how I keep things on the run.*

The issue of work ethic and class belonging raises a question on migrant scholars' general sense of belonging and how it fits the general work ethic in German research organizations. Surprisingly, none of the respondents could definitely say whether they felt German or Russian/post-Soviet. Instead, these women articulated to having absorbed the best from both contexts, such as natural curiosity and interest in new things, passion and openness to other people,

and at the same time strict discipline, planning and time management skills. This suggests cosmopolitanism that unites people through joint work and collaboration, making work norms and moral ideals stronger than mere cultural traditions and differences in people.

Ksenia (Full professor): *[...] I learnt to approach other people and establish co-operations, since it helps a lot in Germany ... I'm happy to be disciplined and to have time management skills, this is indeed how things work here.*

Physical Appearance and Sexual Harassment

Although being an independent subject, physical appearance acts as a cross-cutting theme not only across the interviews, but more importantly, across all other categories of differentiation. Being a woman, having blonde hair, being of a younger age than the average of staff, and/or wearing a skirt is enough to be exposed to processes of discrimination or mistrust.

Larissa (Lab director): *Dark haired women definitely have it better in academia than blonde ones. At least you stop being a subject of jokes, and no one tells you dubious gags about blonde women and science.*

Ksenia (Full professor): *[...] Once, I was really angry that my colleagues would rather drink coffee and chat than do the job, so I just met the decisions on my own instead of waiting for them again. It was necessary because we were running out of time and I could not wait any longer. I was so upset when I understood that this event made them realise that I am not a girl who is different, but an equal colleague they should take into account. Some of them approached me and said, "You know, I thought you were just a young girl, but now I see what you can do, can we work together?" Others just hardened their fronts and talked about me in a condescending manner ...*

Not fitting the ideal of the typical appearance or being in a numerical minority can lead to sexual harassment. Not all respondents experienced it or addressed this in the interviews, thus making the real extent of sexism in academia nebulous:

Nina (Postdoc): *After I pushed back some male colleagues' overt discrimination attempts who told me, I would not have scientific identity and I am simply nothing and should become a mother instead, some of them initiated flirt attacks, tried to touch me.*

Larissa (Lab director): *One French colleague offered me to look at his baguette... Another one told me he wrote an erotic novel featuring me and asked whether I'd like to read it. I have not taken action against this because I knew he would retire soon and I would have to continue my work here. The numerical number of women is not the problem. I believe, this behavior is an expression of a lack of education or socialisation in very traditional contexts that are counterproductive.*

As established, competition in academia can sometimes mutate into sexual harassment. In this case, men deliberately humiliate female colleagues to discredit them and their reputation. Competition between women occurs in such a way that women who are not affected tend to distance themselves from the issues of harassed female colleagues and act as if nothing happened. Even equal opportunity officers seem to have no power or personal interest to communicate these structural issues.

Family Situation

Family is a crucial factor in understanding practices of work of female scholars in Germany. An in-depth analysis of patterns of interpretation and individual behavior reveals the powerful influence of the cultural contexts in which the respondents were socialized. Russian-speaking female academics in Germany partly retain the norms of the gender contract of “working mother” despite the change in cultural context through migration. Both motherhood and work still play an important role for them, indicating the parallelism of life events. However, the fact that only a few scholars had children at the time of interview indicated a certain adjustment to the German context of mainly childless female scholars, thus making motherhood a category of difference.

Oksana (Senior researcher): *We are an unconventional family in every sense – we both work in different cities, we constantly agree on plans to take care of our son and consider it normal. We try to spend more time together, then it's an island of relaxation for us. But from the perspective of the mostly childless colleagues, we are just crazy.*

Nina (Postdoc): *In France, I would have already had three children. In Germany, I cannot afford this. I know I would lose my partner if I go abroad where I can have both work and children, he would not move together with me.*

Experiences as a mother disclosed structures of inequality and discrimination migrant women faced in German research organizations. If the family was not able to accommodate childcare, women were forced to seek institutional support,

which sometimes turned into a subject of clear discrimination. This is best portrayed in the experiences of Isolda, a mother of a pre-school child, who does not have relatives in Germany and shares childcare with her husband:

Isolda (Assistant professor): *There is a MiniCampus, where I leave my son about 15 times a year. The lady who organizes it spreads rumours saying what a bad mother I am, constantly leaving my child all day with strangers.*

The notion of not being able to reconcile both work and parenting is omnipresent in German research organizations, which turns parents into outsiders regardless of their effort and de facto better organization of work. Alternatives to dominant models of work–life arrangements are silenced. This demonstrates how much support actions and significant role models can change:

Inna (Full professor): *I treat my PhD students as my supervisor treated me when I got my first child: I tell them that it is possible to combine work with parenting. Once I had a PhD student who told me she was pregnant and already expected that I would deprive her of her dissertation topic. The opposite was the case. I always tell my students that they bring children at 7pm to bed and then they have an evening to work if needed. In retrospect, many of my mentees were grateful that they could receive a doctorate and become parents.*

Although the practice of work in the evenings is controversial, it does not necessarily mean additional working hours. Rather, it might signify a certain restructure of a working day and a flexible, individual work organization, which does not necessarily correspond to a rigid culture of presence at a workplace. This, in turn, might have a substantial impact on sustainability of academic work.

Discussion and Conclusion

Interviews with Russian-speaking migrant female scholars in German research institutions revealed patterns of coping with perceived disadvantage and discrimination. They depended on the interplay of institutional conditions and individual characteristics and embedding (Ryan, 2018) in the workplace and host country in general. Extending the body of theoretical knowledge on perceived discrimination in organizational contexts, these dimensions provide valuable insights into the processes of othering in highly competitive academic contexts, which challenges the normative discourse of meritocracy and draws a more finely tuned picture from the perspective of migrants. Practices of discrimination depended on internal organizational culture, degree of internationalization of the research organization, and research discipline on the part of the institutional context, and residence status, language proficiency, work ethic as well as social background,

sense of belonging, and family situation on the part of individual characteristics. These factors can be understood as categories of differentiation, thus largely contributing to the subtle practices of othering in the German academic system. As demonstrated, institutional or individual aspects do not solely contribute to marginalization and perceptions of discrimination in academic contexts, but interaction of both levels of agency. Especially disciplinary cultures and micro team composition create spaces for facing practices of othering, but also settling mutual approximation. Likewise, imported individual cultural values and the feeling of belonging condition communication at the workplace and the perception of discrimination at work.

