UNDERSTANDING BARRIERS TO WORKPLACE EQUALITY: A FOCUS ON THE TARGET'S PERSPECTIVE

EDITED BY: Michelle K. Ryan, Christopher T. Begeny, Renata Bongiorno, Teri Kirby and Thekla Morgenroth
PUBLISHED IN: Frontiers in Psychology

frontiers Research Topics

frontiers

ISSN 1664-8714
ISBN 978-2-88963-927-4
DOI 10.3389/978-2-88963-927-4

About Frontiers

Frontiers is more than just an open-access publisher of scholarly articles: it is a pioneering approach to the world of academia, radically improving the way scholarly research is managed. The grand vision of Frontiers is a world where all people have an equal opportunity to seek, share and generate knowledge. Frontiers provides immediate and permanent online open access to all its publications, but this alone is not enough to realize our grand goals.

Frontiers Journal Series

The Frontiers Journal Series is a multi-tier and interdisciplinary set of open-access, online journals, promising a paradigm shift from the current review, selection and dissemination processes in academic publishing. All Frontiers journals are driven by researchers for researchers; therefore, they constitute a service to the scholarly community. At the same time, the Frontiers Journal Series operates on a revolutionary invention, the tiered publishing system, initially addressing specific communities of scholars, and gradually climbing up to broader public understanding, thus serving the interests of the lay society, too.

Dedication to Quality

Each Frontiers article is a landmark of the highest quality, thanks to genuinely collaborative interactions between authors and review editors, who include some of the world's best academicians. Research must be certified by peers before entering a stream of knowledge that may eventually reach the public - and shape society; therefore, Frontiers only applies the most rigorous and unbiased reviews.
Frontiers revolutionizes research publishing by freely delivering the most outstanding research, evaluated with no bias from both the academic and social point of view. By applying the most advanced information technologies, Frontiers is catapulting scholarly publishing into a new generation.

What are Frontiers Research Topics?

Frontiers Research Topics are very popular trademarks of the Frontiers Journals Series: they are collections of at least ten articles, all centered on a particular subject. With their unique mix of varied contributions from Original Research to Review Articles, Frontiers Research Topics unify the most influential researchers, the latest key findings and historical advances in a hot research area! Find out more on how to host your own Frontiers Research Topic or contribute to one as an author by contacting the Frontiers Editorial Office: researchtopics@frontiersin.org

UNDERSTANDING BARRIERS TO WORKPLACE EQUALITY: A FOCUS ON THE TARGET'S PERSPECTIVE

Topic Editors:
Michelle K. Ryan, University of Exeter, United Kingdom
Christopher T. Begeny, University of Exeter, United Kingdom
Renata Bongiorno, University of Exeter, United Kingdom
Teri Kirby, University of Exeter, United Kingdom
Thekla Morgenroth, University of Exeter, United Kingdom

Citation: Ryan, M. K., Begeny, C. T., Bongiorno, R., Kirby, T., Morgenroth, T., eds. (2020). Understanding Barriers to Workplace Equality: A Focus on the Target's Perspective. Lausanne: Frontiers Media SA. doi: 10.3389/978-2-88963-927-4

Table of Contents

04 ***Editorial: Understanding Barriers to Workplace Equality: A Focus on the Target's Perspective***
Michelle K. Ryan, Christopher T. Begeny, Renata Bongiorno, Teri A. Kirby and Thekla Morgenroth

07 ***The Impact of Workplace Health Promotion Programs Emphasizing Individual Responsibility on Weight Stigma and Discrimination***
Susanne Täuber, Laetitia B. Mulder and Stuart W. Flint

25 ***Whose Issue is it Anyway? The Effects of Leader Gender and Equality Message Framing on Men's and Women's Mobilization Toward Workplace Gender Equality***
Stephanie L. Hardacre and Emina Subašic

40 ***Double Trouble: How Being Outnumbered and Negatively Stereotyped Threatens Career Outcomes of Women in STEM***
Ruth van Veelen, Belle Derks and Maaike Dorine Endedijk

58 ***Understanding Diversity Ideologies From the Target's Perspective: A Review and Future Directions***
Seval Gündemir, Ashley E. Martin and Astrid C. Homan

72 ***"It's Not Always Possible to Live Your Life Openly or Honestly in the Same Way" – Workplace Inclusion of Lesbian and Gay Humanitarian Aid Workers in Doctors Without Borders***
Julian M. Rengers, Liesbet Heyse, Sabine Otten and Rafael P. M. Wittek

89 ***Construction at Work: Multiple Identities Scaffold Professional Identity Development in Academia***
Sarah V. Bentley, Kim Peters, S. Alexander Haslam and Katharine H. Greenaway

102 ***Looking Beyond Our Similarities: How Perceived (In)Visible Dissimilarity Relates to Feelings of Inclusion at Work***
Onur Şahin, Jojanneke van der Toorn, Wiebren S. Jansen, Edwin J. Boezeman and Naomi Ellemers

115 ***Endorsing and Reinforcing Gender and Age Stereotypes: The Negative Effect on Self-Rated Leadership Potential for Women and Older Workers***
Fatima Tresh, Ben Steeden, Georgina Randsley de Moura, Ana C. Leite, Hannah J. Swift and Abigail Player

135 ***Gender Differences in How Leaders Determine Succession Potential: The Role of Interpersonal Fit With Followers***
Floor Rink, Janka I. Stoker, Michelle K. Ryan, Niklas K. Steffens and Anne Nederveen Pieterse

149 ***A Leak in the Academic Pipeline: Identity and Health Among Postdoctoral Women***
Renate Ysseldyk, Katharine H. Greenaway, Elena Hassinger, Sarah Zutrauen, Jana Lintz, Maya P. Bhatia, Margaret Frye, Else Starkenburg and Vera Tai

166 ***Coping With Stigma in the Workplace: Understanding the Role of Threat Regulation, Supportive Factors, and Potential Hidden Costs***
Colette Van Laar, Loes Meeussen, Jenny Veldman, Sanne Van Grootel, Naomi Sterk and Catho Jacobs

frontiers in Psychology

EDITORIAL
published: 17 June 2020
doi: 10.3389/fpsyg.2020.01279

Editorial: Understanding Barriers to Workplace Equality: A Focus on the Target's Perspective

Michelle K. Ryan[1,2*†], *Christopher T. Begeny*[1†], *Renata Bongiorno*[1†], *Teri A. Kirby*[1†] *and Thekla Morgenroth*[1†]

[1] *Department of Psychology, University of Exeter, Exeter, United Kingdom,* [2] *Faculty of Economics and Business, University of Groningen, Groningen, Netherlands*

Keywords: gender equality, workplace inequality, discrimination, work discrimination, intersectionality

Editorial on the Research Topic

Understanding Barriers to Workplace Equality: A Focus on the Target's Perspective

The workplace continues to be the site of many group-based inequalities, including unequal rates of participation (e.g., Acker, 2006), biased rewards structures such as promotions and pay gaps (e.g., Metcalf, 2009), and discriminatory treatment on a day-to-day basis (e.g., Reskin, 2000). Barriers to achieving workplace equality can be overt or subtle; direct or indirect; reside in the workplace itself, or within society more broadly; and affect people from a range of social groups. Existing research has tended to focus on inequality based on gender (e.g., Barreto et al., 2009; Heilman, 2012) or people's racial or ethnic background (e.g., Sørensen, 2004). But there are also substantive bodies of literature examining inequality faced by LGBTQ+ individuals (e.g., Ragins and Cornwell, 2001; Hebl et al., 2002), older or younger employees (Diekman and Hirnisey, 2007), pregnant women and parents (e.g., Morgenroth and Heilman, 2017; Gloor et al., 2018), those with disabilities (McLaughlin et al., 2004), and those at the intersection of these and other identities (e.g., Ortiz and Roscigno, 2009; Holvino, 2010; Tatli and Özbilgin, 2012).

With this Research Topic we have two key aims: (1) to gain a better understanding of workplace inequality by defining it in a way that is inclusive of all potential forms of group-based discrimination; and (2) to focus on the target's perspective: those who are subjected to discriminatory treatment in the workplace, rather than on those who perpetuate inequality.

We have brought together 11 papers that address these key aims. We deliberately include research that examines a range of inequalities, including those based on gender, race, age, LGBTQ+ identities, weight stigma, and their intersections. In doing so, these papers cover a variety of workplaces, including those of PhD students and post-doctoral researchers in academia; humanitarian aid workers; and those working in STEM fields. The papers also examine issues of leadership succession and perceptions of leadership potential; mental health and health programs in the workplace; and mobilizing support for collective action. We have chosen authors that take a number of different approaches to researching inequality, including comprehensive reviews of the literature as well as empirical work encompassing qualitative interviews, experimental studies, and field studies.

We have two papers that examine issues of inequality within an academic context. Ysseldyk et al. focus on the mental health of women at the post-doctoral stage of their careers. Using a mixed methods approach they explore how identity development and lack of control contribute to the loss of women from academia. Their findings demonstrate the stress and tenuousness experienced by post-doctoral women and also highlight the potential protective factor of disciplinary identity. Looking at the start of the academic career pipeline, with a focus on PhD students, Bentley et al. examine the psychological mechanisms underlying identity construction and how it may contribute

OPEN ACCESS

Edited and reviewed by:
Susanne Braun,
Durham University, United Kingdom

****Correspondence:***
Michelle K. Ryan
m.ryan@exeter.ac.uk

† These authors have contributed equally to this work

Specialty section:
This article was submitted to Organizational Psychology, a section of the journal Frontiers in Psychology

Received: *10 April 2020*
Accepted: *15 May 2020*
Published: *17 June 2020*

Citation:
Ryan MK, Begeny CT, Bongiorno R, Kirby TA and Morgenroth T (2020) Editorial: Understanding Barriers to Workplace Equality: A Focus on the Target's Perspective. Front. Psychol. 11:1279. doi: 10.3389/fpsyg.2020.01279

to inequality in career outcomes. They demonstrate that the perceived compatibility of one's identity with those of leading members of the profession can play an important role in on-going professional identity construction and career success.

Further building on issues of fit, two papers examine how perceptions of fit influence leadership processes more specifically. With a focus on the persistence of the "old boys club," Rink et al. examine how interpersonal fit influences leaders' perceptions of their followers' potential as successors. Across two studies their results demonstrate that while male leaders ratings of followers' potential as successors were positively related to interpersonal fit (the old boys club), these relationships were absent for female leaders, suggesting there is not a comparable "old girls club." Tresh et al. examine the role of gender and age stereotypes and their effect on individuals' job-related perceptions. Across three studies, results suggest that both gender and age stereotypes, and their incongruency with job roles, affect perceptions of: (a) leadership potential; and (b) job fit, and job appeal. This was particularly the case for older workers and for women. The paper also clearly demonstrates the importance of intersectional identities.

We include two papers that look specifically at issues of inclusion. Sahin et al. make an important distinction between employees' perceptions of deep- and surface-level similarity. They found that perceptions of deep-level dissimilarity to others in the workplace was associated with lower felt inclusion, while surface-level similarity did not affect felt inclusion. Rengers et al. examine perceptions of workplace inclusion in a field study of lesbian and gay humanitarian aid workers. Their findings revealed that perceptions of authenticity, but not belonging, are affected by the inclusiveness practices of their organization and by their colleagues' and supervisors' attitudes and behaviors. The authors construct a typology of three groups: conscious first-missioners, authentic realists, and idealistic activists.

In another field study, van Veelen et al. examine the effects of numerical and normative male dominance in STEM. They examine the impacts of women in STEM fields being outnumbered and negatively stereotyped. This "double trouble" predicted the highest levels of gender identity threat for women, which in turn, negatively impacted on their work engagement and career confidence. This was particularly the case for women with high levels of gender identity. In their theoretical paper, van Laar et al. further examine negative stereotypes across multiple groups. Using insights from research into stigma, social identity, and self-regulation, they provide a model for how individuals are affected by, and how they regulate, negative stereotypes in the workplace. They highlight four key processes: (1) the subtle triggers of workplace identity threat; (2) how individuals can cope with these threats; (3) factors that mitigate threat and affect self-regulation; and (4) the hidden costs of self-regulation.

We include two papers that focus on workplace approaches to promoting equality. Gündemir et al. provide a review of how diversity ideologies may affect self-perceptions and workplace experiences. They demonstrate that for members of racial-ethnic minority groups, ideologies that are diversity aware (e.g., multiculturalism) are more beneficial than ideologies that are diversity blind (e.g., colorblindness). In contrast, for women, gender blindness is associated with more positive outcomes than gender awareness. Täuber et al. examine potential downsides of workplace health promotion programs. Across three studies they demonstrate that health promotion programs can increase attributions of weight controllability, elicit weight stigma, and induce weight-based discrimination in workplace promotion decisions. Thus, workplace health promotion programs may inadvertently promote weight stigma and weight-based discrimination, particularly when they emphasize notions of individual responsibility.

Finally, Hardacre and Subašić investigate ways that leaders can mobilize support for gender equality. Across two experiments, they demonstrate that evoking a common cause increases women's collective action intentions and that male leaders invoke a higher sense of common cause and collective action intentions for both men and women, regardless of framing.

We hope that by bringing together research on the different ways that workplace inequality is manifested—across a range of different groups and social categories, and their intersection—we can shed greater light on this issue. From the papers included in this Research Topic, it is clear that there can be important similarities and differences in the psychological processes that are relevant to understanding how discrimination will impact on different targets. Ultimately, we hope this examination can lead toward interventions that are more nuanced and better able to combat inequalities in the workplace and in society more broadly.

AUTHOR CONTRIBUTIONS

All authors listed have made a substantial, direct and intellectual contribution to the work, and approved it for publication.

FUNDING

This work was funded, in part, by a European Research Council Consolidator Grant awarded to the MR (725128).

ACKNOWLEDGMENTS

We would like to thank all of the contributors of the special issue and those who provided thoughtful and engaging reviews of these papers.

REFERENCES

Acker, J. (2006). Inequality regimes: Gender, class, and race in organizations. *Gender Soci.* 20, 441–464. doi: 10.1177/0891243206289499

Barreto, M., Ryan, M. K., and Schmitt, M. (Eds.). (2009). *The Glass Ceiling in the 21st Century: Understanding Barriers to Gender Equality, APA Division 35 Book Series* (American Psychological Association). doi: 10.1037/11863-000

Diekman, A. B., and Hirnisey, L. (2007). The effect of context on the silver ceiling: a role congruity perspective on prejudiced responses. *Pers. Soc. Psychol. Bull.* 33, 1353–66. doi: 10.1177/0146167207303019

Gloor, J. L., Li, X., Lim, S., and Feierabend, A. (2018). An inconvenient truth? Interpersonal and career consequences of "maybe baby" expectations. *J. Vocational Behav.* 104, 44–58. doi: 10.1016/j.jvb.2017.10.001

Hebl, M. R., Foster, J. B., Mannix, L. M., and Dovidio, J. F. (2002). Formal and interpersonal discrimination: a field study of bias toward homosexual applicants. *Personal. Soc. Psychol. Bull.* 28, 815–825. doi: 10.1177/0146167202289010

Heilman, M. E. (2012). Gender stereotypes and workplace bias. *Res. Org. Behav.* 32, 113–135. doi: 10.1016/j.riob.2012.11.003

Holvino, E. (2010). Intersections: the simultaneity of race, gender and class in organization studies. *Gender, Work Org.* 17, 248–277. doi: 10.1111/j.1468-0432.2008.00400.x

McLaughlin, M. E., Bell, M. P., and Stringer, D. Y. (2004). Stigma and acceptance of persons with disabilities: understudied aspects of workforce diversity. *Group Org. Manage.* 29, 302–333. doi: 10.1177/1059601103257410

Metcalf, H. (2009). *Pay Gaps across the Equality Strands: A Review*. Manchester: Equality and Human Rights Commission.

Morgenroth, T., and Heilman, M. E. (2017). Should I stay or should I go? Implications of maternity leave choice for perceptions of working mothers. *J. Exp. Soc. Psychol.* 72, 53–56. doi: 10.1016/j.jesp.2017.04.008

Ortiz, S. Y., and Roscigno, V. J. (2009). Discrimination, women, and work: processes and variations by race and class. *Soc. Q.* 50, 336–359. doi: 10.1111/j.1533-8525.2009.01143.x

Ragins, B. R., and Cornwell, J. M. (2001). Pink triangles: antecedents and consequences of perceived workplace discrimination against gay and lesbian employees. *J. Appl. Psychol.* 86, 1244–1261. doi: 10.1037/0021-9010.86.6.1244

Reskin, B. F. (2000). The proximate causes of employment discrimination. *Contemp. Soc.* 29, 319–328. doi: 10.2307/2654387

Sørensen, J. B. (2004). The organizational demography of racial employment segregation. *Am. J. Soc.* 110, 626–671. doi: 10.1086/426464

Tatli, A., and Özbilgin, M. F. (2012). An emic approach to intersectional study of diversity at work: a Bourdieuan Framing. *Int. J. Manage. Rev.* 14, 180–200. doi: 10.1111/j.1468-2370.2011.00326.x

Conflict of Interest: The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

frontiers in Psychology

ORIGINAL RESEARCH
published: 19 November 2018
doi: 10.3389/fpsyg.2018.02206

The Impact of Workplace Health Promotion Programs Emphasizing Individual Responsibility on Weight Stigma and Discrimination

Susanne Täuber[1*†], *Laetitia B. Mulder*[1†] *and Stuart W. Flint*[2]

[1] *Department of Human Resource Management and Organizational Behavior, University of Groningen, Groningen, Netherlands,* [2] *School of Sport, Leeds Beckett University, Leeds, United Kingdom*

Over time, there has been a steady increase of workplace health promotion programs that aim to promote employees' health and fitness. Previous research has focused on such program's effectiveness, cost-savings, and barriers to engaging in workplace health promotion. The present research focuses on a downside of workplace health promotion programs that to date has not been examined before, namely the possibility that they, due to a focus on individual responsibility for one's health, inadvertently facilitate stigmatization and discrimination of people with overweight in the workplace. Study 1 shows that the presence of workplace health promotion programs is associated with increased attributions of weight controllability. Study 2 experimentally demonstrates that workplace health promotion programs emphasizing individual rather than organizational responsibility elicit weight stigma. Study 3, which was pre-registered, showed that workplace health promotion programs emphasizing individual responsibility induced weight-based discrimination in the context of promotion decisions in the workplace. Moreover, focusing on people with obesity who frequently experience weight stigma and discrimination, Study 3 showed that workplace health promotion programs highlighting individual responsibility induced employees with obesity to feel individually responsible for their health, but at the same time made them perceive weight as *less* controllable. Together, our research identifies workplace health promotion programs as potent catalysts of weight stigma and weight-based discrimination, especially when they emphasize individual responsibility for health outcomes. As such, we offer valuable insights for organizations who aim to design and implement workplace health promotion programs in an inclusive, non-discriminatory way that benefits all employees.

Keywords: workplace health promotion programs, attribution of controllability, responsibility, weight stigma, weight-based discrimination, obesity

OPEN ACCESS

Edited by:
Teri Kirby,
University of Exeter, United Kingdom

Reviewed by:
Crystal L. Hoyt,
University of Richmond, United States
Mary S. Himmelstein,
University of Connecticut, United States

****Correspondence:***
Susanne Täuber
s.tauber@rug.nl

† These authors have contributed equally to this work

Specialty section:
This article was submitted to Organizational Psychology, a section of the journal Frontiers in Psychology

Received: *17 July 2018*
Accepted: *24 October 2018*
Published: *19 November 2018*

Citation:
Täuber S, Mulder LB and Flint SW (2018) The Impact of Workplace Health Promotion Programs Emphasizing Individual Responsibility on Weight Stigma and Discrimination. Front. Psychol. 9:2206. doi: 10.3389/fpsyg.2018.02206

INTRODUCTION

Decades ago, employees worked in environments where smoking was normal and yoga or going for a run during office hours was out of the question. Back then, employers would not have thought about encouraging employees to eat less meat, exercise regularly, and reduce cigarette and alcohol consumption. However, over the course of the last 30 years the interference of employers with

their employees' health and lifestyle gained support and is now largely considered appropriate (Goetzel et al., 2014). This is partly due to the aging workforce, which emphasizes the necessity of sustainable employment and partly due to improved insights into the contribution of lifestyle to health outcomes. Consequently, and although the types of intervention and design vary, workplace health promotion programs (WHPP) have become common and accepted (Walters, (n.d.); Mattke et al., 2013). Indeed, the National Institute for Clinical Excellence (2018) state that "All workplaces, particularly large organizations such as the NHS and local authorities should address the prevention and management of obesity, because of the considerable impact on the health of the workforce and associated costs to industry" (p. 3). The present research challenges the assumption that such programs are unanimously beneficial for all parties. Specifically, many WHPP focus on supporting employees to "manage their weight" in response to the current agenda relating to obesity (Public health England, 2018). We propose and test that such framing of responsibility within WHPP forms a potent foundation for weight stigma and discrimination in the workplace. Since experiences of stigma are associated with decreased mental and physical health (e.g., Puhl and Suh, 2015) and with an associated increase in healthcare costs (e.g., Osumili et al., 2016), WHPP might form a cause of what they aim to cure. The current investigation tests the influence of both the presence and focus (individual vs. organizational responsibility) of WHPP on weight stigma and discrimination.

Workplace Health Promotion and Weight Stigma

Healthy employees are the backbone of sustainable employment and productivity (e.g., World Health Report; World Health Organisation, 2002). Given that most people spend two-thirds of their waking hours at work, the workplace represents a logical setting to deliver health and wellbeing interventions (Frase and Gornick, 2012). In alignment, the World Health Organisation (2010) suggested that in the twenty-first century, the workplace should form the primary setting for health promotion. Not surprisingly, therefore, the last thirty years have seen a steady increase in WHPP (Goetzel et al., 2014). According to the 2012 Employer Health Benefits Survey, 94% of large and 63% of small employers offered a WHPP (cf. Chen et al., 2015). While WHPP vary widely in what they target (e.g., disease prevention, employee wellbeing, or lifestyle and health education; Chen et al., 2015), the expectation is that they will benefit employers as well as employees. An area of particular focus for WHPP currently is employees' weight status, and in particular the reduction of weight and the increase of physical activity (e.g., Quintiliani et al., 2007; Schröer et al., 2013). This focus is in response to the high and increasing prevalence of overweight and obesity and associated non-communicable disease across the world (World Health Organisation, 2017), and an appreciation of the influence of workplace issues such as sedentary behavior, prolonged sitting time, and unhealthy food and drink consumption (Schröer et al., 2013). This is reflected in the WHO's Global Plan of Action on Worker's Health 2008-2017 as cited by Quintiliani et al. (2007), pp. 7–8: "Health promotion and prevention of non-communicable diseases should be further stimulated in the workplace, in particular by advocating healthy diet and physical activity among workers, and promoting mental health at work..."

Whilst there are benefits to WHPP, we propose that the current focus on weight that emphasizes employees' responsibility can inadvertently elicit weight stigma. Weight stigma refers to negative attitudes toward a person because of their weight status. People with overweight or obesity are negatively stereotyped as being weak willed, lazy, unintelligent and gluttonous (Puhl and Brownell, 2001; Phelan et al., 2014). Indeed, although a link between prejudice and discrimination is not always evident, negative attitudes toward people with overweight and obesity have been associated with biased treatment (O'Brien et al., 2013). Weight-based discrimination has been reported across a range of settings and among people of all ages and backgrounds. For instance, Phelan et al. (2015) reviewed empirical evidence for obesity stigma in health care settings, noting that many health care providers hold strongly negative stereotypes about people with obesity. Aligning with this observation, weight stigma and discrimination have also been reported in settings that are critical for the prevention and treatment of obesity such as exercise (Schvey et al., 2017), and healthcare facilities (Raves et al., 2016). Relatedly, Tomiyama et al. (2015) found that, while implicit weight bias decreased, explicit weight bias increased between 2001 and 2013 among scientific researchers specializing in obesity and other obesity-related professionals.

Negative stereotypes about people with obesity also lead to discrimination in the workplace. For instance, suitability judgements of applicants in the hiring process or employees for promotion are lower for applicants with obesity (e.g., Flint et al., 2016), people with overweight or obesity, on average, earn less and are more often unemployed (Kim and von dem Knesebeck, 2018). Further, it has been shown that people with obesity are perceived as possessing less leadership qualities compared to normal weight counterparts (O'Brien et al., 2008; Flint and Snook, 2014). In addition, research has reported that employees with obesity have lower starting salaries, are assessed as being less qualified, and work longer hours than normal weight employees (Baum and Ford, 2004; Han et al., 2011). Not surprisingly, experiences of weight stigma and discrimination also may have serious adverse effects on mental health, including compromised psychosocial wellbeing, social isolation, healthcare avoidance, binge eating, body related shame and guilt, and weight gain and development of obesity (e.g., Puhl and Suh, 2015; Mensinger et al., 2018), which can contribute to sickness absence.

The above suggests that, while health promotion in the workplace is considered a prime tool in supporting employee health (e.g., World Health Organisation, 2010), the workplace also is a prime setting where weight stigma and discrimination is experienced (e.g., Roehling et al., 2007; Bartels and Nordstrom, 2013). With regards to WHPP, systematic reviews examining their impact on overweight and obesity (Anderson et al., 2009) and on increasing physical activity (Malik et al., 2014), report modest improvements or inconclusive results. Building on these insights and testing the idea that workplace health promotion can

be a mixed blessing, we propose that WHPP affect employees' attributions of how controllable weight is, thereby laying the foundation for weight stigma and discrimination. We expect this effect to be particularly pronounced for WHPP focusing on individual rather than organizational responsibility for health outcomes. Given that weight discrimination is a stressful experience with a host of negative outcomes on psychological and physical health (e.g., Quintiliani et al., 2007; Phelan et al., 2014, 2015), and even increasing mortality risk (Sutin et al., 2015), understanding the impact of WHPP on weight stigma and discrimination is important. In the sections below, we provide greater elaboration for our reasoning on the associations between WHPP, controllability and responsibility attributions, and weight stigma.

WHPP, Controllability and Responsibility Attributions, and Weight Stigma

The design and implementation of WHPP has implications for who is held responsible for employee health. Scholars note a shift in focus from occupational health protection to occupational health promotion, which involves an associated change in responsibility from employers to employees (Macdonald and Sanati, 2010). According to Attribution Theory (Weiner, 1985), how people respond to the negative outcomes of others depends predominantly on the (assumed) controllability of the outcome. A large body of research demonstrates that perceived controllability leads to greater blaming of people for negative outcomes (Weiner et al., 1988; Crandall and Martinez, 1996; Weiner, 2000). This is due to a strong link between perceived controllability and ascribed responsibility for negative outcomes (Mantler et al., 2003). This basic link has been shown for various outcomes such as blindness, heart disease, unemployment, AIDS, alcoholism, divorce and obesity (Weiner et al., 1988; Weiner, 1995).

While many studies show that people blame and stigmatize others held responsible for a negative outcome (Crandall and Martinez, 1996; Rudolph and Tscharaktschiew, 2014), recent research on beliefs about the changeability of attributes suggests a more complex relationship. Specifically, labeling obesity as a biologically driven disease on the one hand decreased anti-fat prejudice through decreasing blame (Burnette et al., 2017; Hoyt et al., 2017), but on the other hand, increased anti-fat prejudice through suggesting that people with obesity have an unchangeable essence. The associations between controllability, ascribed responsibility, weight-stigma and weight-based discrimination are thus complex and inconsistent. Understanding these associations is crucial as they directly affect public health policy and the design of health messages (Burnette et al., 2017; Hoyt et al., 2017). Our research contributes to the literature by examining these associations in the context of WHPP.