Three noteworthy general arrangements become visible with regard to perceiving and coping with discrimination, simultaneously providing implications for practice. Firstly, the feeling of belonging to both work and the country takes a great deal of commitment to academic work and intention to stay in academia. This embeddedness into work which female scholars were socialized with, is facilitated through women's adherence to the unwritten code of conduct in German research organizations. Strong resilience and the superiority of work instead of conflicts drive Russian-speaking female scholars in German research organizations. The more factors of othering emerge, there is less of an individual perception of discrimination in the new environment. Strong welcome culture, compulsory information sessions for people with different cultural backgrounds, and social events might represent the means for teambuilding and reduction of discrimination.

Secondly, tied to the first observation, migrant scholars' perceptions of work in general determines how they face and perceive disadvantages, and potential discrimination in the workplace. If work represents a life goal and a certain value that implies self-realization, independence, and self-esteem, then discrimination is perceived as an unlucky accident, and the initiators of discrimination, such as men from women-unfriendly societal contexts, as uninformed agents with a lack of soft skills and openness toward diversity. The combination of work and family as a general strategy of balancing two important life values induces tensions and requires not only an egalitarian partner, but also good (time) management skills to harmonize work and private life without creating a perceived substantial imbalance. Ensuring different models of work and parenting are made visible might serve as role models for the dominant group and facilitate reduction of discrimination toward scholars with children.

Thirdly, physical traits and appearance in public can greatly deceive the environment and cause mistrust and discrimination of migrant scholars merely based on superficial characteristics. A skirt or a dress, or accent do not disclose anything about one's expertise, productivity or work ethic. Using physical appearance for the assessment of one's competence and building a judgment of a colleague's skills based on these aspects play a role in German research organizations as long as a newcomer exhibits the traits indicated as different or atypical for the dominant environment. Communication and further internationalization of research teams might represent a partial solution to an otherwise homogeneous academic environment.

The findings suggest that internationalization of higher education barely influences diversification and smoothens the inequalities rooted in cultural traditions. Migrant women seem to adapt quickly to new environments, and their work ethic is shaped around the intrinsic goals, not power games. Yet, they are exposed to the latter in competitive environments, where cultural traditions are at stake. Gender equality can hardly be achieved if policy measures only address the quantitative side by merely increasing the number of women employed in academia. Qualitative and individual measures for newcomers appear as a better solution, such as targeted team conversations that incorporate clarifications of how work-related issues function in Germany or elsewhere, and what organizational culture and teamwork mean. However, these measures imply additional effort on the part of the managers and team supervisors and can only succeed if one of the actors (in this case international scholars) is willing to adjust to the values and cultural traditions of the others.

One of the main limitations of this study is the small sample size and the need to conduct further studies with larger samples. Another limitation is the focus on only one migrant group of scholars in German academia. Russian-speaking women embody a rather specific social group with a strong academic background and diligent work style, both beneficial for career advancement. It is conceivable that women and men with different social and migration backgrounds perceive discrimination in German academia in dissimilar ways. Therefore, future research should explore these potential differences in a comparative manner, not only including interactions between natives and non-natives, but also between different groups of migrants. Moreover, cultural belonging and career progression after migration might be another promising research avenue, particularly addressing various disciplinary cultures.

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Conclusion

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Chapter 12

Promoting Diversity and Combatting Discrimination in Research Organizations: A Practitioner's Guide

Clemens Striebing, Jörg Müller, Martina Schraudner, Irina Valerie Gewinner, Patricia Guerrero Morales, Katharina Hochfeld, Shekinah Hoffman, Julie A. Kmec, Huu Minh Nguyen, Jannick Schneider, Jennifer Sheridan, Linda Steuer-Dankert, Lindsey Trimble O'Connor and Agnès Vandavelde-Rougale

Abstract

The essay is addressed to practitioners in research management and from academic leadership. It describes which measures can contribute to creating an inclusive climate for research teams and preventing and effectively dealing with discrimination. The practical recommendations consider the policy and organizational levels, as well as the individual perspective of research managers. Following a series of basic recommendations, six lessons learned are formulated, derived from the contributions to the edited collection on “Diversity and Discrimination in Research Organizations.”

Keywords: Inclusive work climate; lessons learned; policy recommendations; recommendations for actions; bullying; sexual harassment

Diversity and Discrimination in Research Organizations, 421–441



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Transfer to Practice

It is a particular concern of ours to provide practitioners in academic organizations with the insights that they can draw from the contributions presented in this edited collection for their work and their specific organizational contextual conditions. With this essay, we therefore want to offer a comprehensive orientation on the question of what measures can be taken in practice to create discrimination-free working conditions for a diverse workforce, whereby we especially address academic leadership and research managers. Our prototypical program is described in the following steps:

- Based on research on effective gender equality policies in research organizations, we derive four conditions that policy-makers should consider to provide sufficient framework conditions for reducing social and systemic discrimination in academia (see “Recommendations for Policy-Makers” section).
- We outline a compact program of measures at the organizational level, which is essentially based on the studies of the [US National Academies of Sciences, Engineering, and Medicine \(2018\)](#) about the sexual harassment of women in science and experience of this article’s authors, which we have gained in our own projects (see “Recommendations for the Design of a Discrimination Resurrection Program” section).
- We discuss the role that research management can – or should – play in creating a diversity-inclusive team climate as well as preventing and managing cases of discrimination (see “Recommendations for Academic Leaders and Research Managers” section).

Finally, we discuss how the contributions in this edited collection add to the current state of research on the effective prevention and fair treatment of discrimination in the scientific workplace (see “Our Lessons Learned” section).

Recommendations for Policy-Makers

For more than two decades now, the European Commission has been funding research projects that address the question of how to increase the participation of women researchers in research teams and decision-making positions in the European Research Area. Without claiming to be exhaustive, examples include the Helsinki Group on Women in Science reports first published in 2002 ([EC, 2008](#)), the PRAGES project ([Cacace, 2009](#)), and the STAGES project ([Kalpazidou Schmidt and Cacace, 2017](#)).

A subsequent assessment of the Organisation for Economic Co-operation and Development’s ([OECD, 2018](#)) Science, Technology and Innovation Outlook appears to be rather skeptical concerning the impact of gender equality interventions in science, technology, engineering, and mathematics (STEM). The authors recognize the strong prevalence of gender equality measures among OECD countries, mainly aiming to increase the number of students in the STEM fields and the provision of support to individual women scientists. However, they criticize the fragmentation of current policy actions “[...] characterised by multiple

institutions acting independently, and limited co-ordination between education, science and innovation actors” (OECD, 2018: 178). They attest an insufficient sustainability of the various initiatives and the need for more systemic evaluations and indicators as well as mutual learning formats. Especially regarding the importance of long-term monitoring and evaluation of gender equality challenges and measures, the OECD report confirms the policy recommendations of the mentioned EC reports. Moreover, the nub of equality measures addresses the quantitative equalization of women and men, yet the quality of work and working climate are a rare issue.

The following framework conditions for success in promoting gender equality in research – and, by analogy, promoting underrepresented or disadvantaged groups of people – can be derived from the reports mentioned above.

- **Gender monitoring:** Highly institutionalized gender monitoring that comprises a high number of research institutions and indicators keeps gender equality on the broader political and organizational agenda and enables problem-framing and impact evaluation of gender equality measures.
- **Leadership:** A clear commitment of political and organizational leaders gives legitimacy to those actors like working groups, equality officers or intrapreneurs who work every day to improve gender equality in their organizations.
- **Networks:** Networks enable mutual learning for research organizations and enable coordinating extensive actions at multiple levels between versatile actors from local to global.

A fourth condition for success – which is not explicitly mentioned in the reports above but should not be underestimated – is the binding nature of anti-discrimination measures. Research shows that a lack of consequences often restricts the effectiveness of gender equality measures (Matthies and Zimmermann, 2010; van den Brink and Benschop, 2012). Firm accountability provides measures such as quotas, voluntary agreements and gender equality plans with the necessary binding force and therefore will be considered in the following discussion, along with the other policy approaches.

Recommendations for Designing a Discrimination Reduction Program

Structured according to a simplified policy cycle that distinguishes the phases of policy formulation, implementation and evaluation and has an iterative sequence, Fig. 22 lists a number of measures to reduce, prevent and manage experiences of discrimination in the research workplace (see also Marquis et al., 2008: 4–6).

Evaluating the Status Quo and the Achievement of Objectives. The basis for developing an effective anti-discrimination program is a sound knowledge base on the distribution of employees according to different socio-demographic characteristics (e.g. age, gender, care responsibilities, ethnicity, etc.). For the purpose of evidence-based development of a discrimination reduction program, ideally data is collected that relates the respective socio-demographic characteristics to organizational status characteristics (e.g., hierarchical position, function, income)

or employee perceptions and experiences (e.g., survey of work climate, experiences of social misconduct, compatibility of professional and private obligations).¹

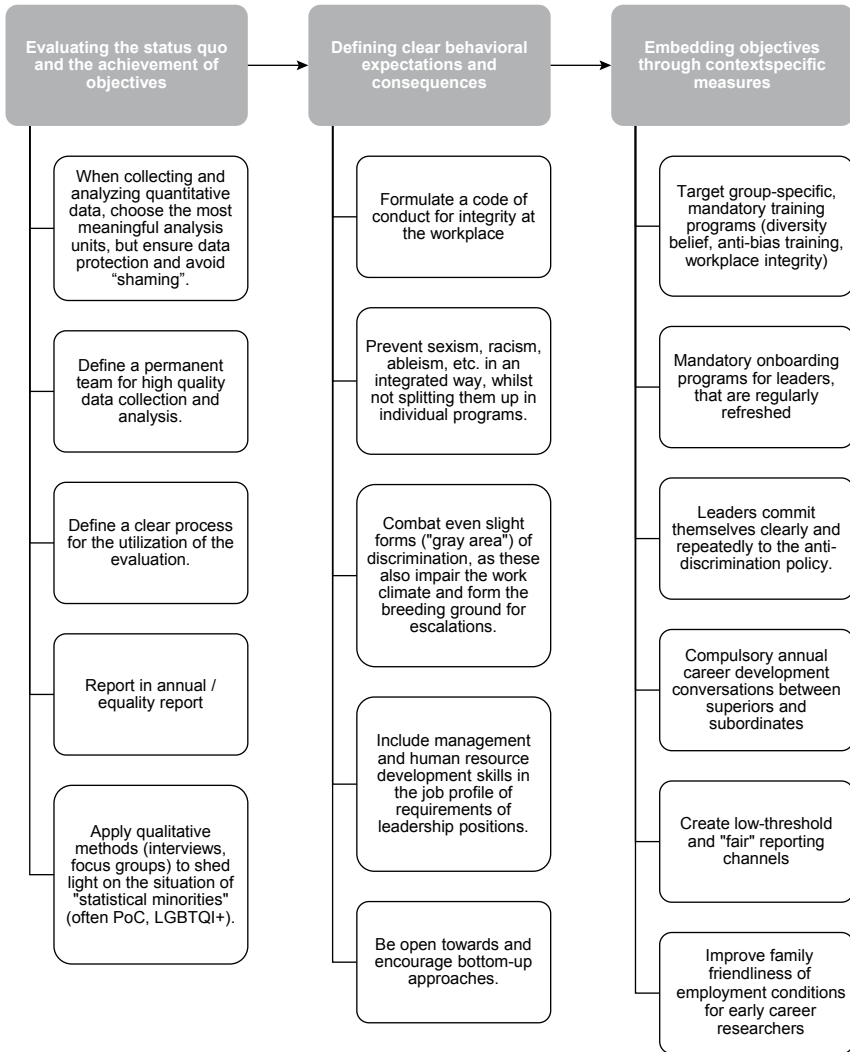


Fig. 22. Building Blocks of a Coherent and Comprehensive Program to Ensure a Discrimination-Free and Diversity-Friendly Workplace.

¹Potential guidelines concerning the assessment of diversity initiatives: J. Marquis, N. Lim, L. Scott, C. Harrell, and J. Kavanagh (2008), [online] Rand.org. https://www.rand.org/content/dam/rand/pubs/occasional_papers/2007/RAND_OP206.pdf accessed 10 February 2022.

The finer the units of analysis, the more meaningful the evaluation of the status quo and the achievement of objectives. For example, to identify potential outcomes of systemic discrimination, data should be differentiable by scientific or non-scientific activity or hierarchical level. The work climate may considerably vary between individual teams and across disciplines, depending on conflict constellations that are very situation-specific.²

For an evaluation to be successful and – above all – practically relevant, it is important to plan for budget and working time. Evaluations not only involve sending out an online survey and presenting the results in PowerPoint; rather, they require a person or group of persons with sufficient expertise to develop an evaluation concept (key questions are: What do we want to know and why?), implement it using suitable survey instruments (questionnaires, interviews, focus groups, document analyses, etc.) in compliance with data protection regulations, and generate meaningful data that meet social science quality standards (e.g., validity and reliability, transferability, representativeness). In the meantime, there are a number of tools that enable an easily applicable organizational survey tailored to research organizations, e.g., on gender equality.³ However, without social

Guidance on measuring socio-demographic characteristics: J. H. P. Hoffmeyer-Zlotnik and U. Warner, *Measuring Ethnicity in Cross-National Comparative Survey Research; GESIS-Schriftenreihe Band 4* (Bonn: GESIS – Leibniz Institute for the Social Sciences, 2010); J. H. P. Hoffmeyer-Zlotnik and U. Warner, *Measuring Occupation and Labour Status in Crossnational Comparative Surveys; GESIS-Schriftenreihe Band 7* (Bonn: GESIS – Leibniz Institute for the Social Sciences, 2011).