Indeed, scholars have warned that an ethical consideration highly relevant for WHPP is the risk of blaming the target (van Berkel et al., 2014). This risk is particularly salient regarding lifestyle-related topics and is thought to arise from the focus of most WHPP on the individual employee rather than on the nature of work and the organization itself (van Berkel et al., 2014, p. 2). Van Berkel et al. further concluded that WHPP would contribute to greater individualization of organizational problems, thereby eroding solidarity. Based on interviews with different stakeholder groups about occupational health, van Berkel et al. (2014) found that stakeholders differed in their view of risk factors in occupational health. Whilst employees and occupational physicians considered the job and working conditions as primary risk factors, employers considered employees' lifestyle decisions to be primary risk factors. Hence, employees construe health as the organization's responsibility, while employers construe health as the individual employee's responsibility. These differences align with the notion that, different from prevention, in health promotion the responsibility for health is more ambiguous (Macdonald and Sanati, 2010). However, because WHPP are generally set-up by employers rather than by employees, they will often be based on the perception that occupational health is largely the responsibility of employees (Meershoek et al., 2010).

This focus on employee responsibility can be manifest in the type of program organizations implement but also in the way a WHPP is communicated. Regarding the type of program, WHPP may contain policies that encourage employees to engage in healthy behaviors. For example, providing education about healthy choices regarding food and drinks or providing access to sport facilities. As such, the responsibility of organizations to provide a working environment that inherently evokes health and healthy behaviors (e.g., making the canteen 100% healthy, giving the staircase a more prominent place than the elevator), may be overlooked. With regard to the way the organization communicates a program, a WHPP may be framed in terms of employee or organizational responsibility. For example, organizations may communicate that healthy food in the canteen is meant to encourage employees to make healthy choices (which taps into employee responsibility of making healthy choices). By contrast, they could also communicate that healthy food offered in the canteen prevents employees from being seduced into unhealthy eating (which taps into the organization's responsibility of creating a health-promoting environment).

Overview articles reviewing WHPP that aimed at weight reduction specifically indeed list the above factors as parts of the reviewed programs (e.g., Schröer et al., 2013). Importantly, these authors also note that "The evaluated interventions were implemented at individual, organizational or combined level with a majority of interventions that were individually focused" (p. 9). We argue that a focus on employee responsibility will contribute to the belief that obesity is controllable. As controllability beliefs are associated with higher weight stigma (e.g., Teachman et al., 2003; Flint et al., 2017), such a focus can be expected to result in stigmatization and discrimination toward people with overweight or obesity (e.g., Crandall and Martinez, 1996; Crandall et al., 2001; Mantler et al., 2003).

The Present Research

Aiming to test the effects of WHPP on controllability, weight stigma and discrimination, we conducted three studies. As an initial test, Study 1 examined the impact of WHPP Presence

on controllability attributions for weight. Study 2 extended the first study's findings by experimentally varying WHPP Presence and WHPP Focus (emphasizing individual vs. organizational responsibility) and examining their impact on weight stigma. Study 3 (pre-registered) further extended this to weight-based discrimination in the context of promotion decisions, and the impact of WHPP Focus on weight bias internalization among employees with overweight and obesity in particular, thereby shedding light on the potential targets' perspective.

All three studies presented in this article were carried out in accordance with the recommendations of the Ethical Commission of the Behavioral Research Lab of the Faculty of Economics and Business (University of Groningen) with written informed consent from all subjects. All subjects gave written informed consent in accordance with the Declaration of Helsinki.

STUDY 1

As a first test of our ideas, we conducted a survey, measuring the presence of a WHPP in the organization that people are employed and controllability perceptions of overweight. We hypothesized that weight is perceived as more controllable when a WHPP is present as opposed to when it is absent (Hypothesis 1).

Methods

Participants and Procedure

After we instructed M-Turk to recruit 250 respondents, 255 M-Turk workers completed an online survey. Of these, 38% were from non-western countries. Considering that WHPP are more specific for Western countries and that, in non-western countries, due to a lower prevalence of overweight, there is likely a lower focus on weight in public discourse and WHPP, we decided to include respondents from North-America and Western Europe only. Respondents first answered control questions regarding their employment and size of their organization. We excluded 11% who did not work in an organization (but were self-employed or unemployed). This left a sample of 131 respondents (57 female; M_{age}= 35.2, SD_{age}= 9.24), which gave us a power of 0.95 for detecting medium effects of $r = 0.30$ in a one-sample correlation (for the size of our main finding, a correlation of 0.20, the power was 0.64). First, the presence of a WHPP was measured and control questions were asked about respondents' involvement with the WHPP and its implementation. Then, perceived controllability of a range of life events, among which health-related events, was measured.

Measurements

To assess the *presence of a health program*, the following question was asked, "At the organization where you work, is there a health program installed?" Possible answers were "*yes,*" "*no,*" and "*I don't know.*" The answers "no" and "I don't know" were collapsed, so that the value "1" stood for "WHPP present" ($N = 63$) and "0" for "not aware of a WHPP being present" ($N = 68$).

To assess *controllability of health*, respondents were presented with several life events and for each event were asked to indicate to what extent they thought it was under people's control or determined outside of a person's control. Answers were given in percentages, with 100% representing an event perceived to be completely within a person's control, and 0% representing an event perceived to be completely outside a person's control. In total, four health-related events were presented: "becoming overweight," "being overweight," "getting cancer," and "getting a burnout." Controllability of becoming overweight and being overweight were highly correlated ($r = 0.81$) and were therefore combined into one index representing the controllability of overweight. The health-related events were embedded in 12 filler events unrelated to health, such as "being unemployed," "having children," and "winning an Olympic medal." We included these filler items to examine whether the presence of a WHPP affects controllability attributions in general or affects controllability attributions of health-related outcomes specifically. The non-health related filler items were combined into one scale as a measure of controllability of non-health related life events ($\alpha = 0.79$). The events were presented in a randomized order.

Results

Table 1 provides descriptive statistics and correlations. WHPP presence was only significantly associated with perceptions of the controllability of overweight indicating that respondents who reported that a WHPP was present in their organization perceived overweight as more controllable ($r = 0.20$, $p = 0.02$, Cohen's $d = 0.41$). By contrast, WHPP presence was only marginally associated with perceived controllability of cancer ($r = 0.15$, $p = 0.09$, Cohen's $d = 0.30$) and of non-health events ($r = 0.16$, $p = 0.06$, Cohen's $d = 0.32$). It was unrelated to perceived controllability of burnout.

Upfront we had determined that, to test whether WHPP presence influenced controllability perceptions, we needed to control for alternative variables that could explain this relation, namely those variables that correlated both with WHPP presence and controllability perceptions. As shown by **Table 1**, WHPP presence was correlated with organization size, own use of WHPP and involvement in implementing the WHPP. While these variables could not explain the relation between WHPP presence and perceived controllability of overweight (as they did not correlate with perceptions of the controllability of overweight), they could explain the marginal relations between WHPP presence on the one hand and controllability perceptions of cancer and controllability perceptions of non-health events on the other hand. To test whether this was the case, we performed a univariate ANCOVA with the presence of a WHPP program as independent variable, perceptions of the controllability of cancer as the dependent variable, and own use and involvement in implementation as covariates. This showed no effect of presence of WHPP program, $F_{(1,129)} = 0.99$, $p = 0.32$, Cohen's $d = 0.18$; only the effect of involvement in the WHPP implementation (the more involved, the more cancer was perceived as controllable) was significant, $F_{(1,129)} = 5.85$, $p = 0.02$, Cohen's $d = 0.43$. An equivalent ANCOVA was performed on controllability perceptions of non-health events, revealing no effect of health program $F_{(1,127)} = 0.23$, $p = 0.63$, Cohen's $d = 0.002$. Again, only the effect of involvement in the HP implementation (the

TABLE 1 | Descriptive statistics and correlations for Study 1.

		M (SD)	1	2	3	4	5	6	7	8	9	10
Control variables	1. Gender (1 = female)	0.44 (0.50)	1.00									
	2. Age	35.2 (9.24)	−0.03	1.00								
	3. BMI		−0.15	0.27**	1.00							
	4. Size organization (9-point scale)	5.95 (2.16)	−0.12	0.16^{+}	0.08	1.00						
	5. Own use of Health Program	2.31 (1.29)	0.12	0.01	−0.12	0.06	1.00					
	6. Involvement in implementing HP	1.97 (1.30)	0.01	−0.22**	−0.20	−0.14	0.67**	1.00				
IV	7. Health program present (1 = yes)	0.48 (0.50)	0.05	0.08	0.03	0.25**	0.53**	0.30**	1.00			
DV's	8. Controllability overweight*	73.1 (22.6)	0.08	0.09	−0.11	0.02	0.06	−0.03	0.20*	1.00		
	9. Controllability burn-out*	57.8 (26.1)	0.10	0.14	0.01	−0.02	0.08	0.06	0.02	0.16	1.00	
	10. Controllability cancer*	24.3 (23.1)	0.04	−0.09	−0.01	0.12	0.17*	0.27**	0.15^{+}	0.10	0.17^{+}	1.00
	11. Controllability non-health events*	56.7 (15.0)	0.08	−0.15^{+}	−0.11	0.01	0.28**	0.31**	0.16^{+}	0.48**	0.43**	0.32**

*In percent (%). *$p < 0.05$, **$p < 0.01$.

more involved, the more non-health event were perceived as controllable) was significant, $F_{(1, 127)} = 4.33$, $p = 0.04$, Cohen's $d = 0.37$. Thus, the additional analyses demonstrated that the marginal effects of WHPP presence on controllability perceptions of cancer and non-health related life events disappeared when controlling for involvement in implementation and own use of the WHPP.

Overall, these results suggest that WHPP presence is only related to perceived controllability of *overweight* and that this cannot be explained by other variables as measured in this study,

Discussion

Findings show that the mere presence of a WHPP in organizations was associated with employees' perceptions that overweight is more controllable. This association was not evident for burnout, and the marginally significant relation between presence of a WHPP and controllability of cancer and non-health related events was fully explained by employees' own involvement in implementing a health program. Thus, the association between WHPP presence and health-related events was unique for weight. This supports Hypothesis 1 that weight is perceived as more controllable when a WHPP is present compared to when a WHPP is absent. Findings further suggest that the effect of WHPP presence is less pronounced for other health outcomes. One might speculate whether this effect is due to the visibility of a health outcome which has appeared to affect attributions of controllability and responsibility (e.g., Weiner et al., 1988). It may also be the case that, in line with our reasoning, most WHPP entail policies that are overweight-relevant and incorporate activities that tap into the controllability of weight. In sum, Study 1 provides initial evidence for the proposition that the mere presence of a WHPP affects employees' perceptions of the controllability of weight.

STUDY 2

Whilst the correlational patterns in Study 1 support the hypothesis that weight is perceived as more controllable when a WHPP is present compared to when it is absent, the relationship between WHPP and weight stigma was not examined. In addition, causal relationships were not established. In Study 2, we again included a measure of controllability perceptions. However, we specifically aimed to investigate the proposed causal effects of WHPP presence on *weight stigma*. We hypothesized that weight stigma would be higher when a WHPP is present than when a WHPP is absent (Hypothesis 2). Based on our reasoning that weight stigma results mostly from a WHPP emphasizing individual responsibility, we also tested the difference between a WHPP emphasizing individual vs. organizational responsibility. We hypothesized that weight stigma would be higher when a WHPP emphasizes individual as opposed to organizational responsibility for employees' health (Hypothesis 3).

Methods

Participants and Design

We ran this experiment in the lab of a European university among undergraduate business students who participated in exchange for course credits. We aimed to reach 120 respondents, but used the end of the scheduled period as a the stopping rule. Ninety-six students (34 female; M_{age}= 20.4, SD_{age}= 2.28) participated. Participants were randomly assigned to one of four conditions, namely No WHPP ($N = 25$), WHPP without responsibility information ($N = 24$), WHPP emphasizing organizational responsibility ($N = 23$), and WHPP emphasizing individual responsibility ($N = 24$). The first two conditions are thus comparable with Study 1, as they represent the presence of WHPP (no vs. yes), while the last two conditions allow comparison of WHPP emphasizing either individual or organizational responsibility.

Procedure

First, participants answered questions about their gender, age, weight and height (which were later used to calculate their BMI by dividing people's weight in kilos by their height in meters, squared). Then, participants were presented with a declaration about health, ostensibly from their university. Participants were informed that their university was in the process of further developing this declaration, and wanted to present it to various

stakeholders, including students. They were further told that the university would like to hear their opinion about it. The hypothetical declaration served to manipulate the presence and the focus of a WHPP. Students read the declaration and were asked to provide their opinion about it in an open question. Afterwards, they were asked to engage in a task supposedly unrelated to the health declaration they just read. Specifically, they read about a new study examining how people perceive each other, before completing a "picture task," which served as the measure of weight stigma. Participants' then completed questions relating to the controllability of overweight.

Manipulation of Health Program

The **Appendix** provides a detailed overview of the manipulations used in this research. In all conditions, the declaration stated, "*The University deems it important that employees and students are healthy, have good condition and are not overweight.*" In the no WHPP condition, only this declaration was provided. In the three conditions where a WHPP was present, participants also read that the university would implement several policies to promote the health of employees and students. Policies that could credibly be implemented were chosen with both a focus on individual and organizational responsibility. These were adapting the building to make the stairs more prominent and the elevator a less prominent, provide healthy food in the canteen, and provide more sports facilities. In the WHPP condition without responsibility information, this was all that respondents read. In the WHPP conditions with information about responsibility, the policies were explained in more detail. This differed between the WHPP emphasizing individual responsibility and the WHPP emphasizing organization responsibility with regard to emphasizing how the policies were a matter of effort of the individual employee or student, or of the organization. For example, when explaining adaptions to the building, in the WHPP emphasizing individual responsibility condition, participants read, "*In this way, people will be motivated to take the stairs instead of the elevator.*" In the WHPP emphasizing organization responsibility condition, participants read, "*In this way, taking the stairs becomes the more "logical option" and people automatically will be more inclined to take the stairs instead of the elevator.*" Likewise, there was a difference in the declaration conclusion, where participants read, "*As such, the university appeals to their employees and students to take responsibility for fostering their own health*" when the WHPP emphasized individual responsibility and "*As such, the university takes her responsibility to foster the health of their employees and students*" when the WHPP emphasized organization responsibility.

Measures

Weight stigma

Weight stigma was measured by a picture task in which the items of the shortened version of the Fat Phobia scale (Bacon et al., 2001) were used. Participants were shown pictures of two persons of which they were asked to imagine that these people were their lecturers. The picture on the left was of a woman with overweight and the picture on the right was of a woman without overweight. The pictures were drawn from a "before-after" image on the internet of the same person (see the **Appendix** for the pictures that are anonymized for the purpose of this paper). A pilot test had shown that the woman on the left was indeed perceived as overweight and the woman on the right was not. In addition, the woman with overweight was perceived to be friendlier, less attractive, and younger, although these effects were smaller, and some at the advantage of the woman with overweight. The two women did not differ in perceived competence and dressing style (see **Appendix** for pilot details).

Participants were asked to imagine that these women were their lecturers and were presented with "several attributes that a university lecturer could possess." For each attribute, participants were asked to indicate whether this attribute fitted the woman on the left or the woman on the right the most. This was done on a 7-point Likert scale (1 = only applicable to the woman on the left, 4 = equally applicable to both, 7 = only applicable to the woman on the right). A number of attributes were presented, among which were 14 Fat Phobia items: industrious, will power, attractive, slow, endurance, active, weak, self-indulgent, likes food, insecure, high self-esteem, well-shapely, overeats, good self-control. As a lower score reflected a stronger association of the attribute with the woman with overweight, the negative items (slow, weak, self-indulgent, likes food, insecure, overeats) were reverse coded. After these 14 items were averaged into one scale ($\alpha = 0.84$), a high score on this measure reflected weight stigma. Another item, namely "capable as a teacher," was included to test whether weight stigma would manifest itself in biased perceptions specific for the context of students evaluating teachers.

Controllability attributions

Two questions assessed respondents' beliefs about the controllability of weight ("People have little influence on their weight" and "Overweight is something that people cannot change themselves"). These items were reverse coded and combined into a single index of controllability ($r = 0.37$, $p < 0.001$), with higher values indicating greater perceived weight controllability.

BMI

For exploratory reasons, participants were asked to fill in their height and weight and, from this, BMI was calculated. Mean BMI was 22.26 kg/m^2 ($SD = 2.42$), with a minimum of 18.01 kg/m^2 and a maximum of 30.19 kg/m^2. Of the respondents, 87.5% had no overweight (BMI < 25 kg/m^2), 11.5% had overweight (BMI between 25 and 29.9 kg/m^2), and 1% had obesity (BMI ≥ 30 kg/m^2).

Results

Analytic Strategy

We performed one-way ANOVA's with *post-hoc* LSD tests to compare all four conditions. Power analyses for this analysis showed a power of 0.50 to detect a medium effect size. Results of these analyses are presented in **Table 2** and explained in more detail in the following paragraph. To disentangle the effect of WHPP presence (investigated in Study 1) and the focus of the WHPP, and to make it easier to explore with more power whether the effects of these factors were moderated by BMI, we computed

two additional factors from the experimental conditions, namely *WHPP Presence* and *WHPP Focus*. For *WHPP Presence*, a dichotomous variable was constructed contrasting the no WHPP condition with the other three conditions collapsed, thereby corresponding to the absence (0) vs. presence (1) of a WHPP. For *WHPP Focus*, the WHPP emphasizing individual responsibility condition was coded as "1," the no WHPP condition and the WHPP conditions without responsibility information were coded as "0," and the WHPP organizational responsibility was coded as "−1." Thus, a higher score reflected an emphasis on individual responsibility. Correlations of these two factors with other variables are shown in **Table 3**. Power analysis for correlations showed a power of 0.86 to find a medium effect size of $r = 0.30$.

Weight Stigma

A one-way ANOVA was performed to test the influence of the different conditions on weight stigma. This showed an overall marginally significant effect of condition, $F_{(3,92)} = 2.45$, $p = 0.069$, $\eta^2 = 0.07$. LSD *post-hoc* analyses showed that weight stigma was significantly higher in the WHPP individual responsibility condition ($M = 5.58$, $SD = 0.68$), compared to the WHPP organization responsibility condition ($M = 5.10$, $SD = 0.72$) ($p = 0.015$, Cohen's $d = 0.69$) and compared to the no WHPP program condition ($M = 5.16$, $SD = 0.54$), ($p = 0.032$, Cohen's $d = 0.68$). The condition in which the WHPP contained no responsibility information ($M = 5.27$, $SD = 0.58$) did not differ from the other conditions, all p's > 0.11 and all Cohen's $d <$ 0.50. **Table 3** further shows that weight stigma was affected by the focus of the WHPP ($r = 0.27$, $p < 0.001$, Cohen's $d = 0.56$) and not by the mere presence of a WHPP ($r = 0.08$, Cohen's $d = 0.16$, *n.s.*). Together, these results suggest that the presence of a WHPP does not necessarily contribute to weight stigma; however, when WHPP emphasize individual responsibility this does contribute to weight stigma.

Impact of BMI

We also explored whether the effect of *WHPP Presence* or *WHPP Focus* on weight stigma depends on someone's own BMI. We performed a regression analysis with weight stigma as the dependent variable and WHPP presence, BMI (standardized) and the interaction term as independent variables. This model was significant, $F_{(3,95)} = 2.77$, $p = 0.046$ and rendered a marginal main effect of BMI, $\beta = -0.19$, $p = 0.07$, Cohen's $d = 0.39$, and a significant BMI × WHPP presence interaction, $\beta = 0.25$, $p = 0.02$, Cohen's $d = 0.50$. This interaction is plotted in **Figure 1**. Simple slopes analyses showed that weight stigma increased due to *WHPP Presence*, but only in participants with a relatively high BMI ($\beta = 0.33$, $p = 0.02$, Cohen's $d = 0.51$) and not participants with a relatively low BMI ($\beta = -0.11$, $p = 0.43$, Cohen's $d = 0.16$). More specifically, the shape of the figure shows that, in absence of a WHPP, weight stigma is lower among people with a high BMI than among those with a low BMI, and that the presence of a WHPP increase the weight stigma up to the same level as the low BMI participants' weight stigma. We performed a similar regression for *WHPP Focus*. This rendered a significant overall model, $F_{(3,95)} = 3.96$, $p = 0.01$, a marginal main effect of BMI, $\beta = -0.16$, $p = 0.099$, Cohen's $d = 0.35$, and a marginally significant BMI × WHPP focus interaction, $\beta = 0.19$, $p = 0.06$, Cohen's $d = 0.40$. This interaction is plotted in **Figure 2**. Simple slopes analyses showed that weight stigma was affected by *WHPP Focus*, but only in participants with a relatively high BMI ($\beta = 0.47$, $p = 0.002$, Cohen's $d = 0.68$) and not participants with a relatively low BMI ($\beta = 0.06$, $p = 0.67$, Cohen's $d = 0.09$). Hence, when the focus does *not* lie on individual responsibility, people with a high BMI experience lower levels of weight stigma than people with a low BMI. But an individual focused WHPP increased the level of weight stigma up to the same level of the low BMI participants' weight stigma.

The results suggest that participants reported more weight stigma when exposed to WHPP emphasizing individual responsibility. Also, people with a higher BMI reported more weight stigma both when a WHPP was present and when exposed to WHPP emphasizing individual responsibility compared to people with a lower BMI.

Other Weight-Biased Perceptions

We tested the influence of the experimental conditions on students' work-related biased perceptions in the context of teaching. Hence, we performed a one-way ANOVA to examine the item "capable as teacher" as dependent variable. There was an overall significant effect, $F_{(3,92)} = 3.94$, $p = 0.01$, Cohen's $d = 0.70$. Means and *post-hoc* differences are presented in **Table 2** (Cohen's d of the largest significant difference was 0.93 and Cohen's d of the smallest significant difference was 0.58). These results indicate that the WHPP emphasizing individual responsibility increased work-context related biased perceptions toward a person with overweight, compared to all other conditions. **Table 3** shows that the bias regarding capability as a teacher was affected by both the presence ($r = 0.21$, Cohen's $d = 0.43$) and the focus of the WHPP ($r = 0.25$, Cohen's $d = 0.52$). This result suggests that implementing a WHPP, especially when it emphasizes individual responsibility, induces people to regard people with overweight as less suitable for a specific job.

We also investigated whether the influence of WHPP presence and focus on biased perceptions of capability as a lecturer depended on respondents' own BMI. This was not the case, as the regression analyses did not show any (marginally) significant interactions between BMI and WHPP (presence or focus).

Controllability

A one-way ANOVA was performed to test the influence of the experimental conditions on attributions of the controllability of weight. This showed an overall marginally significant effect of condition, $F_{(3,92)} = 2.48$, $p = 0.066$, Cohen's $d = 0.59$. LSD *post-hoc* analyses showed that respondents perceived overweight, compared to the condition without a WHPP, to be more controllable in the WHPP-no responsibility information condition (Cohen's $d = 0.52$) and in the WHPP emphasizing individual responsibility condition (Cohen's $d = 0.72$). WHPP Focus did not affect perceived controllability of weight. This aligns with **Table 3**, which shows that attributions of the controllability of weight were significantly influenced by the

TABLE 2 | Means and standard deviations per experimental condition for Study 2.

Condition	Weight stigma	Overweight bias—capable as teacher	Controllability perceptions
No WHPP	5.16[a] (0.54)	4.28[b] (0.98)	5.46[b] (1.30)
WHPP—no responsibility information	5.27[ab] (0.58)	4.63[b] (0.97)	6.04[a] (0.88)
WHPP—organization responsibility	5.10[a] (0.72)	4.48[b] (0.99)	6.00[ab] (1.12)
WHPP—individual responsibility	5.58[b] (0.68)	5.21[a] (1.02)	6.21[a] (0.67)

Within columns, subscripts that share a letter do not differ significantly.

TABLE 3 | Descriptive statistics and correlations for Study 2.

		M (SD)	1	2	3	4	5	6	7
Control variables	1. Gender[a]	1.35 (0.48)							
	2. Age	20.40 (2.48)	0.06						
	3. BMI	22.26 (2.42)	−0.15	0.37**					
IVs	4. WHPP Presence[b]	0.74 (0.44)	0.09	−0.18	0.03				
	5. WHPP Focus[c]	0.01 (0.70)	−0.20	0.06	0.03	0.01			
DVs	6. Weight stigma	5.30 (0.61)	0.10	−0.08	−0.12	0.08	0.27**		
	7. Bias—Capability as a teacher	4.65 (1.04)	−0.08	−0.15	−0.11	0.21*	0.25*	0.40**	
	8. Controllability	5.92 (1.05)	0.00	0.09	−0.03	0.26*	0.07	0.25*	0.40**

[a] *1 = male, 2 = female.*
[b] *1 = yes (N = 71), 0 = no (N = 25).*
[c] *1 = individual (N = 24), 0 = no WHPP/ WHPP no information (N = 25 and N = 24, respectively), −1 = organizational (N = 23). *p < 0.05, **p < 0.01.*

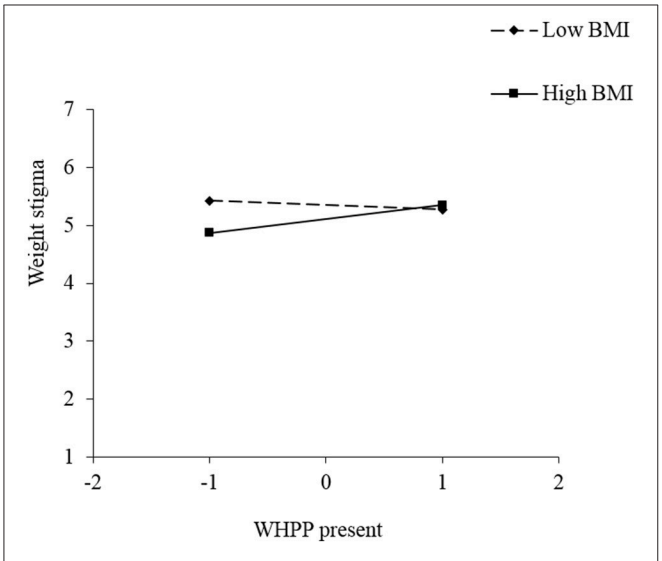

FIGURE 1 | Simple slopes for the effect of *WHPP Presence* on weight stigma, moderated by respondents' BMI, Study 3.

WHPP Presence ($r = 0.26$, Cohen's $d = 0.54$) rather than by WHPP Focus.

Discussion

Study 2 varied the presence of a WHPP and its focus on individual or organizational responsibility for health in a higher education institution. In line with the findings of Study 1, the mere presence of a WHPP led to higher perceived controllability of weight. While controllability perceptions were not influenced by the WHPP's focus on individual or organization responsibility, in line with predictions, WHPP focus (and not so much the mere presence of WHPP) *did* affect weight stigma. Respondents displayed significantly more weight stigma when the WHPP emphasized individual responsibility compared to organizational responsibility for health. WHPP emphasizing individual responsibility also elicited a more particular work-related bias against people with overweight, namely with regard to capability as a lecturer.

Thus, consistent with our reasoning, to the extent that workplace health promotion emphasizes individual rather than organizational responsibility for employee health, weight stigma is evoked. Arguably, stigmatizing thoughts and biases about people with overweight is not the same as discriminatory behaviors toward people with overweight. However, in line with previous research (e.g., O'Brien et al., 2008; Flint et al., 2016), it is expected that biases about people with overweight lead to discriminatory behavior. After all, there is ample evidence that both conscious and unconscious biases about certain groups lead to discriminatory behavior toward members of these groups (e.g., Phelan et al., 2014). To test this, Study 3 aimed to examine the effects of WHPP Focus on weight-based discrimination in the context of a promotion decision. This study tests the expectation that people show greater weight discrimination when exposed to WHPP that endorse individual compared to organizational responsibility for health (Hypothesis 4).

Another interesting finding of Study 2 was that, while, in absence of a WHPP, people with a high BMI showed less weight bias than people with a low BMI, the WHPP changed this. The presence of a WHPP, especially the WHPP that emphasizes individual responsibility, increased the weight stigma

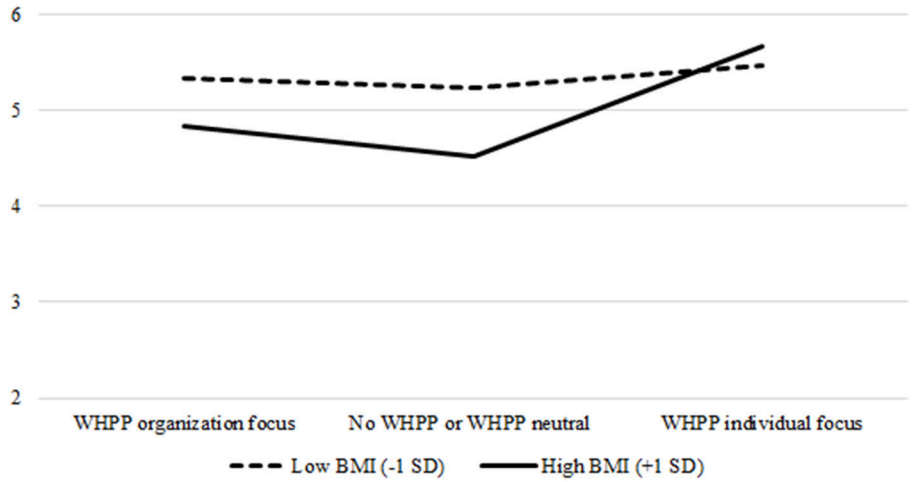

FIGURE 2 | Simple slopes for the effect of *WHPP Focus* on weight stigma, moderated by respondents' BMI, Study 3.

only among people with a high BMI up to the same level as people with a low BMI. This finding suggests that the perspective of potential targets of weight stigma in the workplace warrants greater attention. WHPP that emphasize individual responsibility, might lead to people with a high BMI perceiving that they are to be blamed for their weight, thereby inducing self-stigmatization or weight bias internalization (Durso and Latner, 2008). Therefore, in Study 3 we aimed to explore the target's perspective. Thus far, we have focused on those making the judgments; however, in Study 3 we also test the effect of WHPP on weight bias internalization amongst people with overweight or obesity. Specifically, Study 3 tests the prediction that people report more weight bias internalization after exposure to a WHPP emphasizing individual compared to organizational responsibility (Hypothesis 5a) and that this effect is more pronounced in people with a high rather than low BMI (Hypothesis 5b). Note that the statistical power of Study 2 is rather low, and results should therefore be interpreted with caution. We sought to recruit more respondents to reach adequate statistical power in Study 3. To achieve sufficient variance in respondents' weight-status, that would allow testing the effects of WHPP Focus on employees with overweight and obesity, we aimed for a large sample of US citizens.

STUDY 3

Methods

Study 3 was pre-registered. A link to the complete pre-registration of the hypothesis and procedures with regard to sampling, stopping rule and data-analysis can be viewed at https://osf.io/69qmc/?view_only=None by clicking "view registration form." All procedures as described in the method and result section are in accordance with this pre-registration.

Participants and Design

The experiment was posted on MTurk as a study about "Decision Making in HR" and people who worked in HR were especially encouraged to participate. Payment was $3 plus a chance to win a $10 bonus. Two hundred and fifty-one MTurk users who were employed and located in the US participated in the study. They were randomly assigned to the conditions of a 2 (WHPP Focus: individual vs. organizational) between-subjects factor by 2 (Candidate Weight-Status: normal weight vs. overweight) within-subjects factor design. Thirteen respondents (5.2%) did not seriously engage with the writing task that was part of manipulating WHPP Focus and were removed from further analyses. This left a sample of 238 respondents (52% male; M_{age}= 35.76, SD_{age}= 10.15), of whom 21% worked in HR, either currently or in the past. Seventy-one (71) percent had at least some experience with hiring people (varying from "a little" to "a great deal"). Amongst the respondents, 10% reported high school as their highest level of education, 23% "some college," 12% a 2-year college degree (Associates), 42% a 4-year college degree (BA, BS), 10% a master's degree, and 3% a doctoral or a professional degree.

Procedure

All materials for this study, including the manipulations and measures, can be found in the **Appendix**. Respondents were asked to take the role of the HR manager in "Sturdation", a big construction company. In this role, their first task was to write a statement about a WHPP that Sturdation was planning to implement. This task and the preparation for the task served to manipulate WHPP Focus. In preparing respondents for the writing task, they were informed that Sturdation decided to implement a WHPP. After introducing the content of the program and Sturdation's viewpoint on who is responsible for employee health (individual vs. organization), a

manipulation check question was asked. The envisioned WHPP and Sturdation's viewpoint on health were then repeated and respondents were asked to write a persuasive text for the advisory board of Sturdation. They were instructed to make the viewpoint of Sturdation clear, convince the supervisory board of this viewpoint, and explain how the measures being implemented in the WHPP align with Sturdation's viewpoint. Respondents could not continue with the survey if they wrote a text shorter than 180 characters. This was not part of the instructions, and respondents only became aware of this if they tried to continue with a text of less than 180 words. After writing this text, respondents were asked three questions about their agreement with the WHPP and their satisfaction with Sturdation. These questions were intended to let the manipulation sink in and were not part of hypotheses testing.

In the second task, which served as the dependent measure of weight-based discrimination, respondents took an advisory role in an internal application procedure for the vacancy of senior policy advisor with advising on international branding as main responsibility. They saw a short CV and photo of two candidates named Lucy and Megan (see Attachment)[1]. For half of the respondents, a photo of a women with overweight was coupled with Lucy's CV and a photo of a woman with normal weight was coupled with Megan's CV. For the other half of the respondents, this was the other way around. We used the same photos as in the weight stigmatization task in Study 2. The order that the candidates were presented, as well as whether Lucy or Megan was with overweight, was randomized. Respondents indicated the hireability of each candidate. A suspicion probe was presented that asked respondents to write down what they thought the research question was for this study. Then, respondents completed measures of weight bias internalization, two measures of perceived controllability of weight, and a second manipulation check. Finally, demographic questions were asked, amongst which was weight and height.

Manipulation WHPP

Depending on the experimental condition, respondents read different information about the WHPP and Sturdation's viewpoint on employee health. In the text below, the individual responsibility instruction is in brackets and the organizational responsibility instruction is in Italics:

> "The Workplace Health Promotion Program is based on the viewpoint that the health of an employee is the responsibility of *the organization* (each individual employee). This is because the health of a person is very much influenced by *the environment he/she lives and works in, in terms of availability of healthy food and opportunities to exercise* (his/her own behavior in terms of eating an exercise). Therefore, the task of Sturdation is to *offer a healthy work environment* (encourage employees to take their responsibility)."

[1]In a pilot study ($N = 56$) designed to create the materials for this study, a paired sample t-test revealed no differences in hireability ratings between these two CV's, $t_{(55)} = 1.05$, $p = 0.30$.

The WHPP's content in both conditions concerned four actions, namely healthy food in the canteen, taking the stairs rather than the elevator, offering a health check, and influencing employees' movement in the office while at work. The implementation of these actions differed between conditions. In the individual responsibility condition, the actions were aimed at encouraging employees to behave in healthy ways, while the actions in the organizational responsibility condition were aimed at adapting the working environment so that it evoked healthy behavior amongst employees. In addition, the action of offering a health check differed between conditions where, in the individual responsibility condition, follow-up actions on the health check were at the cost of the employee, whilst in the organization responsibility condition, follow-up actions were covered by the organization. The actions as described in the two different conditions are presented in the **Appendix**.

Measurements

BMI

BMI was calculated in the same way as in Study 2. For two respondents this rendered a missing value, as there was doubt about the unit they used to fill in their height or weight. Mean BMI was 27.19 kg/m^2 ($SD = 6.18$), with a minimum of 16.65 kg/m^2 and a maximum of 53.16 kg/m^2. Of the respondents, 40.3% were without overweight (BMI < 25 kg/m^2), 33.4% with overweight (BMI between 25 and 29.9 kg/m^2), and 26.4% with obesity (BMI ≥ 30 kg/m^2).

Manipulation checks

We checked the WHPP manipulation with two questions. Specifically, respondents were asked, "According to the viewpoint of Sturdation, who is responsible for the health of individual employees?" directly after the WHPP manipulation, and "In your own opinion, who is responsible for the health of individual employees?" after the measure of Weight Bias Internalization. Both questions were answered on a 7-point Likert scale (1= the employee is solely responsible, 7 = the organization is solely responsible). These questions were reverse coded, such that higher values reflect greater perceived individual responsibility for health. In addition to these questions, the text that respondents wrote about Sturdation's vision on the WHPP was coded with regard to whether they wrote about individual responsibility, organizational responsibility, or mixed/unclear. This coding was performed by a researcher who was blind to experimental conditions.

Weight bias internalization

The 11-item Modified Weight Bias Internalization Scale (Pearl and Puhl, 2014) was used. An example item is "Because of my weight, I feel that I am just as competent as anyone" (reverse coded). Answers were given on a 7-point Likert scale (1 = strongly disagree, 7 = strongly agree). The scale was highly reliable ($\alpha = 0.95$).

Controllability of overweight

Two measures were employed. First, the slider measure in Study 1 was used, but now focusing on the overweight items (which made

all other items distraction items). Since "becoming overweight" and "being overweight" rendered similar results in Study 1, we now only included "being overweight." The second measure was the 8-item Beliefs About Obese Persons Scale (BAOP; Allison et al., 1991). An example item of this scale is "Obesity is usually caused by overeating." Answers were given on a 6-point Likert scale (1 = I strongly disagree, 6 = I strongly agree). Reliability was insufficient ($\alpha = 0.61$), but reliability increased to a satisfactory level ($\alpha = 0.79$) after removal of the first and last item. Items were coded such that for both measures, higher scores reflected greater perceived controllability.

Weight-based discrimination

Weight-based discrimination was operationalized by comparing hireability judgments of the two candidates. Lower hireability judgement for the candidate with overweight compared to the candidate without overweight indicated weight-based discrimination. For both candidates, hireability judgements were measured with four items relating to the candidates' skills and competences ($\alpha = 0.91$ and $\alpha = 0.92$ for the normal weight and the candidate with overweight, respectively). The **Appendix** provides the detailed measurements.

Suspicion

Answers that respondents gave to the question asking them what they thought the research question was for this study were coded on suspicion. More specific, an independent coder, blind for the condition to which participants were assigned, coded for each answer whether it showed that the participant thought that the study was about weight bias in evaluating job candidates (0 = no, 1 = yes). Answers that were coded as suspicious were, for example, "Not sure. Possibly trying to gain insight into weight biases" and "I think this research aims at observing whether participants will hire the woman without overweight or the woman with overweight, once they have been exposed to health concerns in the workplace."

Results

The coding of the suspicion probe made clear that a significant portion of our respondents issued suspicion about the hypothesis (69 respondents, 27.5%). Consistent with our pre-registered analytical strategy, for the analysis of Hypothesis 4 (about weight-based discrimination), we removed the respondents who indicated suspicion about the hypotheses. However, the number of suspicious respondents was larger than we had imagined upfront. Naturally, removing so many respondents reduces our statistical power. Therefore, we additionally report the (non-pre-registered) analysis including these respondents. For Hypothesis 5 (about weight-bias internalization), we continued testing our hypotheses on weight bias internalization including the 69 suspicious respondents. Our reason for doing this was not only that including these respondents increases power, but also that the suspicion about the hiring task was less relevant for measuring weight bias internalization than for measuring weight-based discrimination. This is something we had not realized during the pre-registration. To abstain from p-hacking, we did not do any further analyses without the 69 suspicious respondents.

For all our hypothesis-testing and exploratory analyses, we tested for studentized residual outliers and determined the cut-off point using a Bonferroni correction. In the following, we report outliers when they were detected and explain how we dealt with them (which was in line with the pre-registration).

Analyses supplementing the analyses reported below are provided in the **Appendix**.

Manipulation Checks

Of all respondents, 95% wrote a text that matched the experimental condition they were assigned to; 1.7% wrote a text contrary to their condition; 3.4% wrote a mixed or unclear text. As we could not conclude for sure that respondents providing texts contrary to their condition or mixed or unclear texts did not keep to the instructions (as it was not forbidden to use opposite or irrelevant arguments), we chose not to exclude these respondents from the analysis, in line with our pre-registration. Further, we regressed WHPP Focus (individual responsibility = 1, organizational responsibility = −1), BMI (standardized) and their interaction term on the two manipulation check questions concerning responsibility attributions. Both models were significant, $F_{(3, 228)} = 247.67$, $p < 0.001$, $R^2 = 0.77$ and $F_{(3, 228)} = 19.30$, $p < 0.001$, $R^2 = 0.20$, for Sturdation's and respondents' own viewpoint, respectively. Importantly, for both questions only a main effect of condition was evident (Sturdation: $\beta = 0.0.87$, $t = 27.05$, $p < 0.001$; Own opinion: $\beta = 0.45$, $t = 7.57$, $p < 0.001$). Thus, a WHPP emphasizing individual responsibility elicited significantly greater attributions of individual responsibility, as opposed to organizational responsibility for health. The manipulation can thus be considered successful.

Hypothesis Testing: Weight-Based Discrimination

Hypothesis 4 stated that weight-based discrimination would be greater when the WHPP emphasized individual as opposed to organizational responsibility. A mixed-model ANOVA with WHPP Focus as between-subjects factor and candidate weight-status as within-subjects factor was performed by including hireability judgements of the candidate with overweight and without overweight as the dependent variable. Power analyses for this analysis using G*Power (Faul et al., 2007) showed a power of 0.76 and of 0.91 to detect a medium effect size for the analysis with and without the exclusion of suspicious respondents, respectively.

With exclusion of suspicious respondents (as preregistered)

We identified four outliers that did not significantly affect the regression coefficient of interest, which is why we did not remove them. A main effect was found of candidates' weight-status, $F_{(1, 163)} = 4.62$, $p = 0.03$, Cohen's $d = 0.33$. The candidate was judged as less hireable when she was with overweight ($M = 5.76$, $SD = 1.17$) compared to without overweight ($M = 5.90$, $SD = 0.96$), indicating weight-based discrimination. The interaction between WHPP Focus and Candidate Weight-Status did not reach significance, $F_{(1, 167)} = 1.99$, $p = 0.16$,

Cohen's $d = 0.012$. Nevertheless, given the a priori prediction we performed tests for simple main effects. These showed that weight-based discrimination was evident only when the WHPP emphasized individual responsibility, $F_{(1,167)} = 5.69$, $p = 0.02$, Cohen's $d = 0.37$, but not when the WHPP emphasized organizational responsibility, $F_{(1,167)} = 0.31$, $p = 0.58$, Cohen's $d = 0.09$.

With inclusion of suspicious respondents (not pre-registered)

We performed the same analysis including the 69 suspicious respondents. Six outliers were detected that did not affect the regression coefficients, and were therefore not removed. Again a main effect of the candidates' weight-status was observed, $F_{(1,236)} = 11.14$, $p = 0.001$, Cohen's $d = 0.43$ (candidate with overweight candidate: $M = 5.80$, $SD = 1.11$; candidate without overweight: $M = 6.00$, $SD = 0.91$). This effect was qualified by a significant WHPP Focus × Candidate Weight-Status interaction, $F_{(1,236)} = 4.27$, $p = 0.04$, $\eta^2 = 0.02$, Cohen's $d = 0.27$. Tests for simple main effects showed that weight-based discrimination was evident only when the WHPP emphasized individual responsibility, $F_{(1,236)} = 14.85$, $p < 0.001$, Cohen's $d = 0.50$, but not when the WHPP emphasized organizational responsibility, $F_{(1,236)} = 0.74$, $p = 0.374$, Cohen's $d = 0.11$.

Conclusions Hypothesis 4

Results of the two analyses reported above thus support Hypothesis 4. Nevertheless, we wish to frame this conclusion with some care as the analyses that were done according to our pre-registered analyses (thus excluding the 69 suspicious participants) partly supported Hypotheses 4: whereas the simple main effects were in line with the hypothesis, the interaction was not significant ($p = 0.16$). **Table 4** provides an overview over means and standard deviations both when the 69 suspicious respondents are excluded and included.

Hypotheses Testing: Weight Bias Internalization

Hypotheses 5a and 5b stated that the WHPP emphasizing individual responsibility would increase weight bias internalization, and that this effect would be more pronounced for people with a high BMI. To test this, we effect coded WHPP Focus (−1 = individual responsibility, 1 = organization responsibility), standardized BMI and from this calculated WHPP × BMI interaction term. These variables were regressed on weight bias internalization. This rendered a significant model (no outliers were detected), $F_{(2,229)} = 32.46$, $p < 0.001$, $R^2 = 0.22$ and a main effect of BMI, $\beta = 0.70$, $t = 7.93$, $p < 0.001$, Cohen's $d = 1.22$, showing that respondents with a higher BMI reported more weight bias internalization than respondents with a lower BMI. There was no effect of WHPP Focus ($\beta = -0.04$, $p = 0.49$, Cohen's $d = 0.10$) nor a significant WHPP × BMI interaction, $\beta = 0.01$, $p = 0.82$, Cohen's $d = 0.03$). As people's self-perception of whether they are with overweight or obesity may depend more on whether their BMI falls into the "overweight" or "obesity" categories than on their exact BMI value, we also conducted an analysis with BMI as a categorical variable, making categories based on overweight (BMI $\geq$ 25 kg/m^2) or obesity (BMI $\geq$ 30 kg/m^2). However, there were no interactions between WHPP Focus and respondents' BMI. Power analysis for multiple regression showed a power of 0.99 to find a medium effect size of $f^2 = 0.15$ using G*Power (Faul et al., 2007).

Conclusions Hypothesis 5

Hypotheses 5a and 5b that WHPP Focus affects weight bias internalization, and that this effect is stronger for employees with a higher BMI were not supported. Rather, higher BMI generally was associated with greater weight bias internalization amongst employees.

Exploratory Analyses: Targets' Perspective

Next to our preregistered hypotheses, we also performed a number of exploratory analyses in order to gain more insights into potentially different effects of WHPP on employees with or without overweight. More specifically, we tested the effects of WHPP Focus and respondents' BMI on our two measures of controllability of overweight (the slider measure and BAOP). We first tested this regarding BMI as a continuum and then regarding with BMI as weight status categories (contrasting "with overweight" vs. "without overweight" and contrasting "with obesity" vs. "without obesity").

BMI as continuous variable

Regressing the slider measure of perceived controllability of overweight on WHPP Focus, BMI and their interaction term rendered only a marginal main effect of BMI, $\beta = -0.11$, $t = -1.73$, $p = 0.086$, Cohen's $d = 0.23$. Regressing BAOP on WHPP Focus, BMI and their interaction rendered a significant main effect of BMI, $\beta = -0.19$, $t = -2.87$, $p < 0.005$, Cohen's $d = 0.38$. This shows that respondents with a relative high BMI perceived weight as being *less* controllable than respondents with a relative low BMI. In both regressions, no effect of WHPP Focus or a BMI by WHPP Focus interaction was evident. Power analysis for multiple regression showed a power of 0.99 to find a medium effect size of $f^2 = 0.15$ using G*Power (Faul et al., 2007).

BMI as categorical variable

We tested whether controllability attributions were determined by respondents' BMI *category* rather than their exact BMI. We indeed found support for this when comparing respondents with and without obesity. Specifically, we tested the influence of WHPP Focus (Responsibility: individual vs. organizational) and respondents' BMI (BMI Category: without obesity vs. with

TABLE 4 | Hireability judgments per condition for Study 3.

		WHPP Focus	
		Organizational	**Individual**
SUSPICIOUS RESPONDENTS EXCLUDED (n = 169)			
Candidate Weight Status	Non-overweight	5.99 (1.00)^a	6.00 (0.83)^a
	Overweight	5.91 (1.10)^a	5.69 (1.12)^b
SUSPICIOUS RESPONDENTS INCLUDED (n = 238)			
Candidate Weight Status	Non-overweight	5.89 (1.05)^a	5.91 (0.86)^a
	Overweight	5.84 (1.17)^a	5.67 (1.08)^b

Within columns, subscripts that share a letter do not differ significantly.

TABLE 5 | Correlations between control variables, independent and dependent variables, Study 3.

		1	2	3	4	5	6	7	8	9	10
Control variables	1. Gender (1 = male, 2 = female)	1.00									
	2. Age	0.04	1.00								
	3. Education	−0.01	0.00	1.00							
	4. Work in HR	0.11	0.02	0.11	1.00						
	5. Hiring Experience	−0.03	0.22*	0.23**	0.52**	1.00					
	6. BMI	0.03	0.08	−0.20*	−0.03	0.06	1.00				
IVs	7. WHPP focus[a]	−0.07	−0.06	0.04	0.01	0.08	0.09	1.00			
DVs	8. Weight discrimination	−0.12	−0.09	0.16*	−0.02	0.05	−0.04	0.13*	1.00		
	9. Weight bias internalization	0.20**	−0.07	−0.05	0.11	0.01	0.47**	0.07	0.01	1.00	
	10. Controllability (slider)[b]	−0.17**	−0.02	−0.04	−0.10	−0.07	−0.11	−0.02	0.11	−0.15*	1.00
	11. Controllability (BAOP)[b]	−0.12+	−0.01	−0.08	−0.18**	−0.20**	−0.18*	0.03	0.18*	−0.19**	0.58**

[a] *1 = individual responsibility (N = 121), −1 = organizational responsibility (N = 117).*
[b] *Higher values indicate greater perceived controllability, +p = 0.065, *p < 0.01, **p < 0.001.*

obesity) on controllability perceptions by means of a multivariate ANOVA with the slider measure and BAOP as dependent variables. For both indicators of perceived controllability of weight, no main effects of WHPP Focus and BMI Category were found, but significant interactions between the independent variables were revealed for the slider measure, $F_{(2,232)} = 6.05$, $p = 0.01$, Cohen's $d = 0.32$, and for BAOP, $F_{(2,232)} = 3.94$, $p = 0.048$, Cohen's $d = 0.26$. **Table 6** shows means and standard deviations. Tests for simple main effects for both measures of perceived controllability of weight revealed that respondents with and without obesity did not differ in perceived controllability of weight when the WHPP emphasized organizational responsibility, both F's$_{(1,227)} < 2.3$, both p's > 0.13. By contrast, respondents with obesity perceived weight to be significantly less controllable than respondents without obesity when the WHPP emphasized individual responsibility [Slider measure: $F_{(1,227)} = 4.09$, $p = 0.04$, Cohen's $d = 0.26$; BAOP: $F_{(1,227)} = 5.84$, $p = 0.016$, Cohen's $d = 0.32$]. Power analyses for this analysis showed a power of 0.99 to detect a medium effect size of f = 0.25 using G*Power (Faul et al., 2007).

Conclusions exploratory analyses

The exploratory results suggest that people with obesity feel that overweight is less controllable than people without obesity, but that this is only the case when confronted with a WHPP that emphasizes individual responsibility (**Table 5**). So, one the one hand, our investigation shows that WHPP emphasizing individual responsibility causes *all* employees to ascribe responsibility for health to the individual employee (as the manipulation checks presented earlier suggest). On the other hand, employees with obesity perceive weight to be significantly *less* controllable in such situations. We will elaborate on the significance of this finding in more detail in the discussion section.

GENERAL DISCUSSION

The findings in this paper show that WHPP emphasizing individual responsibility induce weight stigma and discrimination in the workplace. We reasoned that workplace health promotion, especially when the program emphasizes individual responsibility, would contribute to the perception that weight is controllable, and that this would evoke weight stigma and weight-based discrimination. Our data shows that this is not the complete story. We found that the mere presence of a WHPP leads to stronger beliefs that weight is controllable (Studies 1 and 2). However, WHPP focus (i.e., individual or organization responsibility) did not affect beliefs about the controllability of weight but did affect weight stigma and weight-based discrimination. Thus, whilst weight stigma and discrimination were not the result of a belief that weight is controllable, a focus on individual responsibility within a WHPP did lead to increased weight stigma and discrimination.

Thus, the increase in weight stigma and discrimination observed in our studies was not caused by changes in controllability beliefs. This aligns with decision stage models of attribution (e.g., Mantler et al., 2003). These models entail that attributions of controllability, ascriptions of responsibility, and target blame are hierarchical constructs that prompt social observers to infer from the presence of the higher order construct that the lower order constructs are present too (Mantler et al., 2003). In other words, when social observers blame the target, they will assume responsibility for and controllability over the outcome. Likewise, when social observers ascribe responsibility for an outcome such as overweight, they will infer that the other person had control over the outcome. Hence, blaming and responsibility ascriptions may not always be the result of controllability perceptions but may actually cause them. This may be the reason why, in the current investigation, WHPP focus (which are responsibility ascriptions) did not affect stigma and discrimination through controllability perceptions. This also aligns with the notion that moral evaluations based on obesity are often implicit (Hoverd and Sibley, 2007) and thus need not to arise from controllability attributions. Indeed, a general feeling of dislike was also reported by Pescud et al. (2015), who found that employers' views of "unhealthy workers" involved perceptions such as "unpleasant company."

TABLE 6 | Perceived controllability of weight (slider measure and BAOP) as a function of WHPP Focus and BMI category (without overweight vs. with overweight), Study 3.

		WHPP Focus	
		Organizational	**Individual**
SLIDER MEASURE			
Candidate Weight Status	Without overweight	70.56 (20.72)[a]	76.81 (19.85)[a]
	With overweight	77.68 (17.93)[a]	66.56 (25.16)[b]
BAOP			
Candidate Weight Status	Without overweight	4.41 (0.80)[a]	4.62 (0.82)[a]
	With overweight	4.51 (0.91)[a]	4.17 (0.90)[b]

Within columns, subscripts that share a letter do not differ significantly.

Our findings contribute to both existing literature and practice in three important ways. First, the insights offered in this research contribute to what we know about WHPP. Research on WHPPs has, so far, only focused on health-related outcomes such as sick leave, physical activity, and workplace wellness (Anderson et al., 2009; Odeen et al., 2012; Osilla et al., 2012; Malik et al., 2014). These systematic reviews concerning the impact of WHPP on employee health in several domains have revealed sobering conclusions. We have suggested that this is at least partly due to a general failure to consider the complex interplay between individuals and their social environments—such as the organizations they work for—when employee health is concerned. The current investigation is the first to focus on the negative side-effects of WHPP in terms of stigmatization and discrimination of employees with overweight and obesity. In addition, we studied the effect of framing WHPP differently and found that weight-stigma and weight-based discrimination can be prevented by WHPP emphasizing organizational rather than individual responsibility.

Second, our findings contribute to existing insights about weight stigma. Prior research already showed that people with overweight and obesity are stigmatized and face discrimination in the workplace based on weight (e.g., O'Brien et al., 2008; Flint et al., 2016). However, our findings extend existing evidence by experimentally examining the effects of WHPP and their emphasis of either individual or organizational responsibility. This research is both novel and timely given the rapid rise in WHPP that aim to support employee health, many of which aim to "support employees in weight management." The workplace represents a setting where weight stigma and discrimination is reported, and there is a need to reduce these experiences. Thus, when designing WHPP, organizations should ensure that they support employee health and avoid potential counterproductive effects such as weight stigma and discrimination as observed in our studies.

Third, our finding contribute to the literature on the effect of changeability beliefs concerning weight (the "stigma asymmetry model," see Burnette et al., 2017; Hoyt et al., 2017), also mentioned in the introduction. This literature shows that the belief that obesity is an unchangeable disease has opposite effects on weight stigma through different paths. On the one hand, it reduces blame, but, on the other hand, it fosters the view of people with obesity having an unchangeable essence, thus fostering an essentialist view. Our data is in line with this model and suggest stigma asymmetry extends beyond the "obesity as a disease" issue and into the domain of WHPP. After all, we studied not only the focus of WHPP but also its mere presence. When a WHPP is present, this suggests that obesity is changeable (either by individual themselves or by their organizational environment). In Study 2, the mere presence of the WHPP did not affect weight stigma. This could be due to the fact that the WHPP on the one hand (or: for some people) increases blame, increasing weight stigma, and on the other hand (or: for other people), reduced an essentialist view of obesity, decreasing weight stigma. Our data further suggest that, only when changeability is connected to controllability by an *individual* rather than the environment, it increases weight stigma.