Guidance on measuring diversity and inclusion: K. April and E. Blass, *Measuring Diversity Practice and Developing Inclusion* (2010). https://www.researchgate.net/profile/Kurt-April/publication/228668437_Measuring_Diversity_Practice_and_Developing_Inclusion/links/0a85e534e003f59ba3000000/Measuring-Diversity-Practice-and-Developing-Inclusion.pdf, accessed 10 February 2022.; S. Thompson, “Defining and measuring ‘inclusion’ within an organization”, K4D Helpdesk Report (Brighton, UK: Institute of Development Studies, 2017).

²At the same time, the units of analysis should not be chosen too finely. Data protection requirements are crucial here. The data collected and reported regularly must not allow drawing any personal conclusions, i.e., the identification of a respondent based on the data shared by him or her (which can quickly become the case, especially for research organizations with a three-digit or lower number of employees). Furthermore, when surveying the work climate, opinions and experiences of employees, valid results can only be expected if “shaming” is excluded. The results should not be used to compare individual teams or groups to identify high- or low-performers.

³See for example the GEAM Tool: “The Gender Equality Audit and Monitoring (GEAM) tool is an integrated environment for carrying out survey-based gender equality audits in academic organizations or organizational units”, <https://act-on-gender.eu/nes/gender-equality-audit-and-monitoring-geam-tool> accessed 15 March 2022. For another example, see the Immunity to Change Tool, which helps people identify and subsequently alter “competing commitments” that conflict with change (e.g. a change in the gender composition of research spaces), <https://www.gse.harvard.edu/hgse100/story/changing-better>, accessed 16 March 2022.

science expertise, even these tools cannot be used optimally, nor can the data generated be interpreted well.

Statistical methods such as questionnaire surveys often reach their limits when researching minority groups such as employees with health impairments or LGBTQI+ employees. Since social minorities are obviously often small groups in terms of numbers and therefore difficult to reach, collecting data on them often violates data protection regulations. Person-related inferences are easily made possible when – for example – two out of 80 respondents assign themselves to a third gender category. In these cases, qualitative methods such as interviews or focus groups, must be used to gather information about any experiences of discrimination. Another strength of qualitative methods is that they enable understanding correlations in data (e.g., why one social group evaluates the work climate worse than another), whereas the strength of quantitative methods lies in detecting and confirming such correlations.

Another necessity for an evaluation that holds practical relevance is a process for its utilization. Within this framework, questions arise concerning how often an evaluation should be carried out, what happens to the results of the evaluation, what happens in the case of conspicuous or critical values at the organizational or team level, who determines the threshold values for the critical values, and who manages this process. The clearer and more binding that the process is for utilizing the evaluation results, the stronger the practical impact of the evaluation.

The data collected and the evaluations carried out on it should be handled transparently to counteract the creation of organizational myths within the workforce about positive and negative discrimination among them, potentially compromising the effectiveness of anti-discrimination policies.⁴ The results of the status quo and progress evaluation can be reported in the annual or equality report of a research organization. Continuous progress monitoring requires that the data collected meet social science standards from the outset (see the discussion of evaluation teams above), since data are no longer comparable between two or more time periods if the questionnaire design is changed in significant ways.

The knowledge base generated by the evaluation can be used to develop targeted policies. Noteworthy, the evaluation of the policy program to be established should already be considered during its development (Palmén et al., 2019). Key questions are which indicators can be used to determine whether a program has been successful or whether adjustments are necessary. Furthermore, how are the data needed to answer this question generated, and who collects and evaluates them? Adequate human resources must be planned for ongoing evaluation.

⁴Organizational interventions such as diversity measures or data collection in the context of such measures are naturally questioned by organizational members. Organizational members interpret such measures based on how they perceive their organization. These assessments can tend to be positive or negative, which is why proactive communication management in relation to diversity policies is important. For a detailed discussion of the causes and effects of diversity resistance, see Thomas (2020).

Policy Formulation: Defining Clear Behavioral Expectations and Consequences. When designing a social intervention such as an anti-discrimination program, it is important to formulate a set of goals that are as specific as possible for the state to aim for. Specific goals enable the effective planning and use of the human and financial resources available to implement the program, means-ends relationships can be assessed for appropriateness, and goal achievement can be evaluated. Insofar as an organizational cultural change is aimed for, it should be clearly presented accordingly which behavior is expected from the employees in concrete terms, which complaint channels are open in the event of violations and which consequences may occur (Daley et al., 2018).

A code of conduct can be formulated as a key document that provides a framework of orientation for employees and the anti-discrimination program. The code of conduct should be short and compact. It should not be formulated only by the leadership team but in a participatory process involving employees. This promotes the acceptance and implementation of such a code of conduct. In practice, such codes of conduct regularly address the key issues of workplace integrity and the prevention of workplace incivility. Such broad framing signals that protection against discrimination requires the active cooperation of all employees and that not only extreme cases of discrimination that can be proven in court are to be prevented, but rather that the general aim is to create a positive inclusive working environment in which even minor forms of discrimination cannot flourish in the first place.

Broad framing as workplace integrity or incivility also emphasizes the integrated nature of an anti-discrimination policy. In practice, in most academic institutions, equality officers, disability officers, anti-racism officers, work councils and other bodies are separate institutions that often have to establish mutual intersections. For example, if a sexist work environment prevails at a university or other academic institution, organizational change should not only be the responsibility of the equal opportunity officers, but must be driven by the management level and lived by all employees. Moreover, it is very likely that other types of discrimination are also taking place. A smart anti-discrimination policy takes into account and bridges the functional differentiation of institutional discrimination prevention and management.

In the sense of an integrated approach with clear behavioral expectations, it is also important to explicitly include personnel management competencies in job profiles and subsequently also evaluate academic leaders based on these competencies. At present, the suitability of researchers for leadership positions is often assessed solely based on their academic performance and very few leaders are trained to recognize or effectively address inequitable behaviors. Management and personnel leadership skills are expected in very few job requirements, although “team science” (Wang and Barabási, 2021) is on the rise.

When designing policies, it is also important to encourage bottom-up approaches, i.e., initiatives coming from employee representatives, team members, and not decided by an institution’s management. Such initiatives are more likely to promote equity in a grounded and reflexive approach that might challenge dominant views on personnel management in academia and research organizations.