The Target's Perspective

With regard to the targets' perspective, although our findings in Study 2 suggest that the presence of a WHPP emphasizing individual responsibility increases the weight bias of people with a relative high BMI, Study 3 did not support the idea that it increased weight bias internalization in employees with overweight and obesity. However, the WHPP's emphasis on individual responsibility did appear to decrease the belief that weight is controllable particularly in people with obesity. On first sight, this may seem like a manifestation of resistance against the message that individuals are responsible for their own weight, a message that is arguably threatening for people with obesity (e.g., Dillard and Shen, 2005). However, our data does not support this interpretation. As became clear from the manipulation checks in Study 3, people with obesity were convinced by the WHPP emphasizing individual responsibility that employees were to be held responsible. Thus, when involved with a WHPP emphasizing individual responsibility, employees with obesity respond with a disturbing combination of feeling personally responsible for their weight, whilst perceiving little controllability of weight.

From a motivational perspective, people with obesity are thus likely to be caught in a Catch-22 like situation, which can result in maladaptive responses. After all, insights from learned helplessness theory show that, when people feel responsible for uncontrollable events, this harms their self-esteem (Abramson et al., 1978; Alloy et al., 1988; Pierce and Wardle, 1997) and potentially results in diet-breaking behavior and weight gain (Ogden and Wardle, 1990; Townend, 2009). Indeed, those targeted by moralized views of others often respond maladaptively. For instance, Mulder et al. (2015) showed that when confronted with moralizing health messages, participants with overweight ate more unhealthy snacks than when they were confronted with counter-moralizing health messages. Future research should thus explore the impact of public views of the morality of obesity on motivation for dieting and exercise in people with overweight and obesity.

In sum, the current research suggests that emphasizing individuals' responsibility for employee health in WHPP leads

to a moral burden compounded by employees with obesity feeling that they are unable to influence the outcome. This is likely to have a demotivating effect. Thus, it could very well be that a WHPP, to the extent that it emphasizes individual responsibility, fails to evoke healthy behavior amongst employees with overweight and obesity. Further, WHPP emphasizing individual responsibility also lead to employees with overweight and obesity being targeted by stigma and discrimination. Both are associated with several unwarranted outcomes, such as decreased mental and physical health (Pascoe and Smart Richman, 2009; Puhl and Suh, 2015), increased healthcare costs (Osumili et al., 2016), and underperformance (Glover et al., 2017). Thus, if not implemented carefully, WHPP might have negative rather than the expected positive effects.

Strengths, Limitations, and Future Research

Due to the experimental designs employed in Studies 2 and 3, the research presented here allows for causal inferences regarding the effects of WHPP presence and focus on employees' controllability perceptions, weight stigma, and weight-based discrimination. Further, both Studies 1 and 3 included varied samples of US citizens, and a diverse range of BMI. Study 3 in particular involved a great number of people who reported making hiring decisions in their work context. An additional strength of particularly Study 3 was that the hypotheses and analytical strategy were preregistered. This approach safeguards the confirmatory (rather than exploratory) nature of our data analysis and offers a transparent approach to *post-hoc* analyses and interpretations (Lindsay et al., 2016; Nosek and Lindsay, 2018). Together, this makes us confident that our results are credible and generalizable.

A limitation of our research is that we exclusively focused on WHPP effects on weight stigma and weight-based discrimination, thereby excluding a range of other health-related behaviors and outcomes. The question thus remains whether our results would also generalize to people with, for instance, burnout, cancer, or chronic diseases. Based on extensive research into the role of controllability and responsibility attributions on blame (e.g., Weiner et al., 1988; Weiner, 1995; Mantler et al., 2003), emphasizing individual responsibility for health may affect stigma toward other health-related behaviors and outcomes in the same way. Recent research shows that health moralization—which is strongly associated with responsibility—prompts people who live healthily to stigmatize and discriminate against others who live less healthy (Täuber, 2018). This effect was also evident for non-weight related health outcomes such as smoking, an unhealthy lifestyle more generally, and even for being ill. Nevertheless, overweight is more strongly associated with lifestyle than many (other) diseases such as cancer or burnout. Therefore, WHPP emphasizing individual responsibility may affect weight stigma more than stigma based on non-lifestyle related diseases. The results of Study 1 indeed support this notion as the WHPP presence only predicted controllability perceptions with regard to overweight and not with regard to cancer or burnout. More research is needed to test the effects of WHPP presence and focus on stigma based on diseases other than overweight.

Further, we manipulated WHPP focus rather than studying the focus of existing WHPP as they are implemented in organizations. The advantage of this is that we could establish causal relations and draw robust conclusion about the effects of a WHPP's individual vs. organizational responsibility focus. We assumed that most WHPP are implemented with a focus on individual responsibility. This was based on the notion that these programs are often employer-driven, and employers typically see health as employees' responsibility (Meershoek et al., 2010; van Berkel et al., 2014), as well as on the identified shift in focus from occupational health protection (responsibility of employers) to occupational health promotion (responsibility of employees; Macdonald and Sanati, 2010). However, the *extent* to which actual WHPP reflect this individual focus, and how this extent contributes to weight bias and discrimination, is a topic for further research.

Finally, to highlight the target's perspective, we focused on the influence of BMI. However, a valuable extension of this would be to take into account self-perceived weight rather than BMI. Prior research (Major et al., 2014) points out that people who do not perceive themselves as overweight feel less threatened by weight-stigmatizing messages, even when they are objectively overweight. Thus, WHPP focusing on individual responsibility might have less negative effects on employees with overweight or obesity but do not perceive themselves as such, and a more negative effects on employees without overweight or obesity but do perceive themselves as such. This is a notion that future research might examine.

CONCLUSION

Our findings suggest that the implementation of WHPP affects employees' perceptions of the controllability of weight, and the WHPP focus on individual (rather than organizational) responsibility leads to weight stigma and weight-based discrimination. These consequences have to be considered severe, particularly in light of the prevalence of employees with overweight and obesity (e.g., World Health Organisation, 2010), and the ever-increasing number of WHPP aiming to promote health at the workplace (e.g., Chen et al., 2015). Our research thus suggests that WHPP might be less beneficial for employees than commonly expected, especially when they emphasize individual responsibility for health. Specifically, our results demonstrate that a clear communication of *organizational* rather than individual responsibility for health might interrupt the automatic association of controllability with responsibility and ultimately blame (Weiner et al., 1988; Weiner, 1995, 2000; Crandall et al., 2001). In addition, such organizational responsibility attribution may induce the right motivation of those targeted to change their behavior. This notion is based on insights showing that using non-moral language is more motivating than using moralized language, which holds for diverse

topics such as climate change (Täuber et al., 2015), poverty reduction (Täuber and van Zomeren, 2012), immigration policy (Täuber and van Zomeren, 2013), and obesity (Mulder et al., 2015).

This is a valuable insight for practitioners, particularly for human resource management concerned with the design and implementation of WHPP. Our research suggests that to attenuate weight-based stigmatization and weight-based discrimination, WHPP should be designed and communicated in ways that emphasize the responsibility of the organization rather than of the individual employee. This can be done, for instance, by creating healthy organizational environments where mostly healthy food is offered in the canteen (rather than simply informing employees about what healthy eating is), by providing offices with standing desks, or by giving the stairs a more prominent placing than the elevator. In addition, in communication about the WHPP it is important that the focus should lie on the responsibility of the organization rather than the individual employee (e.g., communicate that the healthy food offering in the canteen is meant to make it easier for employees to eat healthier rather than to encourage employees to make healthy choices). Based on our findings, we recommend HR managers and other professionals involved in designing and implementing WHPP to critically review their policies regarding who is held responsible for employee health—even if this is implied rather than explicitly formulated in the policy.

AUTHOR CONTRIBUTIONS

ST and LM contributed equally to this paper and designed, carried out and performed the statistical analyses of study 2. LM designed, carried out and analyzed study 1 and performed the statistical analyses of study 3. ST, LM, and SF designed and carried out study 3. ST wrote the first draft of the manuscript. All authors contributed to writing the manuscript and have read and approved the submitted version.

FUNDING

This research was supported by an individual grant awarded to ST (#451-15-035) by The Netherlands Organization for Scientific Research (NWO).

ACKNOWLEDGMENTS

We would like to thank Martijn Blikmans and Marije Driesen for their support in preparing the materials and collecting the data.

SUPPLEMENTARY MATERIAL

The Supplementary Material for this article contains the appendix and can be found online at: https://www.frontiersin.org/articles/10.3389/fpsyg.2018.02206/full#supplementary-material

REFERENCES

Abramson, L. Y., Seligman, M. E. P., and Teasdale, J. D. (1978). Learned helplessness in humans - critique and reformulation. *J. Abnorm. Psychol.* 87, 49–74. doi: 10.1037/0021-843X.87.1.49

Allison, D. B., Basile, V. C., and Yuker, H. E. (1991). The measurement of attitudes toward and beliefs about obese persons. *Int. J. Eat. Disord.* 10, 599–607.

Alloy, L. B., Abramson, L. Y., Metalsky, G. I., and Hartlage, S. (1988). The hopelessness theory of depression - attributional aspects. *Br. J. Clin. Psychol.* 27, 5–21. doi: 10.1111/j.2044-8260.1988.tb00749.x

Anderson, L. M., Quinn, T. A., Glanz, K., Ramirez, G., Kahwati, L. C., Johnson, D. B., et al. (2009). The effectiveness of worksite nutrition and physical activity interventions for controlling employee overweight and obesity: a systematic review. *Am. J. Prev. Med.* 37, 340–357. doi: 10.1016/j.amepre.2009.07.003

Bacon, J. G., Scheltema, K. E., and Robinson, B. E. (2001). Fat phobia scale revisited: the short form. *Int. J. Obes.* 25, 252–257. doi: 10.1038/sj.ijo.0801537

Bartels, L. K., and Nordstrom, C. R. (2013). Too big to hire: factors impacting weight discrimination. *Manage. Res. Rev.* 36, 868–881. doi: 10.1108/MRR-06-2012-0134

Baum, C. L., and Ford, W. F. (2004). The wage effects of obesity: a longitudinal study. *Health Econ.* 13, 885–899. doi: 10.1002/hec.881

Burnette, J. L., Hoyt, C. L., Dweck, C. S., and Auster-Gussman, L. (2017). Weight beliefs and messages: mindsets predict body-shame and anti-fat attitudes via attributions. *J. Appl. Soc. Psychol.* 47, 616–624. doi: 10.1111/jasp.12464

Chen, L., Hannon, P. A., Laing, S. S., Kohn, M. J., Clark, K., Pritchard, S., et al. (2015). Perceived workplace health support is associated with employee productivity. *Am. J. Health Prom.* 29, 139–146. doi: 10.4278/ajhp.131216-QUAN-645

Crandall, C. S., D'Anello, S., Sakalli, N., Lazarus, E., Nejtardt, G. W., and Feather, N. T. (2001). An attribution-value model of prejudice: anti-fat attitudes in six nations. *Pers. Soc. Psychol. Bull.* 27, 30–37. doi: 10.1177/0146167201271003

Crandall, C. S., and Martinez, R. (1996). Culture, ideology, and antifat attitudes. *Pers. Soc. Psychol. Bull.* 22, 1165–1176. doi: 10.1177/01461672962211007

Dillard, J. P., and Shen, L. (2005). On the nature of reactance and its role in persuasive health communication. *Commun. Monogr.* 72, 144–168. doi: 10.1080/03637750500111815

Durso, L. E., and Latner, J. D. (2008). Understanding self-directed stigma: development of the weight bias internalization scale. *Obesity* 16, S80–S86. doi: 10.1038/oby.2008.448

Faul, F., Erdfelder, E., Lang, A. G., and Buchner, A. (2007). G* Power 3: a flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behav. Res. Methods* 39, 175–191. doi: 10.3758/BF03193146

Flint, S. W., Cadek, M., Codreanu, S. C., Ivi,ć, V., Zomer, C., and Gomoiu, A. (2016). Obesity discrimination in the recruitment process: "You're not Hired!" *Front. Psychol.* 7:647. doi: 10.3389/fpsyg.2016.00647

Flint, S. W., Crank, H., Tew, G., and Till, S. (2017). "It's not an obvious issue, is it?" Office-based employees' perceptions of prolonged sitting at work: a qualitative study. *J. Occup. Environ. Med.* 59, 1161–1165. doi: 10.1097/JOM.0000000000001130

Flint, S. W., and Snook, J. (2014). Obesity and discrimination: the next 'big issue'? *Int. J. Discrim. Law* 14, 183–193. doi: 10.1177/1358229114534550

Frase, P., and Gornick, J. C. (2012). The time divide in cross-national perspective: the work week, education and institutions that matter. *Soc. Forces* 91, 697–724. doi: 10.1093/sf/sos189

Glover, D., Pallais, A., and Pariente, W. (2017). Discrimination as a self-fulfilling prophecy: evidence from French grocery stores. *Q. J. Econ.* 132, 1219–1260. doi: 10.1093/qje/qjx006

Goetzel, R. Z., Henke, R. M., Tabrizi, M., Pelletier, K. R., Loeppke, R., Ballard, D. W., et al. (2014). Do workplace health promotion (wellness) programs work? *J. Occup. Environ. Med.* 56, 927–934. doi: 10.1097/JOM.0000000000000276

Han, E., Norton, E. C., and Powell, L. M. (2011). Direct and indirect effects of body weight on adult wages. *Econ. Hum. Biol.* 9, 381–392. doi: 10.1016/j.ehb.2011.07.002

Hoverd, W. J., and Sibley, C. G. (2007). Immoral bodies: the implicit association between moral discourse and the body. *J. Sci. Study Religion* 46, 391–403. doi: 10.1111/j.1468-5906.2007.00365.x

Hoyt, C. L., Burnette, J. L., Auster-Gussman, L., Blodorn, A., and Major, B. (2017). The obesity stigma asymmetry model: the indirect and divergent effects of blame and changeability beliefs on antifat prejudice. *Stigma Health* 2:53. doi: 10.1037/sah0000026

Kim, T. J., and von dem Knesebeck, O. (2018). Income and obesity: what is the direction of the relationship? A systematic review and meta-analysis. *BMJ Ppen* 8:e019862. doi: 10.1136/bmjopen-2017-019862

Lindsay, D. S., Simons, D. J., and Lilienfeld, S. O. (2016). *Research Preregistration 101*. Observer. Available online at: https://www.psychologicalscience.org/observer/research-preregistration-101 (Accessed 27.06.2018).

Macdonald, E. B., and Sanati, K. A. (2010). Occupational health services now and in the future: the need for a paradigm shift. *J. Occup. Environ. Med.* 52, 1273–1277. doi: 10.1097/JOM.0b013e3181f7cbf0

Major, B., Hunger, J. M., Bunyan, D. P., and Miller, C. T. (2014). The ironic effects of weight stigma. *J. Exp. Soc. Psychol.* 51, 74–80. doi: 10.1016/j.jesp.2013.11.009

Malik, S. H., Blake, H., and Suggs, L. S. (2014). A systematic review of workplace health promotion interventions for increasing physical activity. *Br. J. Health Psychol.* 19, 149–180. doi: 10.1111/bjhp.12052

Mantler, J., Schellenberg, E. G., and Page, J. S. (2003). Attributions for serious illness: are controllability, responsibility and blame different constructs? *Can. J. Behav. Sci.* 35, 142. doi: 10.1037/h0087196

Mattke, S., Liu, H., Caloyeras, J. P., Huang, C. Y., Van Busum, K. R., Khodyakov, D., et al. (2013). *Workplace Wellness Programs Study*. Santa Monica, CA: RAND Corporation, RR-254-DOL. As of May 1, 2015. Available online at: http://www.rand.org/pubs/research_reports/RR254.html

Meershoek, A., Bartholomée, Y., and Horstman, K. (2010). Vitaal en bevlogen: De economisering van de gezondheid van werknemers. *Beleid en Maatschappij* 37, 232–245.

Mensinger, J. L., Tylka, T. L., and Calamari, M. E. (2018). Mechanisms underlying weight status and healthcare avoidance in women: a study of weight stigma, body-related shame and guilt, and healthcare stress. *Body Image* 25, 139–147. doi: 10.1016/j.bodyim.2018.03.001

Mulder, L. B., Rupp, D. E., and Dijkstra, A. (2015). Making snacking less sinful: (counter-) moralising obesity in the public discourse differentially affects food choices of individuals with high and low perceived body mass. *Psychol. Health* 30, 233–251. doi: 10.1080/08870446.2014.969730

National Institute for Clinical Excellence (2018). *Obesity Prevention: Workplace Interventions*. Available online at: http://pathways.nice.org.uk/pathways/obesity (Accessed 26th August 2018).

Nosek, B., and Lindsay, D. S. (2018). Preregistration becoming the norm in psychological science. *APA Observ.* 31.

O'Brien, K. S., Latner, J. D., Ebneter, D., and Hunter, J. A. (2013). Obesity discrimination: the role of physical appearance, personal ideology, and anti-fat prejudice. *Int. J. Obes.* 37, 455. doi: 10.1038/ijo.2012.52

O'Brien, K. S., Latner, J. D., Halberstadt, J., Hunter, J. A., Anderson, J., and Caputi, P. (2008). Do antifat attitudes predict antifat behaviors? *Obesity* 16, 87–92. doi: 10.1038/oby.2008.456

Odeen, M., Magnussen, L. H., Mæland, S., Larun, L., Eriksen, H. R., and Tveito, T. H. (2012). Systematic review of active workplace interventions to reduce sickness absence. *Occup. Med.* 63, 7–16. doi: 10.1093/occmed/kqs198

Ogden, J., and Wardle, J. (1990). Control of eating and attributional style. *Br. J. Clin. Psychol.* 29, 445–446. doi: 10.1111/j.2044-8260.1990.tb00912.x

Osilla, K. C., Van, K. B., Schnyer, C., Larkin, J. W., Eibner, C., and Mattke, S. (2012). Systematic review of the impact of worksite wellness programs. *Am. J. Manag. Care* 18, e68-81.

Osumili, B., Henderson, C., Corker, E., Hamilton, S., Pinfold, V., Thornicroft, G., et al. (2016). The economic costs of mental health-related discrimination. *Acta Psychiatr. Scand.* 134, 34–44. doi: 10.1111/acps.12608

Pascoe, E. A., and Smart Richman, L. (2009). Perceived discrimination and health: a meta-analytic review. *Psychol. Bull.* 135, 531. doi: 10.1037/a0016059

Pearl, R. L., and Puhl, R. M. (2014). Measuring internalized weight attitudes across body weight categories: validation of the modified weight bias internalization scale. *Body Image* 11, 89–92. doi: 10.1016/j.bodyim.2013.09.005

Pescud, M., Teal, R., Shilton, T., Slevin, T., Ledger, M., Waterworth, P., et al. (2015). Employers' views on the promotion of workplace health and wellbeing: a qualitative study. *BMC Public Health* 15:642. doi: 10.1186/s12889-015-2029-2

Phelan, S. M., Burgess, D. J., Yeazel, M. W., Hellerstedt, W. L., Griffin, J. M., and van Ryn, M. (2015). Impact of weight bias and stigma on quality of care and outcomes for patients with obesity. *Obes. Revi.* 16, 319–326. doi: 10.1111/obr.12266

Phelan, S. M., Dovidio, J. F., Puhl, R. M., Burgess, D. J., Nelson, D. B., Yeazel, M. W., et al. (2014). Implicit and explicit weight bias in a national sample of 4,732 medical students: the medical student CHANGES study. *Obesity* 22, 1201–1120. doi: 10.1002/oby.20687

Pierce, J. W., and Wardle, J. (1997). Cause and effect beliefs and self-esteem of overweight children. *J. Child Psychol. Psychiatry* 38, 645–650.

Public health England (2018). *Adult obesity: Applying All Our Health*. Available online at: https://www.gov.uk/government/publications/adult-obesity-applying-all-our-health/adult-obesity-applying-all-our-health (Accessed 04 July 2018).

Puhl, R., and Brownell, K. D. (2001). Bias, discrimination, and obesity. *Obes. Res.* 9, 788–805. doi: 10.1038/oby.2001.108

Puhl, R., and Suh, Y. (2015). Health consequences of weight stigma: implications for obesity prevention and treatment. *Curr. Obes. Rep.* 4, 182–190. doi: 10.1007/s13679-015-0153-z

Quintiliani, L., Sattelmair, J., and Sorensen, G. (2007). "The workplace as a setting for interventions to improve diet and promote physical activity," in *Background Paper Prepared for the WHO/WEF Joint Event on Preventing Noncommunicable Diseases in the Workplace (Dalian/China, September 2007)*. Available online at: http://www.who.int/dietphysicalactivity/Quintiliani-workplace-as-setting.pdf (Accedded 15.08.2018).

Raves, D. M., Brewis, A., Trainer, S., Han, S. Y., and Wutich, A. (2016). Bariatric surgery patients' perceptions of weight-related stigma in healthcare settings impair post-surgery dietary adherence. *Front. Psychol.* 7:1497. doi: 10.3389/fpsyg.2016.01497

Roehling, M. V., Roehling, P. V., and Pichler, S. (2007). The relationship between body weight and perceived weight-related employment discrimination: the role of sex and race. *J. Vocat. Behav.* 71, 300–318. doi: 10.1016/j.jvb.2007.04.008

Rudolph, U., and Tscharaktschiew, N. (2014). An attributional analysis of moral emotions: naïve scientists and everyday judges. *Emot. Rev.* 6, 344–352. doi: 10.1177/1754073914534507

Schröer, S., Haupt, J., and Pieper, C. (2013). Evidence-based lifestyle interventions in the workplace—an overview. *Occup. Med.* 64, 8–12. doi: 10.1093/occmed/kqt136

Schvey, N. A., Sbrocco, T., Bakalar, J. L., Ress, R., Barmine, M., Gorlick, J., et al. (2017). The experience of weight stigma among gym members with overweight and obesity. *Stigma Health* 2:292. doi: 10.1037/sah0000062

Sutin, A. R., Stephan, Y., and Terracciano, A. (2015). Weight discrimination and risk of mortality. *Psychol. Sci.* 26, 1803–1811. doi: 10.1177/0956797615601103

Täuber, S. (2018). Moralized health-related persuasion undermines social cohesion. *Front. Psychol.* 9:909. doi: 10.3389/fpsyg.2018.00909

Täuber, S., and van Zomeren, M. (2012). Refusing intergroup help from the morally superior: how one group's moral superiority leads to another group's reluctance to seek their help. *J. Exp. Soc. Psychol.* 48, 420–423. doi: 10.1016/j.jesp.2011.08.014

Täuber, S., and van Zomeren, M. (2013). Outrage towards whom? Threats to moral group status impede striving to improve via out-group-directed outrage. *Eur. J. Soc. Psychol.* 43, 149–159. doi: 10.1002/ejsp.1930

Täuber, S., van Zomeren, M., and Kutlaca, M. (2015). Should the moral core of climate issues be emphasized or downplayed in public discourse? Three ways to successfully manage the double-edged sword of moral communication. *Clim. Change* 130, 453–464. doi: 10.1007/s10584-014-1200-6

Teachman, B. A., Gapinski, K. D., Brownell, K. D., Rawlins, M., and Jeyaram, S. (2003). Demonstrations of implicit anti-fat bias: the impact of providing causal information and evoking empathy. *Health Psychol.* 22, 68–78. doi: 10.1037/0278-6133.22.1.68

Tomiyama, A. J., Finch, L. E., Belsky, A. C. I., Buss, J., Finley, C., Schwartz, M. B., et al. (2015). Weight bias in 2001 versus 2013: contradictory attitudes among obesity researchers and health professionals. *Obesity* 23, 46–53. doi: 10.1002/oby.20910

Townend, L. (2009). The moralizing of obesity: a new name for an old sin? *Criti. Soc. Pol.* 29, 171–190. doi: 10.1177/0261018308101625

van Berkel, J., Meershoek, A., Janssens, R. M., Boot, C. R., Proper, K. I., and van der Beek, A. J. (2014). Ethical considerations of worksite health promotion: an exploration of stakeholders' views. *BMC Public Health* 14:458. doi: 10.1186/1471-2458-14-458

Walters, R. (n.d.). *The Value of Promoting Employee Health and Wellbeing*. Available online at: https://www.robertwalters.com/content/dam/robert-walters/corporate/news-and-pr/files/whitepapers/health-and-wellbeing-whitepaper-aus.pdf (Accessed 26th August 2018).

Weiner, B. (1985). An attributional theory of achievement motivation and emotion. *Psychol. Rev.* 92, 548–573. doi: 10.s/0033-295X.92.4.548

Weiner, B. (1995). "Attribution theory in organizational behavior: a relationship of mutual benefit," in *Attribution Theory: An Organizational Perspective*, ed M. J. Martinko (Danvers, MA: St Lucie Press), 3–6.

Weiner, B. (2000). Intrapersonal and interpersonal theories of motivation from an attributional perspective. *Educ. Psychol. Rev.* 12, 1–14. doi: 10.1023/A:1009017532121

Weiner, B., Perry, R. P., and Magnusson, J. (1988). An attributional analysis of reactions to stigmas. *J. Pers. Soc. Psychol.* 55, 738. doi: 10.1037/0022-3514.55.5.738

World Health Organisation (2002). *The World Health Report 2002 - Reducing Risks, Promoting Healthy Life*. Available online at: http://www.who.int/whr/2002/en/ (Accessed 13 July 2018).

World Health Organisation (2010). *Workplace Health Promotion. The Workplace: A Priority Setting for Health Promotion.* Available online at: http://www.who.int/occupational_health/topics/workplace/en/ (Accessed 13 July 2018).

World Health Organisation (2017). *Overweight and Obesity*. Available online at: http://www.who.int/en/news-room/fact-sheets/detail/obesity-and-overweight (Accessed 04 July 2018).

Conflict of Interest Statement: The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

frontiers in Psychology

ORIGINAL RESEARCH
published: 11 December 2018
doi: 10.3389/fpsyg.2018.02497

Whose Issue Is It Anyway? The Effects of Leader Gender and Equality Message Framing on Men's and Women's Mobilization Toward Workplace Gender Equality

Stephanie L. Hardacre and Emina Subašić*

School of Psychology, University of Newcastle, Callaghan, NSW, Australia

Social psychologists have not fully investigated the role of leadership in mobilizing widespread support for social change, particularly gender equality. The burden of achieving gender equality is typically placed on women (particularly female leaders) – the main targets of such inequality. Traditional approaches frame workplace gender equality as either a *women's issue*, which limits men's (non-target's) involvement in the movement, or a *meritocratic non-issue* that exists due to women's (target's) tendency to pursue less intensive careers. In contrast to such work focusing on women's experiences as targets of discrimination or men's role in preserving inequality, we propose a solidarity-based approach that positions men and women as *agents of change*. This approach relies on two processes: leadership processes – particularly leadership as a form of influence based on shared identities among leaders and followers (e.g., their gender group); and political solidarity as a way to mobilize the silent majority (men) to work as allies beside a minority (women) and embrace equality as a common cause for *both* groups. In two experiments (*Ns* = 338, 336) we studied how leader gender and message framing affect men's and women's support for equality by contrasting a solidarity-based framing of gender equality as a common cause for men and women, with a women's issue frame (Experiment 1) or a meritocratic frame (Experiment 2). The statement was attributed to a male or female leader (Experiments 1–2) or, additionally, to a government agency (Experiment 1). Women reported higher sense of common cause (Experiment 2) and collective action intentions than men (Experiments 1–2), and higher intentions under common cause compared to meritocracy frames (Experiment 2). Interestingly, male leaders invoked higher sense of common cause and collective action intentions for both men *and* women regardless of framing (Experiment 2). Irrespective of leader gender however, as predicted common cause framing boosted perceived leader prototypicality, legitimacy, and influence across the board (Experiments 1–2). Yet this was qualified by women (compared to men) rating leaders as more legitimate and influential under common cause compared to meritocracy framing (Experiment 2). Women's reactions to equality messages, and the intersection of leadership and solidarity toward equality are discussed.

Keywords: gender equality, leadership, solidarity action, social change, social identity, collective action, legitimacy, message framing

OPEN ACCESS

Edited by:
Thekla Morgenroth,
University of Exeter, United Kingdom

Reviewed by:
Helena Radke,
University of Osnabrück, Germany
Morgana Lizzio-Wilson,
The University of Queensland, Australia

****Correspondence:***
Stephanie L. Hardacre
stephanie.hardacre@uon.edu.au

Specialty section:
This article was submitted to Organizational Psychology, a section of the journal Frontiers in Psychology

Received: *31 August 2018*
Accepted: *23 November 2018*
Published: *11 December 2018*

Citation:
Hardacre SL and Subašić E (2018) Whose Issue Is It Anyway? The Effects of Leader Gender and Equality Message Framing on Men's and Women's Mobilization Toward Workplace Gender Equality. Front. Psychol. 9:2497. doi: 10.3389/fpsyg.2018.02497

INTRODUCTION

The burden of achieving gender equality has traditionally been placed on women (particularly female leaders), who are usually the main targets of such inequality (Rindfleish and Sheridan, 2003). Typical approaches and responses to gender inequality tend to frame the issue as either the responsibility of women alone to address (e.g., 'women's work'; Mavin, 2008), or as a meritocratic 'non-issue' existing only due to women's tendency to embark on less demanding education and career trajectories (Whelan, 2013). Placing the responsibility on women alone (as both women's issue and meritocratic frames do) alleviates men's prerogative to support women affected by inequality and provides them ample rationalization to abstain from doing so (Becker and Barreto, 2014). Meritocratic frames of gender equality imply that so long as individuals work hard, they should measure up favorably against necessary employment criteria and subsequently succeed in the workplace (Williams, 2015). When used as an explanation for why gender inequality exists, they have been shown to reduce men's understanding of inequality (de Vries, 2010) and decrease the likelihood of women acting collectively against it (Major et al., 2002).

In contrast to work focusing on women's experiences as targets of discrimination or men's role in maintaining inequality, in this paper we take a political solidarity-based approach using common cause message framing. Such framing utilizes inclusive language that emphasizes solidarity between men and women and makes salient (leaders' and) followers' shared social identity (Fiol et al., 1999). This solidarity-based approach positions both men and women as 'agents of change' in a concerted effort to engage a broader audience of women *and* men (i.e., targets and non-targets; see Subašić et al., 2018). The political solidarity model (Subašić et al., 2008) conceptualizes social change as a process through which members of a majority (e.g., men) challenge the authority (e.g., male-dominated systems) in solidarity with the minority (e.g., women). In contrast to traditional frames of men as perpetrators and women as victims, this approach positions gender equality as a common cause for men and women to address together – as "comrades in struggle" (hooks, 1984, p. 67). This approach relies on two key processes. Firstly, leadership and influence processes based on shared social identity with those seeking to advance social change. The second process involves the concept of political solidarity as a way of mobilizing the silent majority (i.e., men as an over-represented group within the workplace) to work as allies alongside a minority (i.e., women as an under-represented group) and embrace gender equality as a common cause for *both* groups (i.e., men and women; Subašić et al., 2018).[1]

In line with these ideas, Seyranian (2014) found that within a renewable energy context, leaders who highlighted shared grievances of the collective group were evaluated as more prototypical, effective, trustworthy, and persuasive, and inspired greater collective action among their male and female followers. Wiley et al. (2012) also found that men were more likely to participate in collective action if they believed that many men supported gender equality, which common cause framing infers. Finally, Subašić et al. (2018) demonstrated that framing gender equality as a common cause for both men and women (rather than a women's issue) heightened men's *and* women's collective action intentions. However, while women were mobilized by both male and female leaders, men were mobilized primarily by male leaders who espoused a common cause message (and less so by male leaders who focused on gender equality as a women's issue). This research demonstrates that not only does it matter *what* is being said (i.e., the message frame), but also *who* is saying it (i.e., the leader) and to *whom* (i.e., the target; see also Subašić et al., 2012). To the extent leaders can foster a sense of common cause or solidarity among followers by realigning their personal self-interests with broader collective goals, collective mobilization can be expected (Turner et al., 2008).

This sense of common cause refers to men's and women's feelings of solidarity with those women affected by gender inequality. It involves sharing similar viewpoints, values, concerns, and goals with those people who object to and seek to reduce gender-based inequality (Subašić et al., 2018). This sense of common cause (and shared identity) most readily arises when leaders and followers share a salient in-group (e.g., their gender group; Haslam et al., 2011; Wiley et al., 2012). Indeed, by enhancing self-categorical bonds between themselves and their relevant in-group, in-group leaders are more effective than outgroup leaders at influencing followers (Duck and Fielding, 2003). Finally, because gender is one of the most salient in-groups (Fiske, 1998), and arguably at its *most* salient within gender inequality contexts, people are not only conscious of their own gender in such contexts but also whether those leading the charge toward equality are men or women. Yet research has largely neglected the intricacies of gender and leadership when examining when and why female (and male) equality leaders might mobilize support for gender equality (Powell, 1990).

Increased awareness of leader gender can negatively affect female equality leaders because they suffer particular disadvantage within masculine organizational contexts due to prejudicial evaluations regarding their competency (Eagly and Carli, 2003). Moreover, when female leaders *do* adopt masculine behaviors (i.e., those seen as prototypical of leaders), they violate communal expectations of women and face backlash effects (Okimoto and Brescoll, 2010). Women also face accusations of self-interest (de Vries, 2015). This can destabilize their social change efforts (Eagly et al., 1978), with female leaders typically being perceived as less legitimate and influential compared to their male counterparts who face no such accusations (Drury and Kaiser, 2014). Feminists in general also face widespread stigmatization which can delegitimize their calls for equality (Kamen, 1991). For example, Anastosopoulos and Desmarais (2015) found undergraduates evaluated a job candidate less positively when she identified as a feminist, and feminist women are typically viewed as angry, unattractive, man-hating extremists (Faludi, 1991).

[1]In this context the terms 'minority' and 'majority' are not referring exclusively to numerical categories but instead signify the social power available to women and men, in addition to their overall representativeness within the workplace and leadership positions. Thus women can be thought of as an under-represented group and men as an over-represented group (Subašić et al., 2008).

In contrast, male leaders and feminist men receive more favorable evaluations (Eagly and Carli, 2003; Anderson, 2009) and encounter positive reactions when drawing attention to gender inequality (Rasinski and Czopp, 2010). However, while feminist men are viewed more positively than feminist women, they are also perceived as less stereotypically masculine or heterosexual, which can affect their readiness to identify as feminists and participate in equality efforts (Anderson, 2009). Yet sexism confrontations by men are more successful than those by women because men are seen as acting counter to group interests and as having something to lose, ultimately affording them greater legitimacy than female leaders (Czopp and Monteith, 2003; Drury and Kaiser, 2014). Certainly, Cihangir et al. (2014) found that suggestions of sexism by male sources were more beneficial to female targets than suggestions by female sources (e.g., targets exhibited increased self-confidence and greater likelihood of filing a complaint). Alternatively, Drury (2013) discovered that female observers of sexism confrontations were unaffected by confronter gender, which makes sense given confrontations by either gender aim to elevate women's social status.

Therefore it seems an asymmetry exists regarding male versus female leaders' capacity to mobilize men's and women's support for gender equality (Subašić et al., 2018). To examine this idea, we extend Subašić et al. (2018) work in a novel way by assessing the psychological processes underlying leader influence and measuring whether participants' attitudes and evaluations of those leading the charge for equality differ based on leaders' gender. However, just as focusing exclusively on women is inadequate for achieving equality, viewing male leaders' engagement as the panacea for inequality is equally naïve (de Vries, 2015). Accordingly, the present research examines the role of leader gender and solidarity-based message framing in mobilizing support for gender equality by men and women, to determine under what conditions these factors do or *do not* affect mobilization toward equality.

In two experiments, we use manipulation statements attributed to either a male or female leader (Experiments 1–2) to examine whether the gender of the leader affects their capacity to mobilize support for equality, as extant literature suggests (e.g., Seyranian, 2014; Subašić et al., 2018). In Experiment 1, we additionally attribute the statement to a gender-neutral control (i.e., a government agency), against which the effects and impact of leader *gender* can be compared. It was hoped that inclusion of this control would serve as a valid baseline, allowing us to further investigate participants' responses to male and female leaders relative to a non-gendered control condition (further extending Subašić et al., 2018). We also contrast solidarity-based frames of gender equality as a common cause with traditional approaches framing equality as a women's only issue (Experiment 1) or a meritocratic issue (Experiment 2), to determine whether the way in which the equality message is framed affects support for equality. We focus on two sets of outcome variables: mobilization variables [including collective action intentions (Experiments 1–2) and sense of common cause (Experiment 2)], and leadership variables [including leader prototypicality, legitimacy, and influence (Experiments 1–2)].

In line with Seyranian (2014), we hypothesize that when gender equality is framed as a common cause rather than a women's issue (Experiment 1) or a meritocratic issue (Experiment 2), men and women will report higher collective action intentions and sense of common cause (Hypothesis 1a). Similarly, we also predict that when gender equality is framed as a common cause rather than a women's issue (Experiment 1) or a meritocratic issue (Experiment 2), men and women will evaluate leaders as being more prototypical, legitimate, and influential (Hypothesis 1b). Finally, as per Subašić et al. (2018), we hypothesize that while women's collective action intentions and sense of common cause will remain stable regardless of who promotes equality, men's intentions and sense of common cause will be higher when the equality message is attributed to a male leader rather than a female leader (Experiments 1–2) or a government agency (Experiment 1), especially under common cause compared to women's issue (Experiment 1) or meritocratic messages (Experiment 2; Hypothesis 2).

EXPERIMENT 1

Methods

Participants and Design

Participants were students at a large Australian university or members of the general public (N = 480, 240 women), between 17 and 68 years (M_{age} = 26.37, SD = 9.41). They were recruited online via Facebook or Reddit (72%), or the university's research participation program (28%). The results did not differ between these groups. Participants comprised 44% Australians, 35.8% Americans, 5.4% Canadians, 5.2% English, and 9.6% other. They were employed on a full- (33.5%), part-time (18.5%), or casual (17.9%) basis, or identified as unemployed (26.76%) or other (3.3%). Sixty-one percent were studying full- (50.2%) or part-time (8.8%) domestically, or full-time internationally (1.7%), with the remaining 39% not currently studying. The study was a 2 (participant gender: male, female) × 3 (leader gender: male leader, female leader, government agency) × 2 (message framing: women's issue, common cause) factorial design, with equal numbers of men and women being allocated at random to one of six conditions.

An effect size of approximately r = 0.15 is typical in the field of psychology, which is equivalent to a partial eta-squared (η_p^2) of 0.0225 (Cafri et al., 2010). Thus an *a priori* statistical power analysis using Faul et al. (2007) G*Power 3 program revealed that for a power of 0.80 (α = 0.05) the minimum sample to detect a small effect size of η_p^2 = 0.0225 (or f = 0.151) using a 2 × 3 × 2 ANOVA is 422 (35 participants per cell). We increased this to 480 (40 per cell) to reach sufficient power after the anticipated exclusion of participants who failed the leader gender manipulation check. Sensitivity power analyses revealed that our actual obtained sample size (338) had the power to detect effect sizes of: η_p^2 = 0.0228 (or f = 0.152) for the participant gender and message framing main effects and participant gender × message framing interaction, and η_p^2 = 0.0280 (or f = 0.169) for the leader gender main effect and all remaining two- and three-way interactions.

Procedure and Materials

Participants completed a 15-min online questionnaire containing the experimental manipulations and dependent measures described below (full materials can be found in the **Supplementary Material**). The study was conducted in accordance with the principles and recommendations of the National Statement on Ethical Conduct in Human Research (2007), as per the University of Newcastle's Human Research Ethics Committee. The protocol was approved by the University of Newcastle's Human Research Ethics Committee (Protocol Number: H-2015-0143), which is affiliated with the National Health and Medical Research Council of Australia. All participants gave electronic informed consent in accordance with the Declaration of Helsinki. Participants were debriefed and offered the opportunity to withdraw.

Leader gender and message framing manipulations

A one-page press release ostensibly detailed the Gender Equality Commission[er]'s formation of a new group whose goal was to "address gender-based discrimination, sexual harassment, and other barriers to gender equality." The vignette described gender inequality (e.g., "Women continue to earn less than men for equal work, and are less likely to be promoted to leadership positions compared to men"), and the group's progress toward their goal in an annual report (e.g., "increase the number of women in leadership positions within companies and decrease the gender pay gap"). Leader gender (male, female, government agency) was manipulated by changing the Commission[er]'s name (e.g., "Margaret [Matthew] Jamieson" vs. "The Commission") and using relevant pronouns (e.g., "her [his, our], she [he, it]"). Message framing (women's issue, common cause) was manipulated via equality group name (e.g., "[Men and] Women for Gender Equality") and message content (e.g., "it is vital [men and] women are engaged and committed to tackling this issue [together]," "[men and boys] working [together] with women and girls"). The Commission[er] communicated their pledge "to serve the [men and] women of this world" and stated their group "builds on the excellent work of all those [men and] women currently committed to achieving gender equality."

Manipulation checks

All measures used 7-point Likert scales (1 = strongly disagree/not at all, 4 = neither agree nor disagree/somewhat, 7 = strongly agree/very much so). To assess the manipulation's success, participants identified the Commission[er]'s gender (male/female/not stated), and rated the extent to which the vignette provided information regarding inequality being (a) a women's only issue or (b) a common cause for men and women.

Collective action intentions

Eight items (α = 0.95) measured participants' collective action intentions supporting gender equality (adapted from van Zomeren et al., 2004; Glasford and Calcagno, 2012). Example items included: "[Imagine you were approached by the Commission and asked to participate in their latest campaign for gender equality. In response, would you be willing to…] Sign a petition to stop inequality against women," "Talk to male [female] colleagues about gender inequality."

Leader prototypicality

Five items (α = 0.85) measured participants' perceived prototypicality of the leader (adapted from Platow and van Knippenberg, 2001). For example, "[Thinking of the gender equality movement and people who support it, would you say the Commission:] Is representative of members of the movement," and "Stands for what people in the movement have in common."

Leader legitimacy

Four purpose-built items assessed the leader's perceived legitimacy ("…do you think the Gender Equality Commission's statement was Legitimate/Justified/Valid/Reasonable"; α = 0.96).

Leader influence

Four items measured the leader's perceived influence (adapted from Wiley et al., 2012; "…do you think the Gender Equality Commission's statement was Persuasive/Convincing/Compelling/Credible"; α = 0.92).

Results

SPSS Version 23 was used to perform between-participants ANOVA's on all dependent variables, with participant gender, leader gender, and message framing as factors.

Manipulation Checks

Frequency statistics confirmed that 70% of participants correctly identified the Commission[er]'s gender (68.1% male, 72.5% female, 70% not stated). Participants who failed to correctly identify the leader's gender were excluded from further analyses, bringing the final sample to 338 (167 women). Participant exclusion distribution rates did not differ significantly by condition [$\chi(5) = 6.321$, $p = 0.276$], and are reported alongside final participant gender distributions for each cell in **Table 1**.

Participants in the women's issue conditions were significantly more likely than participants in the common cause conditions to agree that the article discussed "The need for women alone to stand up for equality" and "Inequality being a women's only issue" [$F(1,336) = 55.986$, $p < 0.001$, $\eta_p^2 = 0.143$; Ms = 3.80 and 2.53, SDs = 1.60 and 1.50, respectively). In contrast, participants in the common cause conditions were significantly more likely than participants in the women's issue conditions to agree that the article discussed "The need for both men and women to stand up for equality" and "Inequality being a men's and women's issue" [$F(1,336) = 109.870$, $p < 0.001$, $\eta_p^2 = 0.246$; Ms = 5.90 and 4.06, SDs = 1.40 and 1.80, respectively). No other significant effects were found, indicating that our manipulations were successful.

Correlations

Inspection of the correlations assessing relationships between the dependent variables indicated that these were measured reliably and are consistent with existing research (see **Table 2**).

Mobilization Variables

As reported below, contrary to Hypothesis 1a neither men nor women reported higher collective action intentions under common cause (compared to women's issue) framing. Additionally, Hypothesis 2, which predicted that men (but not women) would report higher intentions under male leaders

TABLE 1 | Participant exclusion distribution rates and final participant gender distribution numbers by condition, based on participants who failed the leader gender manipulation check.

Condition	% of participants who failed the manipulation check	Number of male participants remaining	Number of female participants remaining	Number of overall participants remaining
Male leader, women's issue	25	30	30	60
Male leader, common cause	38.75	28	21	49
Female leader, women's issue	25	26	34	60
Female leader, common cause	30	27	29	56
Government agency, women's issue	33.75	28	25	53
Government agency, common cause	25	32	28	60
Totals	30	171	167	338

The third and fourth columns represent the number of male and female participants remaining in each condition following the exclusion of those participants who failed the leader gender manipulation check.

TABLE 2 | Means, standard deviations, and correlations (Spearman's rho) among study variables.

Dependent variable	*M*	*SD*	Leader prototypicality	Leader legitimacy	Leader influence
Collective action intentions	4.63	1.79	0.261**	0.548**	0.526**
Leader prototypicality	4.56	1.05		0.559**	0.597**
Leader legitimacy	4.95	1.73			0.783**
Leader influence	4.18	1.53			

*N = 338. **p = 0.01 (two-tailed).*

(compared to female or government leaders), particularly under common cause messages, was not supported. Instead, men (and women) reported similar collective action intentions irrespective of leader gender and message framing.

Collective action intentions

Absence of a significant main effect of message framing failed to provide support for Hypothesis 1a, which predicted that men and women would report higher intentions under common cause compared to women's issue framing. Instead, participants reported similar collective action intentions regardless of how the message was framed [$M_{\text{common cause}}$ = 4.73, SD = 1.68; $M_{\text{women's issue}}$ = 4.52, SD = 1.88; $F(1,326) = 2.10$, $p = 0.148$, $\eta_p^2 = 0.006$].

Our three-way prediction that men would report higher collective action intentions under male leaders, particularly under common cause messages (H2), was not supported, $F(2,326) = 0.753$, $p = 0.472$, $\eta_p^2 = 0.005$.

Finally, a significant main effect of gender revealed that women (M = 5.23, SD = 1.61) expressed higher collective action intentions than men (M = 4.03, SD = 1.75), $F(1,326) = 45.176$, $p < 0.001$, $\eta_p^2 = 0.122$. All other main effects and interactions were non-significant, all $F \leq 0.718$, $ps \geq 0.489$, $\eta_p^2 \leq 0.004$.

Leadership variables

Supporting Hypothesis 1b, all participants consistently rated leaders as being significantly more prototypical, legitimate, and influential when leaders framed gender equality as a common cause for men and women to work toward together, as opposed to an issue concerning women alone (reported below).

Leader prototypicality

A main effect of message framing revealed that in line with Hypothesis 1b, participants perceived leaders as being significantly more prototypical of the gender equality movement when they promoted common cause (M = 4.71, SD = 0.98) rather than women's issue framing (M = 4.43, SD = 1.11), $F(1,326) = 5.972$, $p = 0.015$, $\eta_p^2 = 0.018$. None of the remaining main effects or interactions reached significance, all $F \leq 2.373$, $ps \geq 0.095$, $\eta_p^2 \leq 0.014$.

Leader legitimacy

Supporting Hypothesis 1b, a main effect of message framing demonstrated that participants viewed leaders as being significantly more legitimate when they promoted common cause (M = 5.17, SD = 1.55) rather than women's issue framing (M = 4.75, SD = 1.87), $F(1,326) = 5.874$, $p = 0.016$, $\eta_p^2 = 0.018$. A main effect of gender also showed that women (M = 5.26, SD = 1.62) perceived leaders to be significantly more legitimate than men did (M = 4.66, SD = 1.79), $F(1,326) = 10.304$, $p < 0.001$, $\eta_p^2 = 0.031$. All other main effects and interactions were non-significant, all $F \leq 1.151$, $ps \geq 0.318$, $\eta_p^2 \leq 0.007$.

Leader influence

Replicating all other leadership evaluation findings and supporting Hypothesis 1b, participants perceived leaders to be significantly more influential when they promoted gender equality as a common cause (M = 4.40, SD = 1.44) compared to a women's issue (M = 3.98, SD = 1.58), $F(1,326) = 7.355$, $p = 0.007$, $\eta_p^2 = 0.022$. Similar to our leader legitimacy results, a main effect of gender again showed that women (M = 4.52, SD = 1.39) rated leaders as more influential than men did (M = 3.84, SD = 1.58), $F(1,326) = 18.028$, $p < 0.001$, $\eta_p^2 = 0.052$. No other main effects or interactions were significant, all $F \leq 0.932$, $ps \geq 0.395$, $\eta_p^2 \leq 0.006$.

Discussion

Experiment 1 saw gender equality being promoted by either a male or a female leader, or a gender-neutral government agency, and framed as either a common cause for men and women to combat, or as an issue concerning women alone. Overall, women reported higher collective action intentions than men (addressed in the section "General Discussion"). However, our prediction that framing equality as a common cause (rather than a women's issue) would result in increased mobilization toward equality (H1a) was not supported. Instead, men and women reported equal collective action intentions irrespective of how equality was promoted. This is in contrast to Subašić et al. (2018), who found common cause framing heightened participants' collective action intent (although for men, this effect only emerged when a male leader promoted the common cause message). Indeed, a key aim was to examine whether the source of the gender equality message being a male leader (compared to a female or government leader) would increase men's mobilization toward equality, particularly under common cause messages (H2). However, this hypothesis was not supported. Instead, men and women expressed similar collective action intentions irrespective of who promoted the equality message and how.

While our collective action findings do not reflect Subašić et al. (2018), the present work extends theirs in a novel way by explicitly examining the leadership and influence processes underlying participants' mobilization. Importantly, our prediction that solidarity-based common cause frames of gender equality would elicit more positive evaluations of leaders (as per Seyranian, 2014; H1b) was supported. Indeed, when leaders highlighted equality as a common cause rather than a women's issue, participants consistently perceived those leaders as being significantly more prototypical, legitimate, and influential – a pattern which emerged irrespective of leader gender. These novel findings are addressed in the section "General Discussion."

EXPERIMENT 2

Experiment 2 aimed to build upon Experiment 1 (and Subašić et al.'s 2018 paper) and manipulate the perceived legitimacy of inequality by contrasting common cause framing with meritocratic framing. In contrast to traditional women's issue approaches which subtly place the responsibility for addressing inequality onto women, meritocracy framing more blatantly assigns the blame for inequality to women. Indeed, meritocratic ideology preserves workplace inequality by implying it is partly women's fault due to their tendency to pursue less intensive career and education paths (Whelan, 2013). Such ideology argues that so long as women gain the necessary experience, they should climb the meritocratic hierarchy with ease (Cech and Blair-Loy, 2010). This framing echoes Sandberg's (2013) 'lean in' philosophy, which maintains that if only women would show up and "sit at the table" (p. 27), learn to master negotiation techniques, take advantage of mentorship and leadership opportunities, and commit to their own individual growth, they would succeed in the workplace. Essentially, this kind of meritocratic framing legitimizes gender inequality by foisting blame onto the individual failings of people, rather than considering discriminatory structural factors that genuinely undermine the achievement of equality (Major and Schmader, 2001). Understandably then, meritocracy is often proffered as an argument or excuse for abolishing affirmative action policies such as quotas or preferential treatment strategies which take into account minority or under-represented group status, because these strategies are perceived as violating meritocratic principles (Son Hing et al., 2002).

Meritocratic justifications of gender inequality are thus particularly troublesome given that the perceived illegitimacy of gender inequality is a key predictor for participation in collective action (van Zomeren et al., 2008). Indeed, the more one perceives gender inequality to be unjust or illegitimate, the higher one's likelihood of participating in collective action, and vice versa (van Zomeren et al., 2008). Certainly, unquestioning adherence to meritocratic ideals is known to undermine men's understanding of gender inequality (de Vries, 2010), and decrease women's likelihood of acting collectively against inequality (Major et al., 2002). For example, Jetten et al. (2011) found that higher perceived legitimacy and pervasiveness appraisals of discrimination were linked to lowered collective action intentions among women in academia. McCoy and Major (2007) also showed that priming meritocratic beliefs among women (e.g., "effort leads to prosperity," p. 343) resulted in them justifying group disadvantage by reducing their perceptions of discrimination. Similarly, men and women were more likely to accept gender inequality following exposure to essentialist theories of social change, such as the belief that gender-based labor segregation is due to innate biological differences between men and women (Morton et al., 2009). However, these studies relied on either providing false feedback regarding fellow female employee's legitimacy appraisals, or simply priming meritocratic and essentialist beliefs, rather than explicitly manipulating the suggested reasons behind gender inequality's existence.

In contrast, study designs that *do* experimentally manipulate the perceived legitimacy of gender inequality and measure the effects on individuals' mobilization allow for the assumed causal direction to be tested (van Zomeren et al., 2008). Accordingly, Experiment 2 saw workplace inequality being framed either as a common cause for men and women to work toward together, or as an issue existing due to meritocratic reasons. By explicitly manipulating the perceived legitimacy of gender inequality, we hoped to examine the effects that legitimacy appraisals or explanations have on men's and (particularly) women's responses to calls for gender equality. Additionally, we expected that contrasting common cause framing with a more polarizing version of women's issue framing (i.e., meritocracy) would strengthen the effects of common cause framing on participants' mobilization. Indeed, implying that inequality exists for legitimate reasons further absolves men of any responsibility to combat it (Whelan, 2013).

Furthermore, inclusion of the government agency in Experiment 1 may have contributed to the flattening of responses we observed on our leader gender factor. Due to this, and given the importance of leadership processes to mobilization and our desire to determine the effects of leader *gender* on mobilization,

we focused solely on male and female leaders in Experiment 2. A lack of statistical power in Experiment 1 might further explain our lack of significant findings, given 30% of participants were excluded due to failing the leader gender manipulation check. This resulted in Experiment 1's cell size decreasing from the recruited 40 participants per cell to an average of only 28 participants per cell. Consequently, we improved Experiment 2's power by increasing the sample size from 40 to 45 per cell. We also measured participants' sense of common cause (i.e., solidarity; Subašić et al., 2018), given solidarity is of key importance to the present paper. This measure seeks to better assess men's and women's sense of solidarity with those women affected by gender inequality. Finally, belief in meritocracy is a core American ideology (Kluegel and Smith, 1986), therefore an American sample was used as it was presumed meritocratic explanations of inequality would be most familiar to Americans, regardless of whether they themselves endorse the ideology (McCoy and Major, 2007).

Methods

Participants and Design

Participants were 360 White Americans (180 women), aged 18–65 years (M_{age} = 34.13, *SD* = 11.66), who were recruited via crowdsourcing website Prolific (2017) and remunerated $1.15 USD. Prolific allows recruitment of naïve participants based on specified criteria (e.g., employment status), and use of such crowdsourcing portals efficiently and appropriately produces data with similarly good reliability as found in typical undergraduate samples (Behrend et al., 2011). Participants were employed on a full- (63.9%), part-time (18.3%), self-employed (13.6%), casual (2.2%), or other (1.9%) basis. Students comprised 19.4% of the sample, while 80.6% were not currently studying. The study followed a 2 (participant gender: male, female) × 2 (leader gender: male leader, female leader) × 2 (message framing: meritocratic issue, common cause) factorial design with equal numbers of men and women being randomly allocated to one of the four conditions.

A G*Power analysis revealed that for a power of 0.80 ($\alpha = 0.05$), the minimum sample to detect a small effect size of $\eta_p^2 = 0.0225$ (or $f = 0.151$) using a 2 × 2 × 2 ANOVA should be 343 participants (approximately 42 per cell). We increased this to 360 (45 per cell) to obtain sufficient power following the expected removal of those who failed the leader gender manipulation check. Sensitivity power analyses showed that our obtained sample size (336 participants) had the power to detect effect sizes of $\eta_p^2 = 0.0228$ (or $f = 0.152$) for all main effects and interactions.

Procedure and Materials

Participants completed a 15-min online questionnaire following the same procedure as in Experiment 1. The full materials can be found in the **Supplementary Material**.