Bottom-up approaches could *inter alia* help thinking research policies and practices outside a neoliberal managerial grid (see Vandevelde-Rougale and Guerrero Morales in this collection) and thus contribute to fostering a more caring environment, with more time and resources allocated to thinking and creating, and less to complying with evaluation indicators based on international rankings that tend to reinforce power imbalance and competition both between individuals and between organizations instead of acknowledging the contribution of research to society (Hodgins and McNamara, 2021).

Policy Implementation: Embedding Objectives Through Context-Specific Measures. An anti-discrimination program should generally be implemented through context-specific interventions (Palmén et al., 2019). This means that the program should be tailored as appropriately as possible for the specific situation and challenges in an organization. Individual interventions should be adapted to the requirements and needs of different target groups, such as research managers, early career researchers, administrative staff, and others. Measures should also take into account organizational characteristics: for example, in a research organization with low staff turnover, targets for the representation of certain social groups will only be realized in the long term.

In terms of content, a wide range of measures is available, which should be coordinated with evaluating the status quo and formulating goals. Typical measures include welcome actions for new staff, training for employees to enable them to implement the goals of the anti-discrimination program in their daily work; for example, to recognize and overcome implicit prejudices against certain social groups, work productively in diverse teams, or behave appropriately as a bystander to discriminatory behavior in the workplace. Training such as anti-discrimination or anti-gender bias training as part of institutional onboarding after hiring and repeated refresher courses can also help to ensure that managers have the appropriate skills for inclusive leadership and conflict management.

As already mentioned above, the commitment of the academic leaders in a research organization is a central condition for the success of an anti-discrimination program. This commitment should be visible in the organization; for example, through speeches or circulars (provided that these discourses are linked to means and practical actions).⁵

Fig. 22 lists a range of other possible measures through which the goals of an anti-discrimination policy can be implemented: regular career-related and documented development discussions between leaders and their employees promote joint career development and partly counteract biased preference or disadvantage in interactions between leaders and their employees (vertical discrimination), especially early career researchers and their supervisors, as well as among employees

⁵Of course, visibility per se is insufficient and adverse effects can be observed where there is a discrepancy between managerial discourse (including against discrimination and/or workplace bullying) and organizational practice (see *inter alia*: Clasches, 2019; Bereni, 2020; Vandevelde-Rougale, 2016).

(horizontal discrimination). Low-threshold, confidential, and well-advertised reporting channels – which can not only be consulted in cases of tangible discrimination – may enable leaders to intervene at an early stage. In cases where the personal supervisor is excluded as a reporting channel due to a conflict, research organizations should offer “neutral” reporting channels that are not embedded in local hierarchies and dependencies. Depending on the context, measures aimed at improving the reconciliation of scientific work and private life are potentially suitable for reducing gender-related discrimination, e.g., crediting parental leave and care responsibilities when assessing the scientific performance of an early- or mid-career researcher, waiving meetings at off-peak times, or offering childcare.

Recommendations for Academic Leaders and Research Managers

Research managers are considered to be those individuals who provide support services to researchers and academics and themselves have an academic education and – in some cases – experience in research and teaching (WR, 2018: 85).⁶ They work in staffs or decentralized units, monitor compliance with quality standards, supervise committees, and are involved with personnel processes in a variety of ways.

While the integration and productive use of diversity in research teams in everyday work is the task of traditional academic leaders – e.g., chair holders, research group leaders or the dean – research managers are regularly entrusted with diversity monitoring and developing and implementing strategic action programs (as exemplified above) from an organizational perspective. A comparable division of labor also exists for preventing and handling discrimination, which are regularly to be resolved initially by “line management,” i.e., the immediate leader in accordance with the academic hierarchical order, but which can be handed over under certain criteria or alternatively to specially established committees, staff units or service providers. Examples include academic ombudspersons, equal opportunity officers, compliance officers, representatives of the severely disabled, staff councils, psycho-social counseling centers, lawyers or other external reporting offices. Nonetheless, as studies in this volume show, these organs do not always interfere flawlessly, which require further optimization of their work and anti-discrimination actions.

Integrating Diverse Teams. Regarding gender-diverse teams, Nielsen et al. (2018) discuss how to create a diversity-inclusive team climate in research and

⁶With the emergence of professional research management, the status of faculty changes from autonomous members of their respective scientific profession to employees of the respective university or research institution, as Gerber (2014) states for the United States. In the European research area, the emergence of the professional group of research managers has been accelerated by the Bologna reform (to harmonize the system of higher education teaching across Europe) and the increased importance of third-party funding for research financing, as a result of which universities have been increasingly entrusted with management tasks (WR, 2018: 85).

innovation development. First, the quality of collaboration and problem-solving ability of diverse teams (and homogeneous teams as well) is considerably influenced by their diversity belief and openness to diversity. Diversity belief refers to the conviction of individual team members that their difference is a strength in the work process (van Dick et al., 2008). Openness to diversity refers to the awareness of – for example – visible, informational or value differences in a team and the willingness of a team member to engage with dissimilar individuals and learn from them (Hobman et al., 2004). Accordingly, it is recommended that academic leaders interact with their teams to determine whether they view themselves as homogeneous or heterogeneous in terms of the professional and socio-demographic characteristics of their members and whether they view each as positive or negative. A low openness to diversity or a low diversity belief would have to be explored in an exchange with the team or a bilateral exchange with the team members.

Second, teams that work productively are those whose interactions (i.e., conversations and collaboration) between team members are determined by the expertise and experience of individual team members rather than social relationships (Joshi and Knight 2015). For leaders, this implies clearly identifying and communicating to the team the competencies and responsibilities of each member of their team. Larger work tasks in research projects should be differentiated according to the competencies that they require to be mastered and how the team members can optimally complement each other in their competencies.

Third, the same applies to the integration of diverse teams that applies to team processes in general, namely teams need team players. Team members should have a certain level of identification with their team, a shared sense of purpose and they must trust the team's ability to accomplish tasks, the team's processes should be transparently coordinated, and team members should treat each other with mutual respect and openness (Nielsen et al., 2018). The team structure should thereby regulate itself based on the competencies and expertise of the team members, as noted above. Too much team cohesion in turn can lead to isolation and silo thinking in an organization and may even be more conducive to exclusion and discrimination processes (Feldblum and Lipnic, 2021).

Preventing and Managing Discrimination. The expectations placed on leaders and research managers to prevent and deal with discrimination in the workplace are sometimes high and sometimes seem contradictory. An idealistic and a realistic perspective can be distinguished.

In the idealistic perspective, organizations strive for rationally acting leadership and management personnel. These personnel are sensitized through training and show zero tolerance toward discriminatory behavior and structures in the workplace. They regularly and perceptibly commit to zero tolerance in the organization, set an example through their own behavior, and deal with discrimination claims promptly and fairly (prototypical Daley et al., 2018).