Leader gender and message framing manipulations

We imbued Experiment 2's vignette with an increased emphasis on corporate culture depictions of workplace inequality issues, given our sample consisted primarily of employed participants who presumably had greater workplace experience compared to Experiment 1's sample, which consisted primarily of younger students (M_{age} = 26.37, SD = 9.41; 61% studying; 52% employed). Accordingly, although leader gender (male, female) was manipulated in the same manner as in Experiment 1 ("Margaret [Matthew]," "her [his]"), the Gender Equality Commissioner was replaced with the Chief Delegate to the Organization for Economic Co-Operation and Development. Additionally, in both message framing conditions, the Chief Delegate first described their aspirations to address pay and leadership disparities within the business and corporate world in particular (e.g., "increase the number of women in business leadership positions," "women still comprise only 21% of board members and 9% of CEOs globally").

Our message framing manipulation consisted of one additional paragraph that framed inequality as either an issue that primarily exists due to meritocratic reasons and that women can overcome so long as they exert sufficient effort in the workplace (meritocratic issue), or a common cause for both men and women to address together (common cause). The meritocratic manipulation paragraph stated: "While gender inequality continues to be a significant social and economic issue, those women who are in senior management roles show that it is possible to move up the leadership ladder by working hard, 'leaning in,' and making sacrifices. These women demonstrate that all individuals can succeed in the workplace irrespective of their gender — as long as they are prepared to invest the time, energy, and significant effort needed for such advancement. Indeed, in the business world, those who apply themselves and make sacrifices along the way reap the rewards, because business — and society more broadly — has always rewarded hard work." The common cause manipulation stated "While gender inequality continues to be a significant social and economic issue, it is now an issue that matters to both men and women. However, our report shows that progress toward this common goal has stalled, which is why it's important that both parties are engaged and committed to tackling this issue together. Admittedly, while there is no 'silver bullet,' we know that men and boys working together with women and girls to promote gender equality contributes to achieving a host of health and developmental outcomes, not just those within the business world."

Manipulation checks

Participants identified the gender of the Chief Delegate (male/female), then rated the extent to which inequality was discussed as (a) a meritocratic issue or (b) a common cause.

Collective action intentions

Six items assessed participants' collective action intentions toward achieving gender equality (α = 0.91; adapted from Calogero, 2013; Subašić et al., 2018). Sample items included: "[Imagine that the Chief Delegate has approached you directly to help with their campaign for gender equality. In that context, please rate the extent to which you agree with the following statements. . .] Sign a petition (in person or online) in support of

women's rights and gender equality," "I would vote for a political party that fights against gender inequality."

Sense of common cause

Four items measured participants' sense of common cause (i.e., solidarity) with those women affected by gender inequality (α = 0.96; adapted from Subašić et al., 2018). Sample items included: "Those seeking to reduce income inequality and leadership disparities between men and women share my goals and concerns," "I feel solidarity with the women affected by income inequality and leadership disparities," and "I see myself as someone who shares the views of the women who object to these forms of inequality."

Leadership measures

Measures of leader prototypicality (α = 0.95), legitimacy (α = 0.95), and influence (α = 0.95) were identical to those used in Experiment 1.

Results

To investigate the effects of message framing on men's and women's responses, significant participant gender × message framing interactions were unpacked by performing separate one-way ANOVA's on relevant dependent variables at both levels of participant gender.

Manipulation Checks

Frequency statistics revealed 93% of participants identified the Chief Delegate's gender correctly (95.6% male, 91.1% female). The 24 participants (7%) who failed this check were excluded from further analyses, hence the final sample comprised 336 (170 women). Participant exclusion distribution rates did not differ significantly by Condition [$\chi(3) = 3.571$, $p = 0.312$] and are reported below in **Table 3** alongside final participant gender distributions for each cell. The higher percentage of participants passing the leader gender check relative to Experiment 1 is likely due to participants being remunerated via Prolific, which allows recruitment of participants who have a track record of serious study attempts (e.g., successful study completion rates over 85%).

Participants in the meritocracy conditions were significantly more likely than those in the common cause conditions to agree that the article discussed "Women in senior management roles showing it's possible to move up the leadership ladder by working hard" and "The idea that all individuals can succeed in the workplace irrespective of their gender, as long as they work hard" [$F(1,328) = 176.954$, $p < 0.001$, $\eta_p^2 = 0.350$; Ms = 5.83 and 3.53, SDs = 1.60 and 1.27, respectively). Participants in the common cause conditions were significantly more likely than those in the meritocracy conditions to agree that the article discussed "The need for men and women to be engaged and committed to tackling gender inequality together" and "The need for men and boys to work together with women and girls to promote gender equality" [$F(1,328) = 317.891$, $p < 0.001$, $\eta_p^2 = 0.492$; Ms = 6.14 and 3.21, SDs = 1.17 and 1.82]. There was also a participant gender × message framing interaction [$F(1,328) = 9.693$, $p = 0.002$, $\eta_p^2 = 0.029$], with simple effects performed at each level of message framing showing only a main effect of gender for merit conditions, $F(1,164) = 8.495$, $p = 0.004$, $\eta_p^2 = 0.049$. Women were significantly less likely to agree with the common cause manipulation items (M = 2.81, SD = 1.72) than men (M = 3.61, SD = 1.85), indicating that women were more capable of distinguishing between the message frames. No other significant effects were observed, indicating our message framing manipulation was successful.

Correlations

Table 4 shows that the correlations between the dependent variables were again consistent with extant research.

Mobilization Variables

Hypothesis 1a predicted that men and women would report higher collective action intentions and sense of common cause under common cause compared to meritocracy message frames. Providing partial support for this hypothesis, women (but not men) reported higher intentions (but not sense of common cause) under common cause framing. Additionally, Hypothesis 2 was not supported, which predicted that men would report higher intentions and sense of common cause under male leaders who promoted a common cause message. Instead, men reported significantly higher collective action intentions and sense of common cause under male (compared to female) leaders irrespective of message framing. Importantly, women also reported higher intentions and sense of common cause under the same conditions.

Collective action intentions

Contrary to Hypothesis 1a, no significant main effect of message framing was found, with participants instead expressing similar collective action intentions irrespective of how the message was framed [$M_{\text{common cause}} = 4.78$, SD = 1.72; $M_{\text{merit issue}} = 4.55$, SD = 1.50; $F(1,328) = 1.78$, $p = 0.185$, $\eta_p^2 = 0.005$]. However, we detected a significant participant gender × message framing interaction [shown in **Figure 1**; $F(1,328) = 5.035$, $p = 0.026$, $\eta_p^2 = 0.015$], which qualified the significant main effect of gender that was also detected ($M_{\text{women}} = 5.13$, SD = 1.46; $M_{\text{male}} = 4.28$, SD = 1.61), $F(1,328) = 26.404$, $p < 0.001$, $\eta_p^2 = 0.075$.

Simple effects performed at both levels of participant gender revealed a significant main effect of message framing for women, $F(1,168) = 7.322$, $p = 0.008$, $\eta_p^2 = 0.042$, but not men, $F(1,164) = 0.342$, $p = 0.560$, $\eta_p^2 = 0.002$. Providing partial support for Hypothesis 1a (which predicted that men *and* women would report higher intentions under common cause frames), only women reported higher intentions under common cause ($M = 5.40$, $SD = 1.44$) compared to meritocracy frames ($M = 4.80$, $SD = 1.46$). Alternatively, contrary to Hypothesis 1a, men expressed similar (albeit still lower than women's) collective action intentions regardless of how the equality message was framed ($M_{\text{merit issue}} = 4.31$, $SD = 1.50$; $M_{\text{common cause}} = 4.16$, $SD = 1.76$).

Finally, absence of a significant three-way interaction failed to provide support for Hypothesis 2 which predicted that men would report higher intentions under male leaders who promoted a common cause message, $F(1,328) = 0.480$, $p = 0.489$, $\eta_p^2 = 0.001$. Instead, a significant leader gender main effect showed that irrespective of how the equality message was framed, male

TABLE 3 | Participant exclusion distribution rates and final participant gender distribution numbers by condition, based on participants who failed the leader gender manipulation check.

Condition	% of participants who failed the manipulation check	Number of male participants remaining	Number of female participants remaining	Number of overall participants remaining
Male leader, merit issue	5.55	42	43	85
Male leader, common cause	3.33	43	44	87
Female leader, merit issue	10	41	40	81
Female leader, common cause	7.77	40	43	83
Totals	7	166	170	336

The third and fourth columns represent the number of male and female participants remaining in each condition following the exclusion of those participants who failed the leader gender manipulation check.

TABLE 4 | Means, standard deviations, and correlations (Spearman's rho) among study variables.

Dependent variable	*M*	*SD*	Sense of common cause	Leader prototypicality	Leader legitimacy	Leader influence
Collective action intentions	4.68	1.62	0.787**	0.037	0.220**	0.153*
Sense of common cause	5.17	1.56		0.043	0.238**	0.156**
Leader prototypicality	4.86	1.41			0.608**	0.671**
Leader legitimacy	5.20	1.48				0.808**
Leader influence	4.69	1.45				

*N = 336. *p = 0.05, **p = 0.01 (two-tailed).*

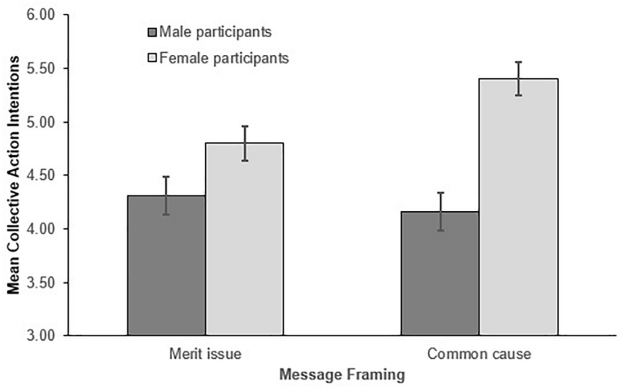

FIGURE 1 | Mean collective action intentions as a function of message framing and participant gender. Error bars represent the standard errors.

(and female) participants expressed significantly higher collective action intentions when male leaders discussed equality ($M = 4.86$, $SD = 1.60$) compared to when female leaders did ($M = 4.49$, $SD = 1.62$), $F(1,328) = 4.816$, $p = 0.029$, $\eta_p^2 = 0.014$. This indicates that male (compared to female) leaders were better at mobilizing male *and* female participants. All remaining main effects and interactions were non-significant, all $F \leq 1.766$, $ps \geq 0.185$, $\eta_p^2 \leq 0.005$.

Sense of common cause

No significant main effect of message framing was found, thus failing to support Hypothesis 1a. Instead, participants reported similar sense of common cause regardless of how the message was framed [($M_{\text{common cause}} = 5.25$, $SD = 1.68$; $M_{\text{merit issue}} = 5.09$, $SD = 1.43$; $F(1,328) = 0.65$, $p = 0.419$, $\eta_p^2 = 0.002$].

Absence of a significant three-way interaction again failed to support Hypothesis 2 which predicted that men would report higher sense of common cause under male leaders promoting a common cause message, $F(1,328) = 0.899$, $p = 0.344$, $\eta_p^2 = 0.003$. Instead, replicating our collective action findings, a significant main effect of leader gender revealed that irrespective of message framing, men *and* women reported significantly higher sense of common cause under male leaders ($M = 5.33$, $SD = 1.46$) than female leaders [$M = 5.00$, $SD = 1.65$; $F(1,328) = 4.429$, $p = 0.036$, $\eta_p^2 = 0.013$]. We also observed a significant main effect of gender, with women ($M = 5.78$, $SD = 1.17$) expressing higher sense of common cause than men ($M = 4.55$, $SD = 1.67$), $F(1,328) = 63.457$, $p < 0.001$, $\eta_p^2 = 0.162$. No other significant main effects or interactions were detected, all $F \leq 3.279$, $ps \geq 0.071$, $\eta_p^2 \leq 0.010$.

Leadership Variables

Supporting Hypothesis 1b and replicating Experiment 1's significant findings, participants evaluated leaders as being significantly higher in leader prototypicality, legitimacy, and influence when they promoted gender equality as a common cause rather than a meritocratic issue. However, this was qualified by an interaction showing that women in particular rated leaders as significantly more legitimate and influential under common cause compared to meritocracy framing.

Leader prototypicality

Consistent with Hypothesis 1b, leaders who promoted equality as a common cause (M = 5.42, SD = 0.99) were evaluated as being significantly more prototypical of the gender equality movement than leaders who used meritocratic explanations for inequality

(M = 4.29, SD = 1.54), F(1,328) = 65.527, p < 0.001, η_p^2 = 0.167. A significant leader gender main effect also revealed that female leaders (M = 5.12, SD = 1.34) were rated as being significantly more prototypical of the gender equality movement than male leaders (M = 4.62, SD = 1.43), F(1,328) = 12.437, p < 0.001, η_p^2 = 0.037. No other main effects or interactions were detected, all F ≤ 2.051, ps ≥ 0.153, $\eta_p^2 \leq 0.006$.

Leader legitimacy

Consistent with Hypothesis 1b, a significant main effect of message framing showed that leaders who employed common cause framing (M = 5.61, SD = 1.20) were viewed as significantly more legitimate than leaders who relied on meritocracy framing (M = 4.79, SD = 1.63), F(1,328) = 28.006, p < 0.001, η_p^2 = 0.079. However, this finding was qualified by the significant two-way interaction between participant gender and message framing shown in **Figure 2**, F(1,328) = 10.553, p = 0.001, η_p^2 = 0.031. Simple effects performed at each level of participant gender showed a significant main effect of message framing for women, F(1,168) = 31.613, p < 0.001, η_p^2 = 0.158, but not men, F(1,164) = 2.576, p = 0.110, η_p^2 = 0.015. Women evaluated leaders as significantly less legitimate when they framed equality as a meritocratic issue (M = 4.50, SD = 1.82), rather than a common cause for men and women (M = 5.81, SD = 1.18). In contrast, men viewed leaders as being equally legitimate regardless of how they framed their equality message ($M_{\text{common cause}}$ = 5.39, SD = 1.19; $M_{\text{merit issue}}$ = 5.08, SD = 1.36). No other main effects or interactions were significant, all F ≤ 1.389, ps ≥ 0.239, $\eta_p^2 \leq 0.004$.

Leader influence

Supporting Hypothesis 1b, and replicating our prototypicality and legitimacy findings, leaders who promoted gender equality as a common cause (M = 4.98, SD = 1.29) were considered significantly more influential than those who promoted it as an issue pertaining to meritocracy (M = 4.39, SD = 1.55), $F(1,328)$ = 14.347, p < 0.001, η_p^2 = 0.042. However, in line with our legitimacy results, this finding was again qualified by a significant participant gender × message framing interaction, $F(1,328)$ = 3.857, p = 0.050, η_p^2 = 0.012 (see **Figure 3**). Simple effects examining both levels of participant gender showed message framing had a significant effect on women, $F(1,168)$ = 13.932, p < 0.001, η_p^2 = 0.077, but not men, $F(1,164)$ = 2.028, p = 0.156, η_p^2 = 0.012. Replicating our leader legitimacy findings, women viewed leaders as significantly more influential when they framed equality as a common cause (M = 5.11, SD = 1.39) rather than an issue of merit (M = 4.23, SD = 1.69). Again reflecting our leader legitimacy findings, men perceived leaders as being equally influential regardless of how they promoted equality ($M_{\text{common cause}}$ = 4.84, SD = 1.17; $M_{\text{merit issue}}$ = 4.56, SD = 1.38).

Discussion

A key aim of Experiment 2 was to directly contrast male and female equality leaders (bar a gender-neutral control) to better determine whether they differ in their capacity to mobilize individuals toward gender equality. Supporting Hypothesis 1b and replicating Experiment 1's findings, participants again evaluated leaders as being significantly more prototypical, legitimate, and influential under common cause rather than meritocratic framing. However, this finding was qualified by an interaction which showed that women (but not men) evaluated all leaders as being significantly more legitimate and influential when they promoted common cause instead of meritocracy frames. These findings are addressed in the section "General Discussion."

Another key aim of Experiment 2 was to examine how manipulating the perceived legitimacy of gender inequality affects men's and women's responses to the issue, by contrasting common cause framing with meritocratic framing. Replicating Experiment 1's significant findings, women reported significantly higher collective action intentions than men, and the same pattern was found for women's sense of common cause with the women affected by inequality. While Hypothesis 1a was not supported in Experiment 1, in the current experiment women reported significantly higher collective action intentions (but not higher sense of common cause) under common cause compared

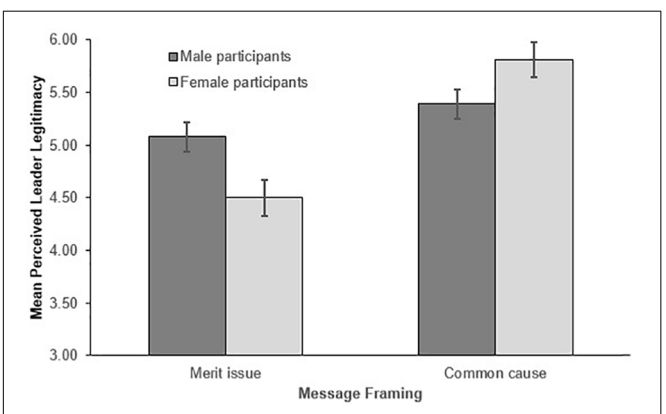

FIGURE 2 | Mean perceived leader legitimacy as a function of message framing and participant gender. Error bars represent the standard errors.

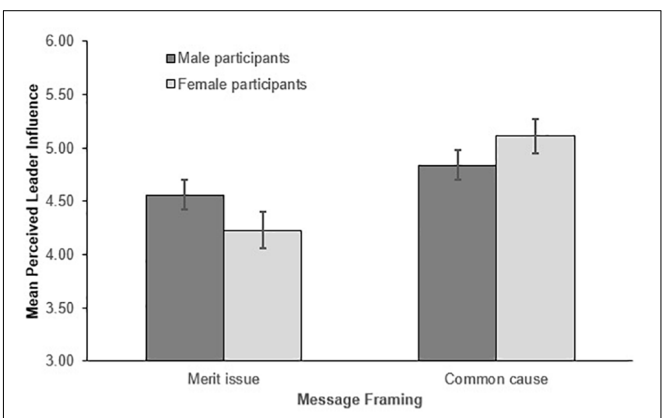

FIGURE 3 | Mean perceived leader influence as a function of message framing and participant gender. Error bars represent the standard errors.

to meritocracy message frames. Meanwhile, men's mobilization remained unaffected by message framing. Therefore, despite all participants evaluating leaders who promoted common cause frames more positively, Hypothesis 1a was partially supported for women, but not men, and only for collective action intentions, not sense of common cause. Additionally, in regards to Hypothesis 2, men (*and* women) expressed higher collective action intentions and higher sense of common cause under male leaders compared to female leaders. This indicates that male leaders were more successful than female leaders at mobilizing male *and* female participants. However contrary to Hypothesis 2 this effect was *not* enhanced under common cause messages. These findings are discussed below.

As anticipated, contrasting solidarity-based common cause framing with a more polarizing and legitimating version of traditional women's issue frames (i.e., meritocracy) strengthened the effects of such framing on (women's) mobilization. One limitation is that including a third women's issue condition would have allowed us to better determine the effects of common cause framing relative to meritocratic framing. Nevertheless, these results indicate that women, as the primary targets of gender inequality (and as compared to men, who are typically non-targets and even perpetrators of inequality) are *particularly* sensitive to how the issue of equality is promoted, and remain differentially affected by legitimating meritocratic messages. Certainly, women's adoption of meritocratic beliefs surrounding inequality can lead them to "reconstruct the glass ceilings they have cracked" (Cech and Blair-Loy, 2010, p. 371). Our findings reflect this, given that women were significantly *less* likely to report collective action intentions or feelings of common cause under meritocratic frames. Essentially, providing women with a meritocratic explanation of inequality removed their motivation to agitate for collective action, likely as a reaction to the message's legitimating content. Ultimately, discrimination perceived as legitimate removes the impetus for collective action by "undermining the validity of the collective grievances of the group" (Jetten et al., 2011, p. 118).

GENERAL DISCUSSION

This paper extends Subašić et al. (2018) findings by explicitly examining the role of leadership and influence processes in affecting social change. As predicted (H1b), across both studies common cause framing (compared to more traditional frames of equality) enhanced leadership evaluations of all leaders irrespective of their gender. Indeed, common cause leaders were evaluated as being significantly more prototypical, legitimate, and influential by both men and women (Experiments 1–2). This indicates that solidarity-based common cause framing plays a key role in affecting support for social change toward equality. As Steffens et al. (2014) assert, "leaders need not only to 'be one of us'. . .but also to 'do it for us'. . .to 'craft a sense of us'. . .and to 'embed a sense of us'" (p. 1001). Common cause framing achieves this perception of leaders being 'one of us' by making them appear more prototypical and subsequently more legitimate and influential to followers. Certainly, prototypical leaders derive their influence partly from perceptions that they embody collective group interests, which common cause framing achieves (van Knippenberg, 2011). When (male and female) leaders position themselves as a common leader for men *and* women and thus craft a sense of common cause and shared identity, both men and women appear more favorable toward, and receptive of, these equality leaders.

Despite this, our prediction that common cause framing would also result in higher collective action intentions and sense of common cause on behalf of both men and women was not wholly supported (H1a). Instead, providing partial support for Hypothesis 1a, women (but not men) expressed increased collective action intentions (but not sense of common cause) under common cause messages compared to meritocratic messages (Experiment 2). Meanwhile, men appear less affected by *what* is being said, compared to *who* is saying it: message framing did not affect men's mobilization in either experiment, but in Experiment 2 they (along with women) reported higher collective action intentions and sense of common cause under male leaders – irrespective of how they framed the issue. However, because this effect was not enhanced under common cause messages, our prediction that men would report higher intentions and sense of common cause under male leaders promoting common cause messages was not supported (H2).

Nevertheless, this finding that male leaders mobilized participants more effectively than female leaders (Experiment 2) signals that leader gender remains a crucial aspect of the leader-influence process when striving to mobilize follower support toward social change. It is not sufficient to merely "walk the talk" (Kotter, 2007, p. 101) by promoting equality as a common cause for men and women – it appears leaders must also embody a shared identity with their followers. Indeed, the gender of the leader seems to greatly affect their capacity to rally supporters, with male leaders invoking significantly greater mobilization than female leaders irrespective of *how* they framed their message, or how positively *or* negatively they were evaluated as leaders (Experiment 2). Due to male feminists being free from the stigma associated with being a female feminist, this may have contributed to their higher mobilization of participants (Anderson, 2009). Additionally, Wiley et al. (2012) discovered that men exposed to positive (rather than negative) feminist portrayals demonstrated increased feminist solidarity and collective action intentions. A male leader publicly endorsing equality could be viewed by men as a positive feminist role model, likely allowing men to readily adopt feminist behaviors (i.e., collective action intentions). Certainly, it has become increasingly socially acceptable for male leaders and celebrities to publicly self-identify as feminists (e.g., Barack Obama, Justin Trudeau, and Ryan Gosling), but this acceptance is yet to extend to women (Crowe, 2018). Furthermore, seeing fellow gender in-group members promote equality likely diminished men's status protection motives, in contrast to outgroup female members who likely threatened their status and thus decreased their willingness to combat the status quo (Branscombe, 1998).

Taken together, our mobilization results speak to there being different mobilization pathways for men and women, just as there exists "differing starting places and processes for women

and men" (de Vries, 2010, p. 36) in their journey toward supporting gender equality. Namely, as the principal targets of workplace gender inequality, women appear particularly sensitive to the way in which leaders frame their equality messages, especially when such messages can be perceived as legitimating and therefore preserving gender inequality (e.g., meritocratic frames). Women are both demobilized by, and prone to negatively evaluating leaders who choose to adopt such legitimating messages. Furthermore, in both experiments women expressed significantly higher collective action intentions (and sense of common cause in Experiment 2) than men. This strong gender difference demonstrates that women, as the primary targets of gender inequality, are more readily invested in and mobilized for equality than are men. Certainly, women are highly motivated to act collectively against inequality because it damages their group's prospects (Van Zomeren and Spears, 2009), and such feminist behavior aims to elevate women's status relative to men, hence is likely more attractive to women than to men (Radke et al., 2018). This reflects extant work in related domains, for example workplace gender discrimination (Iyer and Ryan, 2009), sexism confrontations (Becker and Barreto, 2014), and women's sexual objectification (Guizzo et al., 2017).

These results have implications for the study of social change toward gender equality, specifically in regards to leadership and shared identity. Namely, our findings suggest that men are doubly advantaged in mobilizing followers because they already possess a shared identity with both male and female followers: shared gender identity and dominant in-group membership with men, and shared cause (in the form of gender equality) with women (irrespective of how they frame the issue; Subašić et al., 2018). Essentially, male leaders signal to men *and* women that "we are all in this together" (Subašić et al., 2018, p. 7). In contrast, female leaders, who are admittedly fellow targets of inequality alongside their female followers or employees, do not yet possess a similar shared identity with their (male) followers. Future research should explore alternative message framing or leadership style strategies that female leaders could adopt in order to erode the clear disadvantage they face in gender equality contexts (and beyond).

Limitations and Future Research

These results should be considered in light of certain limitations. Firstly, we did not replicate Subašić et al.'s (2018) finding that solidarity framing increased men's and women's collective action intent (an effect that only emerged for men when a male leader promoted the common cause message). One methodological explanation for this is potential weakness of our manipulation vignettes or the manipulation checks themselves. While in the correct rank order, responses of participants in the women's issue conditions to the women's issue manipulation checks in Experiment 1 were actually below the scale's midpoint, indicating a 'Neither agree nor disagree' response. The Likert-type manipulation check items may not have adequately distinguished between message framing conditions, and additionally common cause condition participants might have misinterpreted and agreed with the women's issue manipulation items too. Certainly, this condition ultimately encompassed equality as a women's (*and* a men's) issue. However, these lowered scores could also indicate disagreement that the article discussed inequality as being a women's only issue, and thus weakness of our vignette. Certainly, our manipulation differed slightly from Subašić et al.'s (2018). Whereas their manipulation specified an *Australian-based* Gender Equality Commission, our vignette focused on a supposedly *global* context and authority figure, with absence of a relevant superordinate identity to provide a localized context or initial shared identity for participants to relate to (e.g., an Australian or American Commission). Given the central role that social identity has been shown to play in the current and extant work (e.g., van Zomeren et al., 2008; Banfield and Dovidio, 2013; Klandermans, 2014), future research should investigate whether the inclusion (or exclusion) of a more specific superordinate identity would differentially affect (a) participants' ability to recall the manipulation's contents, and (b) participants' mobilization toward equality. For example, future studies could explicitly and orthogonally manipulate the salience of global versus American superordinate identities.

Admittedly, many of our dependent variable means also hung around the scale's midpoint. Certainly, offering a middle response category can increase the likelihood of participants disproportionately adopting a midpoint response style (Weijters, 2006). Nevertheless, this raises concerns as to whether participants properly engaged with the study materials, and whether our manipulations elicited the desired effect. The large percentage of participants (30%) who failed to correctly identify the leader's gender in Experiment 1 indicates our manipulations were perhaps too subtle for participants to effectively distinguish between the three leader gender conditions. Indeed, participants had minimal (fictitious) information to base their appraisals on (e.g., first names and pronouns only). Future work requires improvement of the vignettes' clarity and strength to ensure the desired effect is elicited (e.g., additional biographical information, photographs, real-world leaders), and use of alternative manipulation checks, such as writing a short paragraph about the vignette's contents immediately following its presentation (Evans et al., 2015). Future research should also reconsider use of midpoint labeling and utilize larger samples.

Additionally, Subašić et al. (2018) sample comprised primarily young Australian undergraduates, whereas we utilized a combined Australian and American undergraduate and general public sample (Experiment 1) and an older American employed sample (Experiment 2). Thus participants' personal experience (or lack thereof) of gender inequality may have differed, subsequently affecting their responses to different gender equality messages. Indeed, Experiment 2 used a largely employed American sample, and compared to typical undergraduate samples these working respondents had more likely been exposed to workplace gender inequality. Such familiarity could undermine women's acceptance of the meritocratic ideology used, given employed women are more likely than men or unemployed women to be cognisant of structural inequalities and thus predisposed to interpret gender inequality as being structurally based (Cech and Blair-Loy, 2010). Despite attempts to keep the meritocracy messaging subtle, anecdotal feedback indicated some female participants did not 'buy' the meritocratic

framing, particularly when attributed to female leaders (e.g., "I thought there was a subtle implication in Margaret's statement that the barrier to women holding high level management positions was they weren't working hard enough"; "It sounded like she was saying - other women can do it, so if you failed it's your own fault and there is no systemic discrimination"). Future research could utilize more naïve samples and more nuanced meritocracy messages.