On the other hand, a realistic perspective takes better account of the complexity of social conflicts in the workplace. It is often not possible to say clearly who are the perpetrators and who are the victims in a conflict case. Typical of this

are claims of systemic discrimination based on institutions – i.e., implicit and explicit rules and practices – in an organization or in cases of scandalization. In his studies on academic mobbing, Westhues (2021) recommends a sober and critical approach to complaints of workplace misconduct within the line authority. The respective academic leaders in charge would have a broader perspective to deal with claims sensitively and fairly, whereas individuals and committees specifically appointed to investigate would sometimes tend toward zealotry. Westhues emphasizes that social conflict in the workplace is often borne out of social relationships. The individuals involved in each case seek empathy and allies, which can lead to the aforementioned scandalization, i.e., criticism by a group against an individual (also conceivable in relation to accusations of inaction regarding dismantling discriminatory institutions), without there being any concrete misconduct against the group.

In turn, the realistic perspective reaches its limits where problem-solving by academic leaders does not take place; for example, because they are involved in the conflict themselves, they are not willing to adjust supposedly discriminatory structures and rules, or an adjustment of the structures simply exceeds their work capacities.

In summary, it can be deduced from the comparison of the two approaches that universities and research institutions need sensitized leadership and management personnel who are aware of their role model function and trained to deal with employee complaints objectively, discreetly and rationally. At the same time, due to their embeddedness in the work processes of their own organization, academic leadership personnel are also only capable of objectively and conclusively resolving cases of social misconduct and discrimination complaints to a certain extent. This requires contact points that deal with preventing and managing discrimination on a structural basis (and not exclusively based on a specific case).

Our Lessons Learned

Lesson 1: Identifying and Knowing the Majority Group in a Research Organization Is Key to Understanding Discrimination Processes

Our first lesson learned is anything but a novel insight; rather, it is the core of social identity theory. The theoretical assumption that there are so-called in- and out-groups in (research) organizations, whose boundaries are constitutive of experiences of discrimination partly formed through experiences of discrimination, is supported in particular by the contributions of Sheridan et al., Striebing, Pantelmann and Wälty, Nguyen et al. and Gewinner. The contributions discuss and/or provide evidence of the negative consequences of deviating from a norm type that can typically be described as male, healthy, and belonging to the ethnic majority in a country. In their paper, Pantelmann and Wälty comprehensively explain the historically formative role of this in-group, leading to what the authors describe as an androcentric academia. A typical example of the androcentric character of work processes in academia is the traditionally very high proportion of men in scientific leadership positions and the low proportion of men in administrative

assistant functions [e.g., [Kolboske \(2021\)](#) shows this for the German Max Planck Society].

The respective in-groups – which vary in their composition depending on the local context – have defined the implicit and explicit rules and practices in research organizations over time and continue to play a major role in determining their interpretation. Examples of such indirectly exclusionary rules include processes that appear to create rationality and transparency, such as evaluation rules or review committees. These kind of rational processes are problematic when they only aim to create decision legitimacy through processes seen as legitimate rather than a truly legitimate, just, “good” outcome, free of cognitive bias (van den Brink and Benschop, 2012, on the concept of legal legitimacy: [Mayntz, 2010](#)). The Covid-19 pandemic and the associated problem of double jeopardy – especially for the parents of young children – is an example of how processes that appear objective can lead to systemic discrimination when research organizations evaluate process outcomes as “neutral.” The constraints associated with the pandemic have led to an average decline in publication output among female researchers, which will disadvantage their long-term career development if research organizations maintain their unilateral focus on process justice rather than outcome justice ([Squazzoni et al., 2021](#); [Nature Editorial, 2021](#)).

Examples of informal practices shaped and reproduced by an in-group that can have an indirectly exclusionary effect may seem trivial in some cases, but they can be highly meaningful in individual research organizations. One can think of regulars’ tables, meetings in the evening hours, 24/7 lab hours, hiking groups, and other forms of interaction that promote exchanges based on expectations of presence and personal sympathies rather than professional skills and expertise ([Nielsen et al., 2018](#)).

In their study of Vietnamese social scientists, Nguyen et al. illustrate that individuals who assume a higher level of effort in informal household and care work are disproportionately less able to meet academic performance expectations than individuals who assume fewer household duties. In Vietnamese society, it is also usually women who are influenced in their career advancement by more informal work.

In his study on work climate in the Max Planck Society, Striebing also shows for Germany that women with responsibility for minor children rate their work climate lower than men with children or women without children. In Striebing’s studies on work climate and bullying, women generally rate their work climate lower than men and experience bullying more often.⁷ Moreover, according to Sheridan et al., it is the employees who deviate from the norm due to their sexual orientation, skin color or health impairments who seem to most frequently experience hostile and intimidating behavior in the academic workplace (see lesson 5).

⁷The influence of nationality presents a more complex picture, for which an obvious explanation is that nationality groups are attributed different statuses and possibly also different stereotypes.

Using the example of women researchers from the former Soviet Union working in Germany, Gewinner provides a comprehensive picture of the extent to which institutions shaped by the respective national majority society and the in-groups in academic organizations pose special challenges to individuals who deviate from the in-groups; for example, due to their gender, living circumstances, or nationality.

Since academia – shaped by its respective local in-groups – cannot necessarily provide equal opportunities for a diverse workforce, good academic leaders and research managers strive in a self-reflective manner to dismantle those structures and processes that can lead to implicit and indirect disadvantage for certain groups of employees. This means that strengthening disadvantaged groups through mentoring and networking programs as well as training can only be one part, but it is equally important to be attentive to structures and processes that can lead to disadvantage, and to dismantle them.

Lesson 2: Managers Are Not Neutral Regulators and Conflict Resolvers

Creating an inclusive work culture, designing and implementing anti-discrimination prevention programs, reducing discrimination, and intervening in cases of conflict in the workforce are especially the tasks of academic leaders and research managers. A number of the studies in the edited collection imply that this group of people is not itself a neutral entity and is itself part or non-part of organizational in- and out-groups, as well as one of the most important levers for successful diversity management.

The study by Kmec et al. supports the relevance of belief systems in the interpretation of illegal harassment behaviors. The authors found that individuals who hold more gender egalitarian beliefs (that women and men are equal) are more likely to recognize factually illegal acts of sexual harassment than individuals with traditional gender beliefs. Their study also points to the special importance of merit beliefs: people who believe that they live in a just society tend to regard sexual harassment as neither illegal nor inappropriate in cases that are (in everyday perception) ambiguous.