Our study design also limits the causal inferences we can draw. It is possible that the interventions used have the potential to be effective, however, were not intensive or long-lasting enough to engender concrete change in participants' social change behaviors toward gender equality. The use of self-report measures also makes it difficult to ascertain whether collective action intentions translate into actual engagement with equality and feminism beyond the studies. Longitudinal studies directly engaging participants in collective action for equality could determine whether the effects of our manipulations extend beyond participation in the current studies. Furthermore, this could uncover whether participating in collective action can both *shape* individuals' responses to inequality and *be shaped* by individuals' perceptions and actions concerning inequality (Iyer and Ryan, 2009).

CONCLUSION

Paradoxically, by virtue of their gender and the privileges it permits, male leaders seem to possess the ability to undertake gender equality leadership roles and mobilize men and women more effectively than female leaders (Marshall, 2007). Indeed, despite holding formal authority within the workplace, female leaders' gender appears to limit their ability to address inequality (Martin and Meyerson, 1998). Yet we have also demonstrated that leaders' influence and ability to mobilize follower support goes beyond their gender to encompass the rhetoric they adopt when discussing gender equality, in addition to *who* they are targeting. While women (compared to men) are inexorably more invested in, and thus more readily mobilized toward gender equality, they still remain particularly sensitive to how calls for equality are framed. This is in comparison to men, who appear relatively unaffected by differing frames of gender equality. Ultimately, the current studies point to the importance of there being an intersection between leadership and solidarity processes in order to bridge the gap between women's and men's mobilization toward gender equality. This intersection requires further unpacking to achieve a more nuanced understanding. Importantly, just as the present research highlights the existence of different mobilization pathways for targets and non-targets of workplace gender inequality, so too might there exist different pathways for male and female equality initiative leaders to achieve successful mobilization of followers.

AUTHOR CONTRIBUTIONS

SH assisted with the design, recruitment, analysis, and interpretation of Experiments 1 and 2, and additionally drafted the manuscript. ES was the primary supervisor of SH, assisted with the design, analysis, and interpretation of Experiments 1 and 2, and additionally provided theoretical and practical feedback on several drafts of the manuscript.

FUNDING

The work was supported by funding from both an Australian Postgraduate Award Ph.D. Research Scholarship awarded to SH and an Australian Research Council grant awarded to ES for a Discovery Project (DP1095319). This research was completed as part of SH's Ph.D. thesis.

ACKNOWLEDGMENTS

We are grateful to Associate Professor Mark Rubin for his assistance with our power analyses, and thank the editor and reviewers for their comments which greatly improved the manuscript.

SUPPLEMENTARY MATERIAL

The Supplementary Material for this article can be found online at: https://www.frontiersin.org/articles/10.3389/fpsyg.2018.02497/full#supplementary-material

REFERENCES

Anastosopoulos, V., and Desmarais, S. (2015). By name or by deed? identifying the source of the feminist stigma. *J. Appl. Soc. Psychol.* 45, 226–242. doi: 10.1111/jasp.12290

Anderson, V. N. (2009). What's in a label? judgements of feminist men and feminist women. *Psychol. Women Q.* 33, 206–215. doi: 10.1111/j.1471-6402.2009.01490.x

Banfield, J. C., and Dovidio, J. F. (2013). Whites' perceptions of discrimination against blacks: the influence of common identity. *J. Exp. Soc. Psychol.* 49, 833–841. doi: 10.1016/j.jesp.2013.04.008

Becker, J., and Barreto, M. (2014). Ways to go: men's and women's support for aggressive and non-aggressive confrontation of sexism as a function of gender identification. *J. Soc. Issues* 70, 668–686. doi: 10.1111/josi.12085

Behrend, T. S., Sharek, D. J., Meade, A. W., and Wiebe, E. N. (2011). The viability of crowdsourcing for survey research. *Behav. Res. Methods* 43, 800–813. doi: 10.3758/s13428-011-0081-0

Branscombe, N. R. (1998). Thinking about one's gender group's privileges or disadvantages: consequences for well-being in women and men. *Br. J. Soc. Psychol.* 37, 167–184. doi: 10.1111/j.2044-8309.1998.tb01163.x

Cafri, G., Kromrey, J. D., and Brannick, M. T. (2010). A meta-meta-analysis: empirical review of statistical power, type I error rates, effect sizes, and model selection of meta-analyses published in psychology. *Multivariate Behav. Res.* 45, 239–270. doi: 10.1080/00273171003680187

Calogero, R. M. (2013). "On objects and actions: situating self-objectification in a system justification context," in *Objectification and (de)Humanization: 60th Nebraska Symposium on Motivation*, ed. S. J. Gervais (New York, NY: Springer), 97–126. doi: 10.1007/978-1-4614-6959-9_5

Cech, E. A., and Blair-Loy, M. (2010). Perceiving glass ceilings? meritocratic versus structural explanations of gender inequality among women in science and technology. *Soc. Probl.* 57, 371–397. doi: 10.1525/sp.2010.57.3.371

Cihangir, S., Barreto, M., and Ellemers, N. (2014). *Men as Allies Against Sexism: The Positive Effects of a Suggestion of Sexism by Male (vs. Female) Sources*. California, CA: SAGE.

Crowe, J. (2018). *Meet the Male (Pro)-Feminist: Professor Jonathan Crowe. Broad Agenda*. Available at: http://www.broadagenda.com.au/home/meet-the-male-feminist-professor-jonathan-crowe/

Czopp, A. M., and Monteith, M. J. (2003). Confront prejudice (literally): reactions to confrontations of racial and gender bias. *Pers. Soc. Psychol. Bull.* 29, 532–544. doi: 10.1177/0146167202250923

de Vries, J. A. (2010). *A Realistic Agenda? Women Only Programs as Strategic Interventions for Building Gender Equitable Workplaces*. Doctoral dissertation, University of Western Australia, Perth, WA.

de Vries, J. A. (2015). Champions of gender equality: female and male executives as leaders of gender change. *Equal. Divers. Incl. Int. J.* 34, 21–36. doi: 10.1108/EDI-05-2013-0031

Drury, B. J. (2013). *Confronting for the Greater Good: Are Confrontations That Address the Broad Benefits of Prejudice Reduction Taken Seriously?* Doctoral dissertation, University of Washington, Seattle, WA.

Drury, B. J., and Kaiser, C. R. (2014). Allies against sexism: the role of men in confronting sexism. *J. Soc. Issues* 70, 637–652. doi: 10.1111/josi.12083

Duck, J. M., and Fielding, K. S. (2003). Leaders and their treatment of subgroups: implications for evaluations of the leader and the superordinate group. *Eur. J. Soc. Psychol.* 33, 387–401. doi: 10.1002/ejsp.153

Eagly, A. H., and Carli, L. L. (2003). The female leadership advantage: an evaluation of the evidence. *Leadersh. Q.* 14, 807–834. doi: 10.1016/j.leaqua.2003.09.004

Eagly, A. H., Wood, W., and Chaiken, S. (1978). Causal inferences about communicators and their effect on opinion change. *J. Pers. Soc. Psychol.* 36, 424–435. doi: 10.1037/0022-3514.36.4.424

Evans, S. C., Roberts, M. C., Keeley, J. W., Blossom, J. B., Amaro, C. M., Garcia, A. M., et al. (2015). Vignette methodologies for studying clinicians' decision-making: validity, utility, and application in ICD-11 field studies. *Int. J. Clin. Health Psychol.* 15, 160–170. doi: 10.1016/j.ijchp.2014.12.001

Faludi, S. (1991). *Backlash: The Undeclared War Against American Women*. New York, NY: Crown Publishers.

Faul, F., Erdfelder, E., Lang, A.-G., and Buchner, A. (2007). G*Power 3: a flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behav. Res. Methods* 39, 175–191. doi: 10.3758/BF03193146

Fiol, C. M., Harris, D., and House, R. (1999). Charismatic leadership: strategies for effecting social change. *Leadersh. Q.* 10, 449–482. doi: 10.1016/S1048-9843(99)00021-1

Fiske, S. T. (1998). "Prejudice, stereotyping, and discrimination," in *The Handbook of Social Psychology*, 4th Edn, eds D. T. Gilbert, S. T. Fiske, and G. Lindzey (New York, NY: McGraw-Hill), 357–411.

Glasford, D. E., and Calcagno, J. (2012). The conflict of harmony: intergroup contact, commonality and political solidarity between minority groups. *J. Exp. Soc. Psychol.* 48, 323–328. doi: 10.1016/j.jesp.2011.10.001

Guizzo, F., Cadinu, M., Gadli, S., Maass, A., and Latrofa, M. (2017). Objecting to objectification: women's collective action against sexual objectification on television. *Sex Roles* 77, 352–365. doi: 10.1007/s11199-016-0725-8

Haslam, S. A., Reicher, S. D., and Platow, M. J. (2011). *The New Psychology of Leadership: Identity, Influence and Power*. New York, NY: Psychology Press.

hooks, B. (1984). *Feminist Theory: From Margin to Center*. New York, NY: South End Press.

Iyer, A., and Ryan, M. K. (2009). Why do men and women challenge gender discrimination in the workplace? the role of group status and in-group identification in predicting pathways to CA. *J. Soc. Issues* 65, 791–814. doi: 10.1111/j.1540-4560.2009.01625.x

Jetten, J., Schmitt, M. T., Branscombe, N. R., Garza, A. A., and Mewse, A. J. (2011). Group commitment in the face of discrimination: the role of legitimacy appraisals. *Eur. J. Soc. Psychol.* 41, 116–126. doi: 10.1002/ejsp.743

Kamen, P. (1991). *Feminist Fatale: Voices From the Twenty Something Generation Explore the Future of the Women's Movement*. New York, NY: Donald I. Fine.

Klandermans, P. G. (2014). Identity politics and politicized identities: identity processes and the dynamics of protest. *Polit. Psychol.* 35, 1–22. doi: 10.1111/pops.12167

Kluegel, J. R., and Smith, E. R. (1986). *Social Institutions and Social Change. Beliefs About Inequality: Americans' Views of What is and What Ought to Be*. Hawthorne, CA: Aldine de Gruyter.

Kotter, J. (2007). Leading change: why transformation efforts fail. *Harv. Bus. Rev.* 85, 96–103.

Major, B., Gramzow, R. H., McCoy, S., Levin, S., Schmader, T., and Sidanius, J. (2002). Perceiving personal discrimination: the role of group status and legitimizing ideology. *J. Pers. Soc. Psychol.* 82, 269–282. doi: 10.1037/0022-3514.82.3.269

Major, B., and Schmader, T. (2001). "Legitimacy and the construal of social disadvantage," in *The Psychology of Legitimacy: Emerging Perspectives on Ideology, Justice, and Intergroup Relations*, eds J. T. Jost, and B. Major (Cambridge: Cambridge University Press), 176–204.

Marshall, J. (2007). The gendering of leadership in corporate social responsibility. *J. Organ. Change Manag.* 20, 165–181. doi: 10.1108/09534810710724739

Martin, J., and Meyerson, D. (1998). "Women and power: conformity, resistance and disorganized coaction," in *Power and Influence in Organizations*, eds R. M. Kramer, and M. N. Neale (Thousand Oaks, CA: SAGE Publications), 311–348.

Mavin, S. (2008). Queen bees, wannabees and afraid to bees: no more 'best enemies' for women in management? *Br. J. Manag.* 19, S75–S84. doi: 10.1111/j.1467-8551.2008.00573.x

McCoy, S. K., and Major, B. (2007). Priming meritocracy and the psychological justification of inequality. *J. Exp. Soc. Psychol.* 43, 341–351. doi: 10.1016/j.jesp.2006.04.009

Morton, T. A., Postmes, T., Haslam, S. A., and Hornsey, M. J. (2009). Theorizing gender in the face of social change: is there anything essential about essentialism? *J. Pers. Soc. Psychol.* 96, 653–664. doi: 10.1037/a0012966

Okimoto, T. G., and Brescoll, V. L. (2010). The price of power: power seeking and backlash against female politicians. *Pers. Social Psychol. Bull.* 36, 923–936. doi: 10.1177/0146167210371949

Platow, M. J., and van Knippenberg, D. (2001). A social identity analysis of leadership endorsement: the effects of leader ingroup prototypicality and distributive intergroup fairness. *Pers. Soc. Psychol. Bull.* 27, 1508–1519. doi: 10.1177/01461672012711011

Powell, G. N. (1990). One more time: do female and male managers differ? *Executive* 4, 68–75.

Prolific. (2017). *Prolific (Legacy Version, May 2017) [Crowdsourcing Platform]*. Summertown: Oxford University Innovation.

Radke, H. R. M., Hornsey, M. J., and Barlow, F. K. (2018). Changing versus protecting the status quo: why men and women engage in different types of action on behalf of women. *Sex Roles* 79, 505–518. doi: 10.1007/s11199-017-0884-2

Rasinski, H. M., and Czopp, A. M. (2010). The effect of target status on witnesses' reactions to confrontations of bias. *Basic Appl. Soc. Psychol.* 32, 8–16. doi: 10.1080/01973530903539754

Rindfleish, J., and Sheridan, A. (2003). No change from within: senior women managers' response to gendered organizational structures. *Women Manag. Rev.* 18, 299–310. doi: 10.1108/09649420310491477

Sandberg, S. (2013). *Lean in: Women, Work, and the Will to Lead*. New York, NY: Alfred A. Knopf.

Seyranian, V. (2014). Social identity framing communication strategies for mobilizing social change. *Leadersh. Q.* 25, 468–486. doi: 10.1016/j.leaqua.2013.10.013

Son Hing, L. S., Bobocel, D. R., and Zanna, M. P. (2002). Meritocracy and opposition to affirmative action: making concessions in the face of discrimination. *J. Pers. Soc. Psychol.* 83, 493–509. doi: 10.1037//0022-3514.83.3.493

Steffens, N. K., Haslam, S. A., Reicher, S. D., Platow, M. J., Fransen, K., Yang, J., et al. (2014). Leadership as social identity management: introducing the identity leadership inventory (ILI) to assess and validate a four-dimensional model. *Leadersh. Q.* 25, 1001–1024. doi: 10.1016/j.leaqua.2014.05.002

Subašić, E., Hardacre, S., Elton, B., Branscombe, N. R., Ryan, M. K., and Reynolds, K. J. (2018). We for she: mobilising men and women for collective action towards gender equality. *Group Process. Intergroup Relat.* 21, 707–724. doi: 10.1177/1368430218763272

Subašić, E., Reynolds, K. J., Reicher, S. D., and Klanderman, B. (2012). Where to from here for the psychology of social change? future directions for theory and practice. *Polit. Psychol.* 33, 61–74. doi: 10.1111/j.1467-9221.2011.00864.x

Subašić, E., Reynolds, K. J., and Turner, J. C. (2008). The political solidarity model of social change: dynamics of self-categorization in intergroup power. *Pers. Soc. Psychol. Rev.* 12, 330–352. doi: 10.1177/1088868308323223

Turner, J. C., Reynolds, K. J., and Subašić, E. (2008). "Identity confers power: the new view of leadership in social psychology," in *Public Leadership: Perspectives and Practices*, eds P. t'Hart, and J. Uhr (Canberra: Australian National University Press), 57–72.

van Knippenberg, D. (2011). Embodying who we are: leader group prototypicality and leadership effectiveness. *Leadersh. Q.* 22, 1078–1091. doi: 10.1016/j.leaqua.2011.09.004

van Zomeren, M., Postmes, T., and Spears, R. (2008). Toward an integrative social identity model of collective action: a quantitative research synthesis of three socio-psychological perspectives. *Psychol. Bull.* 134, 504–535. doi: 10.1037/0033-2909.134.4.504

Van Zomeren, M., and Spears, R. (2009). Metaphors of protest: a classification of motivations for collective action. *J. Soc. Issues* 65, 661–679. doi: 10.1111/j.1540-4560.2009.01619.x

van Zomeren, M., Spears, R., Fischer, A. H., and Leach, C. W. (2004). Put your money where your mouth is! explaining collective action tendencies through group-based anger and group efficacy. *J. Pers. Soc. Psychol.* 87, 649–664. doi: 10.1037/0022-3514.87.5.649

Weijters, B. (2006). *Response Styles in Consumer Research*. Doctoral dissertation, Ghent University Faculty of Economics and Business Administration, Ghent.

Whelan, J. (2013). *The Myth of Merit and Unconscious Bias*. Available at: https://theconversation.com/the-myth-of-merit-and-unconscious-bias-18876

Wiley, S., Srinivasan, R., Finke, E., Firnhaber, J., and Shilinsky, A. (2012). Positive portrayals of feminist men increase men's solidarity with feminists and collective action intentions. *Psychol. Womens Q.* 37, 61–71. doi: 10.1177/0361684312464575

Williams, L. A. (2015). *The Problem With Merit-Based Appointments? They're Not Free From Gender Bias Either*. Available at: https://theconversation.com/the-problem-with-merit-based-appointments-theyre-not-free-from-gender-bias-either-45364

Conflict of Interest Statement: The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

frontiers in Psychology

ORIGINAL RESEARCH
published: 19 February 2019
doi: 10.3389/fpsyg.2019.00150

Double Trouble: How Being Outnumbered and Negatively Stereotyped Threatens Career Outcomes of Women in STEM

Ruth van Veelen[1], Belle Derks[1] and Maaike Dorine Endedijk[2]*

[1] Social, Health and Organizational Psychology Department, Faculty of Social Sciences, Utrecht University, Utrecht, Netherlands, [2] Educational Sciences Department, Faculty of Behavioural, Management and Social Sciences, University of Twente, Enschede, Netherlands

Masculine work contexts form an important source of social identity threat for working women. But what aspect of masculine work contexts is most threatening to women's gender identity at work: A numerical majority of male colleagues (i.e., numerical male dominance), working in a profession in which women are negatively stereotyped (i.e., normative male dominance), or the combination? The current study aimed to disentangle these two aspects of masculine work contexts by testing its combined impact on the experience of gender identity threat among women and men who work in the STEM sector (i.e., Science, Technology, Engineering and Mathematics). A field study was conducted among women (N = 177) and men (N = 630) graduates holding an academic degree in a STEM educational program. Respondents either worked in- or outside the STEM sector (i.e., stronger vs. weaker gender stereotype) and estimated the ratio of men to women in their direct work environment. Results from a Structural Equation Model demonstrated that women in STEM face double trouble: The combination of working almost solely with male colleagues (being outnumbered) and working in the technical sector (where women are negatively stereotyped) predicted the highest levels of experienced gender identity threat, particularly among women who highly identified with their gender group. Gender identity threat, in turn, negatively predicted women's work engagement and career confidence. Men did not face double trouble: Their experience of gender identity threat was not related to working in a masculine STEM sector. Importantly, considering that the women in this sample already hold a degree in STEM, and have proven their competence in STEM and resilience to gender stereotypes, this research reveals how in naturalistic work settings, prevailing social identity threats continue to affect women's professional careers.

Keywords: social identity threat, gender identification, masculine work contexts, gender (under)representation, work engagement, career confidence, Science Technology Engineering Math (STEM)

OPEN ACCESS

Edited by:
Renata Bongiorno,
University of Exeter, United Kingdom

Reviewed by:
Leda M. Blackwood,
University of Bath, United Kingdom
Will M. Hall,
University of Toronto, Canada

****Correspondence:***
Ruth van Veelen
r.vanveelen@uu.nl

Specialty section:
This article was submitted to Organizational Psychology, a section of the journal Frontiers in Psychology

Received: *30 August 2018*
Accepted: *16 January 2019*
Published: *19 February 2019*

Citation:
van Veelen R, Derks B and Endedijk MD (2019) Double Trouble: How Being Outnumbered and Negatively Stereotyped Threatens Career Outcomes of Women in STEM. Front. Psychol. 10:150. doi: 10.3389/fpsyg.2019.00150

INTRODUCTION

The STEM sector (i.e., Science, Technology, Engineering and Mathematics) is one of the most vital sectors for the economic competitiveness of European countries. With an academic degree in STEM, people have access to the largest number, the best-paying and fastest-developing jobs (Cedefop, 2016; European Union, 2016; European Commission, 2017). Yet the STEM sector

remains a male dominated field; women are less likely than men to opt for STEM educational programs, to hold a degree in STEM, and to enter the labor force in the field of STEM (Hill et al., 2010; Catalyst, 2018). Recent statistics demonstrate that in the Netherlands – where the current study was situated – only 24% of STEM graduates are women. And of those women, a vast majority of 71% opts for a career *outside* STEM. As a result, a mere 13% of professionals in the STEM sector are women (Monitor Techniekpact, 2016). This puts the Netherlands at the bottom of European rankings in the share of women in STEM (Statistics Netherlands, 2016).

Although quite a number of studies have examined girls' and women's motivation to choose STEM as a field of study (e.g., Cheryan et al., 2009; Else-Quest et al., 2010; London et al., 2011; Thoman and Sansone, 2016), women holding a degree in STEM are a small and understudied group (but see Fouad et al., 2016). To our knowledge, there are no prior empirical studies that directly compare how women STEM graduates who opt for a career in the STEM sector experience working in a male dominated context, relative to those who opted out. The current paper aims to fill this gap in the literature and investigates how women's own career perceptions are shaped by the fact that they work in-, or outside male-dominated STEM sectors.

Both in popular narrative (Sandberg, 2013; Kay and Shipman, 2014) and in scientific work (Hakim, 2000; Cech et al., 2011), it is often implied that women's intrinsically lower levels of career confidence, motivation and ambition relative to men's cause them to opt out of challenging careers in traditionally masculine STEM sectors. From this argument it would follow that women are just not that willing to 'go the extra mile' or to 'make the sacrifices' needed to succeed in these types of careers (Belkin, 2003). Indeed, gender differences in career confidence and ambition have been found in prior research (e.g., Van Vianen and Fischer, 2002; Cech et al., 2011). Yet we argue that these gender differences do not emerge in a social vacuum and that they are not always a matter of personal choice. Instead, we posit that gendered socio-cultural norms in STEM work contexts constrain women's (more than men's) career perceptions and impose barriers to building their career confidence and engagement in STEM (see also Peters et al., 2013).

This paper builds on social identity theory (SIT; Tajfel and Turner, 1979) to investigate what aspects of masculine work contexts may form career barriers among women STEM graduates. The SIT approach posits that in organizational contexts people's attitudes and behaviors are determined, at least in part, by their group memberships (e.g., being a woman, a professional, a member of a team), and the importance people attach to these groups (Haslam et al., 2014). Specifically, we investigate how being a woman in a male dominated STEM sector may form a source of social identity threat (i.e., the feeling of being devalued or stigmatized at work on the basis of one's gender identity; Tajfel and Turner, 1986), which may result in negative career-related outcomes such as lower work engagement and career confidence.

In our investigation, we distinguish between two aspects that may signal institutional male dominance in work contexts (Gruber and Morgan, 2005). In addition, we investigate whether particularly women who strongly identify with their gender group experience strong gender identity threat in response to male dominant work contexts (Crocker and Major, 1989; Ellemers et al., 2002). The conceptual model is displayed in **Figure 1** and tested among a sample of female and male STEM professionals. The inclusion and direct comparison of women to men allows us to test whether expected gender identity threat effects of male dominant work contexts indeed uniquely apply to women and thus form yet another explanation as to why particularly women in STEM tend to opt out.

THEORY AND HYPOTHESES

Social Identity Threat Among Women in STEM

Social identity threat is evoked when people feel concerned about being negatively treated, stereotyped or devalued in some way on the basis of their group membership (Tajfel and Turner, 1986; Crocker and Major, 1989; Branscombe et al., 1999). Gender identity threat as a specific form of social identity threat emerges when women or girls feel that they themselves as women, or their group as a whole is devalued or stigmatized. For example, when women feel judged based on their gender rather than their professional competence, or when women feel uncomfortable in work situations because of their gender, such as in relation to sexist remarks or jokes.

A large body of research has been devoted to gender identity threat and the conditions under which it is triggered. For example, women STEM students who watched a video about an engineering conference reported lower belonging and lower desire to participate in the conference when the men in the video were overrepresented compared to when the gender composition was equal (Murphy et al., 2007). Similarly, women confronted with gender stereotype-confirming commercials reported lower interest in educational and vocational options that involved technical domains, and avoided math tasks in favor of verbal tasks (Davies et al., 2002). Moreover, in terms of performance strategies, when women performed a task on which they were told that men perform better than women, they tended to focus on not failing on the task rather than being successful, especially when they had to perform the task in a group consisting of men rather than women (Derks et al., 2006). Finally, in terms of performance, women's performance has been found to be negatively affected by activation of negative gender stereotypes (Cadinu et al., 2006), in groups where women are underrepresented compared to a group with equal gender composition (Inzlicht and Ben-Zeev, 2000), and by brief interactions with a sexist male confederate (Logel et al., 2009). This work demonstrates that gender identity threat is a situational predicament, evoked in response to the activation or salience of gender inequality or bias (see also Derks et al., 2006, 2008, 2016).

In comparison to the bulk of lab research on short-lived effects of contextual cues and primes on gender identity threat, the knowledge base in relation to prolonged exposure to male dominated work contexts in naturalistic settings is relatively small (Kalokerinos et al., 2014; Kang and Inzlicht, 2014).

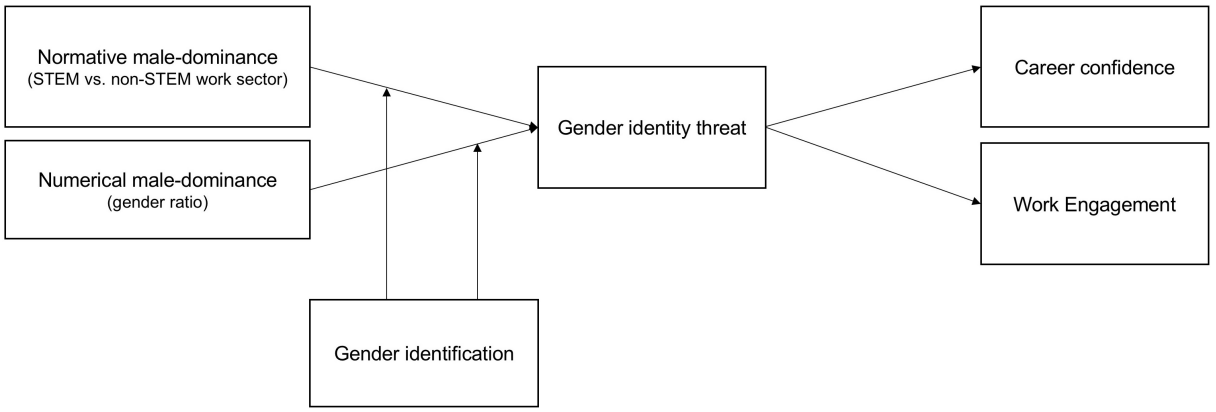

FIGURE 1 | Conceptual model with hypothesized relationships.

In naturalistic work settings, personal factors such as high competence, strong motivation, and positive past experiences may override classic context effects of social identity threat (Sackett, 2003; Sackett and Ryan, 2012). Given that women who opt for a career in STEM have clearly proven their competence, motivation and perseverance in STEM, one could argue that they have developed strategies to effectively cope with gender identity threats, or that they are resilient to them altogether.

However, recent field studies suggest that women working in male dominated work contexts do experience gender identity threats. For example, in the law and consumer industry, the more women compared themselves with their male (but not female) colleagues, the higher they scored on gender identity threat and the lower their career aspirations (Von Hippel et al., 2011). In the police force, the more women experienced gender bias, the higher their self-reported gender identity threat (Derks et al., 2011b) and the lower their perceived fit and belonging at work (Peters et al., 2013; Veldman et al., 2017). In the STEM sector, recent diary studies showed that women (but not men) engineers' conversations with their male (but not female) colleagues cued feelings of incompetence and lack of acceptance. Moreover, on days that these conversations took place, levels of self-reported gender identity threat were higher (Hall et al., 2015, 2018a,b). Building on this work, in the current study we move from a micro level focus on daily interactions or cues that trigger gender identity threats at work, to a macro level focus on institutional parameters of male dominance that may cause gender identity threats among women STEM graduates working in- or outside the STEM sector.