Striebing's work climate and bullying studies show that a gender gap in the perception of the work climate and the experience of bullying narrows from the PhD level to group or institute leadership. The author interprets this observation as a filtering mechanism of the science system. His results suggest that the "successful" women and men who hold scientific leadership positions perceive and evaluate their work environment differently than early career researchers and – as a conjecture – may have limited empathy for problems of their employees due to this different perception.

Vandeveldel-Rougale and Guerrero Morales' case studies demonstrate the high complexity of bullying constellations. They argue that management ideology and practices force individuals who perceive themselves to be affected by bullying or discrimination into a formalized discourse. They highlight that what a person complains about and how they do so is not only essential for perceiving

conflict dynamics but also for how managers and research management perceive and evaluate the person, and that it can influence the likelihood of success of a complaint:

[...] even in organizations where policies to guarantee dignity and respect have been adopted, showing one's hurt to managers or human resources department is not sufficient so that steps would be taken to ensure a saner working atmosphere; it can even be detrimental to the person showing his/her vulnerability. (Vandeveldede-Rougale and Guerrero Morales in this collection)

The two authors also highlight that it can be problematic to apply seemingly rational approaches (e.g., measures to reduce discrimination and strengthen reconcilability) to issues that primarily have an emotional impact on those involved. For example, a person's perceived work-life balance is not only influenced by organizational factors such as the range of flexible working time models and workload, and not only by cognitive-psychological factors such as a person's ability to cope with stress or the pace at which a person works, but also by situational aspects such as individual career prospects or the management style, or societal aspects such as traditional views on parenting or care. If the individual work-life balance is nevertheless not right in an organization with comprehensive reconciliation offerings, it is therefore not necessarily the individual who is "defective," but rather the broader social context must also be taken into account.

The contributions of Kmec et al. and Vandeveldede-Rougale and Guerrero Morales imply the strong importance of patience and reflexivity – or "attentive listening" – in academic leadership. Thus, on the one hand, leaders and research managers are required to reconcile the different interests and personalities of individual team members and – in cases of conflict – weigh the perspectives of all stakeholders, including both co-workers and organizational goals. In doing so, it is important that academic leaders and research managers not only obtain a comprehensive picture – i.e., take all perspectives into account – but they also need a detailed picture, and they should perceive employees in their entirety as the people they are, with their multiple overlaps of status, character or social background. In doing so, evaluating leaders and research managers must also be aware of the relativity of their own perspective: Why might I find one person in a conflict more sympathetic than another or be better able to understand their perspective?

The article by Kmec et al. also shows the importance of drawing clear boundaries for misconduct in the workplace and sensitizing management personnel to this. Only in this way can clear decisions be made – even in "gray areas" – concerning what is judged to be appropriate or inappropriate, and managers must be supported in setting an example of the conduct desired in the workplace. In this context, with reference to their case study at the University of Wisconsin-Madison, Sheridan et al. state that most academic leaders and supervisors had no knowledge of how to deal with misconduct in general. They

recommend that universities should essentially develop a process and disciplinary measures for this.

Lesson 3: The System Can Tend to Individualize and Normalize Discrimination

Just because a problem is not visible, this does not mean it is not there: in their case study of a German university, Pantelmann and Wälty form a diagnosis that could certainly be extended to other types of organizations:

The university approach to the problem [of sexual violence] paints a picture of sexual harassment as an individual (women's) problem for which individual solutions must be found. Acts of harassment and violence are normalized, minimized, and dismissed by patriarchal gender norms and power relations [...] as well as by complex and uneven systems of loyalty and hierarchy [...]. (Pantelmann and Wälty in this collection)

By the university approach, the authors mean the interplay of patriarchal institutions (see lesson 1), the self-image of a non-discriminatory, neutral and enlightened academy, combined with market-oriented organizational and management structures (e.g., performance evaluation, dependency and competition situations reinforced by fixed-term employment relationships, competition for external funding).

The authors note – similar to Vandeveldt-Rougale and Guerrero Morales (see lesson 2) – that there seems to be a contradiction between the rational world of science and experiences of discrimination, harassment, and bullying that primarily take place on an emotional level. The latter are seen as remote from science and more societal in nature. On the part of research managers, this led to a failure to accept their (co-)responsibility for the campus as part of society and a good working atmosphere to the necessary extent, as well as combatting social misconduct and systemic discrimination, even if it remained below a threshold punishable by criminal or labor law.

From these considerations, it can be concluded that in most research organizations an institutional commitment to responsibility for a good research culture and combating discriminatory behavior and structures (as well as other forms of social misconduct) is an essential milestone. Often reviled as “paper tigers,” in this sense codes of conduct are important markers of the way forward and institutional self-assurances that can then have an indirect impact on an organization's discrimination policies. However, due to the tendency to normalize, relativize, and downplay discrimination as described by Wälty and Pantelmann, one or the other skeptical leader must be convinced that the formulation of a formal institutional commitment against discrimination is desirable (but not sufficient *per se*). In this regard, Sheridan et al. emphasize the added value of employee surveys, not least to counter skeptics of the need for anti-discrimination measures with data.

Lesson 4: How Identity Characteristics Shape Conflicts and Conflict Perceptions Is Difficult to Predict and Strongly Depends on Situational Circumstances (in Individual Cases)

In particular, the contribution of Vandavelde-Rougale and Guerrero Morales conveys how the multiple socio-demographic characteristics of individuals involved in conflict can shape conflicts and conflict dynamics. Identity categories such as gender, class, nation or race can be intertwined with different power positions. These identity-related power positions may be the starting point of conflicts, and they can be mobilized by participants in conflicts to place themselves in a stronger position (e.g., as part of the search for allies or to normatively underpin their own position), and they also shape the way in which third parties (such as leaders and research managers) perceive and interpret a conflict.

Accordingly, Sheridan et al. highlight that in practice they have found that individuals who receive and process complaints against social misconduct must be well trained in implicit/explicit bias and discrimination. Accordingly, there is a possibility that the view of persons making a report against social misconduct is biased. Thus, the reported person's behaviors would sometimes be interpreted depending on their gender, sexual orientation, race, or other socio-demographic factors.

Striebing's paper builds on this consideration and explores whether a person's gender is related to whether that person perceives one or a series of negative experiences as bullying or sexual discrimination. In practice, it is possible for individuals who complain to a leader or other entity about misconduct or discrimination to be (implicitly) confronted with accusations of being too sensitive (Hinze, 2004). A reference to the identity of the reporting individuals then functions as an easy legitimation for leaders and research managers to justify doing nothing or decide and act along their sympathies and (maybe biased) intuition.

Striebing concludes that the relationship between experience(s) of negative acts in the workplace and their assessment as bullying or sexual discrimination is indeed influenced by the gender of the person concerned. However, the pattern of this correlation – i.e. which specific negative acts are more often seen as “transgressive” by women or men – is so complex and weak in its entirety that a practical effect is questionable.

As a result of these considerations, leaders and research managers should be sensitized to perceive and deal with the identitarian dimension of workplace conflicts and reflect their own positioning appropriately. At the same time, leaders and research managers should be sensitized to be attentive and critical whenever a person's credibility is placed in the context of his/her socio-demographic characteristics.

Lesson 5: Measures Aimed at Very General Groups of People Waste Financial and Personnel Resources

Often academic support programs target very open groups of people, such as “the women,” “the students with an immigrant background,” or “the working-class

children.” However, this does not sufficiently take into account the fact that people have a variety of identities and balance them with each other.

The studies by Gewinner, Nguyen et al., Striebing and Sheridan et al. show that – for example – women are not fundamentally less able than men to compete academically and in the working environment, experience a qualitatively poorer working environment or misconduct more frequently. Moreover, women might perceive programs addressing women as discriminatory by themselves, since they subtly and unconsciously label them as less productive, thus manifesting the gender or national differences. Even women in a conservative male breadwinner partnership who take on the main responsibility of raising children in their partnership are not necessarily at a disadvantage if – for example – they are supported by their (in-)parents, as Nguyen et al. show. Therefore, it is necessary to pay attention to gender aspects in organizing the most suitable form of support programs such as training courses for female researchers. Striebing also shows for the German Max Planck Society that self-perceptions of bullying experiences are more frequent – for example – among male social scientists than among women in the STEM disciplines. In Sheridan et al., among the group of women, women of color and those with disabilities most frequently report experiences of hostile and intimidating behavior in the workplace, and in the group of men, gay men and those with disabilities.

Research management should apply an intersectional perspective⁸ when analyzing the need for organizational support measures and conceptualizing these measures. Vulnerable target groups and their needs should be defined and analyzed as precisely as possible. For example, if a measure is to be developed to increase the proportion of women, it should be asked in as much detail as possible which women can benefit from the measure and under which circumstances, as well as which ones cannot. If a measure is to be developed to prevent, e.g., sexism or racism, it should be asked which groups of people are to be protected from which groups of people in particular.

Lesson 6: It Is a Long Way from Raising Awareness through Trainings to Factual Effects on the Incidence of Discrimination Experiences

Sheridan et al. show in their study that short-term effects of anti-discrimination measures such as training or information campaigns cannot be expected. Based on the authors’ data, it can be surmised that such measures can immediately and quite persistently increase sensitivity to discriminatory and inappropriate behavior in the workplace and knowledge about how to deal with it, but that there are pitfalls for a long-term effect on reported cases of social misconduct in the workplace (see also [Chang et al., 2019](#)). The authors conclude: “We have found supplemental education and resources are necessary to empower individuals to interrupt

⁸For us, this means considering the complexity of identities and that, e.g., two positive linear effects do not necessarily add up to each other. It also means taking into account “power domains” and “power vectors” (Bilge, 2013).

HIB [hostile and intimidating behavior] in their work environments” (Sheridan et al. in this collection).

It also seems conceivable that local efforts to promote diversity in academia may also be undermined by developments at the regional or national level. For example, Sheridan et al. emphasize a more adversarial political and social climate under Donald Trump’s presidency in the United States. They speculate that this overall climate change might provide a possible explanation for why counterintuitively LGBT individuals were the only ones among the groups of individuals studied to even report an increase in experiences of misconduct in the academic workplace during the study period.

Steuer-Dankert and Leicht-Scholten also highlight the challenges of a multi-level perspective in diversity management. In doing so, they adopt a holistic perspective by analyzing the framework conditions of the German science system and reflecting on the different influencing factors. They link this perspective to a systems theory approach, which highlights the complexity of key positions and emphasizes the need to develop measures that address the specific framework conditions of the respective organization. Using the example of a complex research organization with several management levels – i.e., the institute and network level or the chair and university management level as well as institute-specific cultures – Steuer-Dankert and Leicht-Scholten identify the general challenge in the fact that the diversity climate experienced by the research teams is ultimately a function of the diversity management of the different levels. The authors therefore point to the importance of a common diversity strategy that is co-formulated and supported by all levels of an organizational network and fits the needs of the respective organizational levels. Steuer-Dankert and Leicht-Scholten emphasize the potential of academic leaders as multipliers for establishing an open diversity belief and climate. In their case study of a large German research association, Steuer-Dankert and Leicht-Scholten found that the leadership style attributed to management and the leadership style that they aspired to themselves were closely linked. The authors see these effects of homosocial reproduction as an explanation for this ideational similarity between managers (managers hire and promote people if they feel connected to them due to perceived similarities) and the role model effect of top managers whose style is adopted in practice by team members. Linked to the examined perception of diversity, Steuer-Dankert and Leicht-Scholten also see a direct effect of leadership behavior in the diversity management context on the next generation of scientists. In order to counteract these effects in the long term, they recommend a stronger link between diversity management and the change management approach, which at the same time underpins the long-term nature of corresponding measures.

We Can only go Ahead

Within the framework of the texts published in this collection, not only the extent of discrimination in research organizations was measured and described, but often implicit or direct criticism of established structures was also voiced. The main object of criticism was the effects of “neoliberalization” of universities (Block,

Gray, and Holborow, 2012; Hodgins and McNamara 2021) and “bureaucratization” and “corporatization” of research administration (Sørensen and Traweek, 2021), and in particular the role of academic leaders, research managers as well as representatives and officers for the concerns of the employees. The critique collected here highlights that restructuring the research system does not necessarily lead to a rationalization of personnel processes and career paths. Moreover, academic leaders and research managers are also by no means neutrally administering, measuring, evaluating, and deciding entities, but rather these are embedded in and emerged from the very research system to whose rationalization they are supposed to contribute.

Finally, it should be emphasized once again that we do not believe that the “old research system” – in which research organizations hardly conducted any performance evaluations, academic leaders had more discretion, and third-party funding was not awarded in open competition – could have integrated or managed diversity better. We welcome the increasing reduction of power imbalances in the scientific workforce and see major potential in the professionalization of diversity management and the handling of experiences of discrimination in research institutions, especially in the newly-created professional field of research managers (WR, 2018).

The fact that we increasingly talk about and problematize diversity and discrimination in research organizations can also be seen as a positive sign. The idea of the “integration paradox” (Mafaalani, 2018) highlights that equal treatment of social groups is only demanded when a group and society (or an organization) have become aware that the respective group is to be treated equally. In this sense, it remains to be hoped for the future that conflicts and disputes – as an indicator of an increased awareness for discrimination processes – around the diverse socio-demographic character of the scientific workforce will continue to increase in the future.

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