Numerical and Normative Male Dominance Elicit Gender Identity Threat Among Women in STEM

In professional fields such as the armed forces, the financial sector, academia, or the high-tech industry, male-dominance does not take a single form, but is often institutionalized in multiple ways. It is likely a *combination* of contextual parameters such as gender composition, gender stereotypes or biases that may elicit gender identity threats among women in these professional fields. Thus far, research often either did not clearly formulate the source of threat in response to male-dominance at work (Logel et al., 2009; Hall et al., 2015, 2018a), or focused on one such parameter at a time (e.g., Inzlicht and Ben-Zeev, 2000; Cadinu et al., 2006; Alt et al., 2017). What triggers threat responses among women in male dominated work contexts in STEM? The fact that women work in a sector in which few other women are present, the fact that they work in a sector that is stereotypically more strongly associated with masculine than feminine attributes, or a combination?

In conceptualizing institutional parameters that signal male dominance at work, we build on a sociological theory called the *double dominance theory* (Gruber and Morgan, 2005). This theory posits that institutional parameters of male dominance can be distinguished in two categories, namely (1) *numerical* and (2) *normative* male dominance. Numerical male dominance indicates the ratio of men to women in a work environment. The higher numerical male dominance is, the lower the proportion of women in an institution is. In this research, numerical male dominance is studied based on STEM graduates' estimate of the ratio of men to women in their direct work environment. With only 13% of all STEM professionals being female, numerical male dominance in the STEM sector in the Netherlands is generally high, also relative to other sectors (Statistics Netherlands, 2016).

Normative male dominance indicates the extent to which a professional culture positively evaluates stereotypically masculine attributes (e.g., individualism, status-orientated) and/or negatively stereotypes women or feminine attributes (e.g., women are negatively stereotyped as incompetent in math). In this research, normative male dominance is studied by comparing professionals working either in- or outside the STEM sector. The STEM sector is stereotypically considered masculine (Diekman et al., 2010) and portrayed as highly competitive, individualistic, task-focused, high in status and monetary reward, and only carved out for those who are "brilliant" or "innately talented" (Leslie et al., 2015; Storage et al., 2016). These characteristics are typically attributed more to men more than to women. A recent cross-national survey

among 66 countries revealed that people implicitly associate STEM abilities more strongly with men relative to women and the overall magnitude of this effect is large (Miller et al., 2015; see also Nosek et al., 2009). The Netherlands is a typical case in point, because despite the fact that the Dutch score relatively high on overall gender equity, Netherlands ranks first on explicit gender stereotypes, and second on implicit gender stereotypes in STEM (Miller et al., 2015).

In sum, based on double dominance theory (Gruber and Morgan, 2005), we posit that numerical and normative male dominance also have explanatory power in social identity research, and specifically on women's experience of gender identity threat at work. We rely on recent field research demonstrating that women but not men report higher levels of gender identity threat in response to contextual cues signaling male-dominance (Hall et al., 2015, 2018a), to argue that high numerical and normative male-dominance at work also elicit high gender identity threat among women but not men STEM graduates. Moreover, we explore whether the combination of numerical and normative male dominance results in an interaction-effect, such that both reinforce each other to instill the highest levels of gender identity threat at work:

> *Hypothesis 1: The stronger both numerical and normative male dominance are at work, the higher gender identity threat among women but not men STEM graduates will be.*

The Moderating Effect of Gender Identification

Importantly, not all women deal with threats to their gender identity in a similar manner (Ellemers et al., 2002; Schmader, 2002). The extent to which women in STEM may feel threatened in male-dominated work environments is expected to depend on their level of gender identification. Following from SIT (Tajfel and Turner, 1979), the more importance or self-relevance women attach to their gender identity (i.e., high gender identification), the more motivated they will be to maintain or protect a positive image of that gender identity (Tajfel and Turner, 1986; Ellemers et al., 1999) and hence, the greater the experience of gender identity threat in a context that signals male-dominance (Schmader, 2002; Major et al., 2003).

Building on this, we expect that when gender identity is considered highly self-relevant, confrontation with numerical or normative male dominance at work is more threatening for women professionals. In contrast, when gender identity is not considered very self-relevant, such dissociation from one's gender identity can act as a coping mechanism to buffer against the negative feeling of being devalued or stigmatized at work on the basis of being a woman. Prior research on the Queen Bee phenomenon indeed demonstrates that women who report low connection to their gender group at work tend to distance themselves from this group to ward off potential gender identity threats and to successfully fit into a masculine work context (Derks et al., 2011a,b; see Derks et al., 2016 for review). Men's gender identity may also play a role in their career-related perceptions, but rather in the sense that STEM careers are typically positively associated with masculine attributes (e.g., Diekman et al., 2010; Leslie et al., 2015). Thus, considering that men's gender identity is generally not stigmatized in male dominated STEM work contexts we do not expect gender identification to act as a moderating mechanism among male STEM professionals:

> *Hypothesis 2: The effect of numerical and normative male dominance on women's but not men's, gender identity threat is moderated by gender identification, such that it is stronger among high relative to low identified women.*

Gender Identity Threat Negatively Affects Career Perceptions of Women in STEM

Social identity threats have negative consequences, such as for overall levels of cognitive functioning, decision-making, self-regulation, well-being, belonging, and self-esteem (e.g., Davies et al., 2002; Walton and Cohen, 2007; Inzlicht and Kang, 2010; Thoman et al., 2013). Following from this, we argue that women's experience of gender identity threat in response to a male dominated work context in STEM negatively affects their career perceptions, particularly impairing work engagement and career confidence.

Work engagement can be defined as a positive, fulfilling work-related state of mind, characterized by high levels of energy, mental resilience, high involvement, and enthusiasm in one's work (Schaufeli et al., 2002). The more work engagement people experience, the higher their commitment to their organization (Hakanen et al., 2008), and the lower their intentions to leave (Du Plooy and Roodt, 2010). Past research focussed on job-level (e.g., job autonomy, learning opportunities) and individual-level (e.g., self-esteem, optimism) processes as main driving forces of work engagement (Bakker and Demerouti, 2008), while little attention has been devoted to group-level processes. We argue that when women STEM professionals have to deal with gender identity threats in response to a male dominant work context, this requires cognitive and emotional resources that take away from their enthusiasm and involvement in their work. In empirical support for this, research showed that feeling negatively stereotyped as a female STEM student contributed to higher disengagement and lower interest to continue a career in STEM (Davies et al., 2002; Cheryan et al., 2009; Thoman and Sansone, 2016). Moreover, diary studies showed that on days that female STEM faculty engaged in research conversations with male colleagues, their reported disengagement at work was higher, while the reverse was true for male STEM faculty (Holleran et al., 2011). Moreover, on days that female, but not male, engineers interacted more with their male colleagues, they experienced more gender identity threat and as a consequence, reported higher levels of burn-out (i.e., being emotionally drained and exhausted at work; Hall et al., 2015, 2018a).

> *Hypothesis 3: Higher levels of gender identity threat in response to male dominated work contexts are associated with lower levels of work engagement among, female, but not male, STEM professionals.*

Career confidence can be defined as the overall certainty or clarity that people experience about their future career perspectives. People with high career confidence know what they

want in their career and are confident that they will be able to achieve their career goals (Savickas and Porfeli, 2011; Gupta et al., 2015). Research based on social cognitive career theory (SCCT; Lent et al., 1994) showed that female college students' confidence in their own ability to perform well in a STEM study, positively affected their interest and choice for a career in the STEM sector (Lent et al., 2003, 2005; Cech et al., 2011). Moreover, female engineers' positive beliefs in their competence in STEM positively predicted their commitment and negatively predicted their turnover intentions in STEM (Singh et al., 2013). Finally, compared to female engineering graduates who previously worked in engineering but left, those who still worked in engineering report higher levels of domain-specific STEM confidence (Fouad et al., 2016). Integrating this work on socio-cognitive career theory with theory on social identity processes at work, we argue that gender identity threat forms an important explanatory mechanism as to why male dominated work contexts impose a contextual barrier for female STEM graduates' career confidence. Initial support among student samples showed that female STEM students' experience of gender identity threat in male-dominated educational contexts lowered their self-efficacy (Deemer et al., 2014) and career motivation (see for review Thoman et al., 2013) in STEM. Thus, we hypothesize that:

> *Hypothesis 4: Higher levels of gender identity threat in response to male dominated work contexts, are associated with lower levels of career confidence among, female, but not male, STEM professionals.*

MATERIALS AND METHODS

Participants and Design

In a cross-sectional field study[1] performed in the Netherlands, 877 STEM graduates filled out an online survey. Forty-five participants dropped out at an early stage and were excluded from further analyses (this drop out was random across men and women $\chi^2(1) = 0.34$, $p = 0.56$). Twelve participants had missing values on the covariates in the model (age, contract size and educational level) and were excluded from analyses. Because we only focused on STEM graduates with paid work, or who had had paid work within the past 12 months, another 13 participants were excluded. In total, 807 participants were included for analysis. Of these participants, 630 were men (78%) and 177 were women (22%)[2]. In terms of educational level, 69% completed a scientific educational STEM program at a University, and 31% completed a higher vocational educational STEM program at a University of Applied Sciences. The average contract size (in hours per week) was 36.62 ($SD = 7.4$). For women, the average contract size was 35.45 ($SD = 7.14$) hours per week, and for men the average contract size was 36.96, ($SD = 7.48$) hours per week, $t(805) = 2.40$, $p = 0.02$, *95% CI:* 0.27_{lb} – $2.75_{ub.}$ The average age of participants was $M = 35.77$ ($SD = 10.74$).

Instruments and Procedure

An online survey was distributed among all graduates from STEM study programs, via the alumni offices of two educational institutions in the Netherlands. Permission was asked to contact the alumni offices via the educational directors of all STEM educational programs. The study was approved by the Ethics Committee of the Behavioural Science and Management Faculty at the University of Twente. STEM graduates were contacted via their alumni email addresses. In total, 24,402 STEM alumni from the University and 6,035 STEM alumni from the Higher Vocational Education Institute were contacted and invited to participate in the research. From the alumni who graduated at University, 560 responses were analyzed (response rate: 2.3%) and from alumni who graduated at the Higher Vocational Education institute, 247 responses were analyzed (4.1%). Overall response rates were low and this is likely due to the fact that alumni email addresses are generally not used actively by graduates; we suspect the vast majority did not read the invitation email.

In the invitation email, STEM alumni were informed that the purpose of the study was to gain insight in the career choices that STEM graduates make after they finish their education in order to better prepare current STEM students in their labor market perspectives. A web link was provided in the email that redirected participants to the questionnaire. Online informed consent was obtained from all participants. After the general introduction, participants were asked questions about their demographic and professional background, their current work situation, their career perceptions and about the role of their gender identity at work. Unless reported otherwise, items were based on a 7-point Likert scale (1 = I totally disagree; 7 = I totally agree). It took participants about 20 min to finish the survey.

Normative and Numerical Male Dominance

To measure normative male dominance, we asked participants to indicate whether they currently worked either in the STEM sector or in a non-STEM sector. In total, 77% indicated to work in the STEM sector. Among women, this percentage was 63% and among men, it was 81%, $\chi^2(1) = 27.61$, $p < 0.001$. Specifically, of all female participants, 111 worked in the STEM sector and 66 worked outside STEM. Of all male participants, 513 worked in

[1]The current study variables were part of a larger online survey on professional development in STEM in which we also asked questions about participants' professional profile, for example with regards to their competences, personality, values and interests as well as additional questions about professional development and learning. Upon request, more information about the complete questionnaire can be obtained from the first author.

[2]Our sampling strategy was to obtain a sample size as large and representative for the population as possible (that is, alumni from two STEM educational institutes). This resulted in a sample size of $N = 807$. Because of this strategy, no *a priori* power analysis was conducted. As a general rule of thumb, $N = 100$–150 is considered the minimum sample size for conducting SEM (Ding et al., 1995). Still others advise a larger sample size, for example, $N = 200$ (Boomsma and Hoogland, 2001; Kline, 2015). Simulation studies show that with normally distributed indicator variables and no missing data, a reasonable sample size for a simple SEM model is about $N = 150$ (Muthén and Muthén, 1998/2012). For multi-group modeling, the rule of thumb is 100 observations per group (Kline, 2015). Because the required sample size also depends on the complexity of the model, another widely accepted rule of thumb is 10 observations per variable (Nunnally and Bernstein, 1967). Including covariates and interaction terms, our SEM model consists of 12 variables. This would mean that per gender group, a minimum sample size of $N = 120$ is needed. Thus, based on these rules of thumb, the sample size for both women ($N = 177$) and men ($N = 630$) can be considered large enough for the model we test.

STEM sector and 117 worked outside STEM. While the groups differ in size, within both gender groups sample sizes are such that they do allow for making reliable statistical inferences (Van Voorhis and Morgan, 2007).

Secondly, to measure numerical male dominance at work, we asked participants to estimate the ratio of women relative to men in their direct work environment (i.e., gender ratio). Participants could answer on a 5-point scale (1 = no women, only men; 2 = some women, mostly men; 3 = an equal amount of women and men; 4 = mostly women, no men; 5 = only women no men). Thus, higher scores indicated a *higher* ratio of women relative to men in the direct work environment (and thus *lower* numerical male dominance). Men indicated a stronger underrepresentation of women in their direct work environment ($M = 2.16$, $SD = 0.56$) relative to women ($M = 2.65$, $SD = 0.82$), $t(224.83) = -7.41$, $p < 0.001$, $CI_{95\%}: -0.62 - -0.38$[3]. Importantly, both genders indicated, on average, that the gender distribution was skewed such that men outnumbered women at work.

Gender Identification at Work

Gender identification at work was measured with four items taken from Derks et al. (2011a). The items were, "At work, I feel closely connected to other people of my own gender," "At work, I identify with people of my own gender," "At work, I feel committed to people of my own gender," and "At work, being a woman/man is important to me" ($\alpha = 0.80$).

Perceived Gender Identity Threat

To measure perceived gender identity threat at work we adopted four items from Hall et al. (2015). We introduced the questions by stating: *"Think about the day-to-day work activities and interactions that you have in your work. To what extent do you agree with the following statements?"* The items were: "I am often aware of the fact that I am a woman/man when I interact with others at work," "Sometimes I am concerned that being a woman/man influences how others see me professionally," "It worries me sometimes that others might judge my work on the basis of my gender," and "Sometimes I feel uncomfortable at work because I am a woman/man" ($\alpha = 0.84$).

Career Confidence

Career confidence was measured with six items adapted from Savickas and Porfeli (2011) and Gupta et al. (2015) career adaptability scales. Items were: "I know what I want in my career," "I have a clear sense of what I want to achieve in my career," "I have confidence in my career," "I keep changing my mind about what I want in my career' (reverse scored), "I often think that I should change things in my career" (reverse scored), and "I am uncertain about the choices I want to make in my career" (reverse scored; $\alpha = 0.83$).

Work Engagement

Work engagement was measured with two items from Schaufeli et al. (2006), namely "At work I feel strong and vigorous" and "When I get up in the morning, I feel like going to work," $r(807) = 0.67$, $p < 0.001$.

[3] *T*-test results with unequal variances assumed were interpreted, as Levine's test indicated unequal variances between women and men, due to a large difference in group size.

RESULTS

Descriptive Statistics

In **Table 1**, means (*M)* and standard deviations (*SD*) on model variables are displayed, separately for men and women. In addition, *t*-tests were included to test for gender differences, correcting for a potential violation of equal variances across gender groups (men are overrepresented in the dataset relative to women). Compared to men, women reported to work in STEM less often and reported lower numerical male dominance (i.e., gender ratio) in their work context. Moreover, women reported higher gender identification, higher gender identity threat and lower career confidence compared to men. No significant gender differences were found on work engagement.

In **Table 2**, correlations between variables in the model are displayed, separately for men and women. Only women but not men, reported higher gender identity threat when they worked in the STEM sector compared to non-STEM sectors. Only among women but not men, the higher the reported ratio of women in the work context relative to men, the lower the levels of reported gender identity threat. Gender identity threat at work was negatively related to career confidence among both men and women, and negatively related to work engagement, only among women. There was a positive correlation between normative (STEM vs. non-STEM) and numerical (gender ratio) male dominance; this reflects the situation in the Netherlands that the STEM sector is, numerically speaking, the most male dominated sector relative to other economic sectors (Statistics Netherlands, 2016).

To gain more insight in gender differences in reported gender ratio in the non-STEM sector, an ANOVA was conducted with gender and work sector (STEM vs. non-STEM) as independent variables and gender ratio as dependent variable. Results showed an interaction effect of Gender × Work Sector on gender ratio, $F(1,803) = 13.80$, $p < 0.001$, $\eta_p^2 = 0.02$. In the non-STEM sector, on average women indicated to work in a context with an equal gender distribution ($M = 3.21$, $SD = 0.80$), while men still reported to work in a context with a majority of men ($M = 2.57$, $SD = 0.70$), $F(1,803) = 53.07$, $p < 0.001$, $\eta_p^2 = 0.06$. In the STEM sector, both women ($M = 2.32$, $SD = 0.62$) and men ($M = 2.07$, $SD = 0.48$) reported to work in a male dominated work context, yet men reported this gender ratio to be significantly more skewed (i.e., more male dominance) than women, $F(1,803) = 16.87$, $p < 0.001$, $\eta_p^2 = 0.02$. In addition, the variables measuring numerical and normative male dominance were correlated (among women: $r = 0.53$; among men $r = 0.35$), but this level of multicollinearity is still considered small to moderate and therefore unlikely to result in Type II error, also given our relatively large sample size [see Grewal et al., 2004 for more information on multicollinearity in Structural Equation Modeling (SEM; Muthén and Muthén, 1998/2012)]. Note that the independent variables will covary in the SEM model, enabling us to draw inferences about the unique variance explained by both

TABLE 1 | Descriptive statistics on model variables of total sample (*N* = 807), women (*N* = 177), and men (*N* = 630) separately, and *t*-tests and 95% CI on gender differences.

		M	*SD*				*95% CI*	
				t	*df*	*p*	*lb*	*ub*
Work sector* $_{(0 = \text{STEM};1 = \text{non–STEM})}$	Women	0.37	0.49					
	Men	0.19	0.39	4.73	243.23	<0.001	0.11	0.27
	Total	0.23	0.42					
Gender ratio at work*	Women	2.65	0.82					
	Men	2.16	0.56	7.41	224.83	<0.001	0.36	0.62
	Total	2.27	0.66					
Gender identification	Women	3.74	1.15					
	Men	3.44	1.22	2.91	805	0.004	0.10	0.50
	Total	3.51	1.21					
Gender identity threat*	Women	3.12	1.45					
	Men	1.85	0.88	11.09	214.11	<0.001	1.04	1.49
	Total	2.13	1.16					
Career confidence	Women	4.46	1.24					
	Men	4.77	1.12	−3.02	805	0.001	−0.51	−0.12
	Total	4.70	1.16					
Work engagement	Women	5.00	1.22					
	Men	5.12	1.16	−1.24	805	0.216	−0.32	0.07
	Total	5.10	1.18					

**t-test results corrected for equal variances not assumed across gender groups where provided as Levene's test was significant for these variables. There were no differences in t-test results between corrected and uncorrected tests. A higher score on gender ratio indicates a higher representation of women in the direct work environment.*

TABLE 2 | Correlations between model variables separately for gender groups.

	1.	2.	3.	4.	5.	6.
1. Work sector $_{(0 = \text{STEM};1 = \text{non–STEM})}$	–	0.530***	0.009	−0.272***	−0.019	0.058
2. Gender ratio	0.347***	–	−0.022	−0.436***	0.032	0.054
3. Gender identification	−0.120**	−0.107**	–	0.273***	0.045	0.053
4. Gender identity threat	−0.023	0.000	0.267***	–	−0.212**	−0.151*
5. Career confidence	−0.071	−0.039	0.032	−0.098**	–	0.434***
6. Work engagement	−0.009	0.085*	0.100*	−0.030	0.475***	–

*Women (N = 177) are displayed above the diagonal; men (N = 630) are displayed below the diagonal. ***Correlation is significant at the 0.001 level. **Correlation is significant at the 0.01 level. *Correlation is significant at the 0.05 level. A higher score on gender ratio indicates a higher representation of women in the direct work environment.*

parameters of male dominance (i.e., numerical and normative) on gender identity threat and career perceptions.

Analytical Strategy

The conceptual model (**Figure 1**) was tested with SEM using MPlus 8, to obtain maximum likelihood estimates (ML) with robust standard errors and a robust chi-square measure of overall goodness of fit. The fit of a SEM model is considered good when the root mean squared error of approximation (RMSEA) and the standardized root mean square residual (SRMSR) are $\leq$0.06 and the comparative fit index (CFI) and the Tucker–Lewis Index (TLI) are $\geq$0.90. Finally, the $\chi^2 > 0.05$ and the value of χ^2, divided by the degrees of freedom should be less than 3 (Hu and Bentler, 1999; Kline, 2015).

To investigate whether the hypothesized structural equation model would differ between men and women, we applied multi-group analyses and compared model fit indices when parameter estimates are constraint (expected to be similar) or freed (expected to be different) across gender groups (Geiser, 2012). To investigate whether normative (i.e., working in the STEM sector) and numerical (gender ratio) male dominance in the work context would impact on female STEM professionals' gender identity threat, whether both variables would interact (Hypothesis 1) and whether they would be moderated by gender identification (Hypothesis 2) we Z-standardized continuous variables and computed the two-way interaction terms (Aiken et al., 1991) and estimated parameter estimates on gender identity threat. Moreover, we estimated parameter estimates from gender identity threat to work engagement and career confidence. To test the proposed mediation of gender identity threat between (male dominated) work context and career perceptions (Hypotheses 3 and 4) we performed indirect effects testing by generating

bootstrapped confidence intervals (5,000 iterations; Shrout and Bolger, 2002; MacKinnon et al., 2004).

Model Fit

We compared the hypothesized model against a baseline model (null-model) to test overall fit to the data. In the baseline model, none of the paths between variables are expected to be significant. This model obtained bad model fit, $\chi^2(60) = 441.34$, $p < 0.001$, $\chi^2/df = 7.36$. In the hypothesized model, we added Z-standardized regression paths from gender identification, gender ratio, work sector (0 = STEM; 1 = non-STEM) and their two-way interaction terms to gender identity threat[4]. Moreover, we added regression paths from gender identity threat to career confidence and work engagement. Correlational paths were added between career confidence and work engagement and all independent variables were allowed to covary. Age, contract size (hours per week) and educational level (0 = University of Applied Sciences; 1 = University) served as covariates. The hypothesized model obtained good fit ($\chi^2[30] = 48.95$, $p = 0.016$, $\chi^2/df = 1.63$, RMSEA = 0.040, SRMR = 0.022. CFI = 0.95, TLI = 0.90) and was significantly better compared to the baseline model, $\Delta\chi^2$ (60) = 392.39 $p < 0.001$. Overall, we concluded that our hypothesized model was a good fit to the data.

Hypothesis Testing

In order to test whether the proposed relationships in our model would be different for women compared to men, we conducted multi-group comparisons. Here, the model fit of the unconstrained, hypothesized model (paths were allowed to vary between men and women) was compared to the constrained model (paths were not allowed to vary), $\chi^2(45) = 101.65$, $p < 0.001$, $\chi^2/df = 2.26$. The difference between models was significant, $\Delta\chi^2(15) = 52.70$, $p < 0.001$ indicating that the relationship between male dominant work contexts (normative and numerical), gender identification, gender identity threat, and career perceptions were different between men and women. We conducted path-by-path comparisons based on $\Delta\chi^2$ testing on the parameter estimates between men and women to investigate where moderation occurs (see **Table 3**). We discuss the parameter estimates in relation to our hypotheses. See **Figures 2A,B** for standardized parameter estimates in the SEM model for men and women.

Hypothesis 1: Numerical and Normative Male Dominance Elicit Gender Identity Threat Among Women STEM Professionals

In support of Hypothesis 1, specifically among women but not men, those who indicated to work in the STEM sector reported higher levels of gender identity threat at work than those who did not work in the STEM sector ($\gamma = -0.24$, $SE = 0.09$, $p = 0.010$). Moreover, the higher the ratio of women relative to men in the work context, the lower women's but not men's reported levels of gender identity threat ($\gamma = -0.56$, $SE = 0.90$, $p < 0.001$). Moreover, specifically women but not men working in STEM faced a double identity threat in male dominated work contexts; the interaction effect between work sector (STEM vs. non-STEM) and gender ratio among women was significant ($\gamma = 0.35$, $SE = 0.12$, $p = 0.005$; see **Figure 3**). Simple slope analysis revealed that women who worked in the STEM sector (normative male dominance) *and* reported a highly skewed male-to-female ratio in their work context (numerical male dominance) experienced highest levels of gender identity threat. Specifically, for women working in the STEM sector, gender identity threat increased significantly as the ratio of women to men decreased, $b = -0.71$, $t(176) = -5.27$, $p < 0.001$. While a similar trend was found for women working in non-STEM sectors, the relationship between gender ratio and gender identity threat was not significant, $b = -0.23$, $t(176) = -1.95$, $p = 0.052$. Put differently, when the ratio of women to men was reported as relatively high ($M+1$ SD), there was no evidence that work sector (STEM vs. non-STEM) affected experienced gender identity threat, $b = -0.23$, $t(176) = -0.98$, $p = 0.33$. However, when the ratio of women to men in the work context was reported as low ($M-1$ SD; e.g., strong underrepresentation of women), women working in the STEM sector reported significantly higher levels of gender identity threat relative to women outside STEM, $b = -0.71$, $t(176) = -2.47$, $p = 0.015$. Thus, numerical underrepresentation of women in the work context forms a source of gender identity threat, more so for women working in- than outside the STEM sector.

Hypothesis 2: Effects of Male Dominance at Work Are Stronger for Women With High Gender Identification

Gender identification was significantly associated with experienced gender identity threat, such that the higher individuals identified with their gender identity at work, the higher the gender identity threat they experienced at work. This was the case for both men ($\gamma = 0.25$, $SE = 0.05$, $p < 0.001$) and women ($\gamma = 0.25$, $SE = 0.08$, $p = 0.001$). Importantly, in support for Hypothesis 2, specifically for women, the effect of gender identification on gender identity threat was contingent upon both numerical and normative male dominance at work; both the two-way interaction-effect between work sector (STEM vs. non-STEM) and gender identification ($\gamma = 0.16$, $SE = 0.08$, $p = 0.048$), as well as the interaction effect between gender ratio and gender identification was significant ($\gamma = -0.18$, $SE = 0.07$, $p = 0.012$), for women but not men[5].

In **Figure 4** the interaction-effect between work sector and gender identification is displayed. Simple slope analysis revealed that for women in non-STEM sectors, gender identity threat was significantly higher among high compared to low identifiers, $b = 0.73$, $t(176) = 4.09$, $p < 0.001$. Similar but weaker results for gender identification were found among women in STEM, $b = 0.33$, $t(176) = 2.48$, $p = 0.014$. Moreover, women who strongly identified with their gender identity ($M+1$ *SD*) reported similarly high levels of gender identity threat at work,

[4]We also explored the three-way interaction (work sector × gender ratio × gender identification) and found that it was not significant for either men or women.

[5]Note that while these interaction effects were significant for women but not men, the $\Delta\chi^2$ tests on the parameter estimates across the gender groups were not significant (gender ratio × gender ID: $\Delta\chi^2[1] = 1.70$, $p = 0.19$; work sector × gender ID: $\Delta\chi^2[1] = 2.65$, $p = 0.10$).

TABLE 3 | Standardized direct and indirect effects parameter estimates and path-by-path analysis on $\Delta\chi^2$ for both gender groups (women $N = 177$; men $N = 630$) separately.

			Women		Men		
			Estimate	*p*	Estimate	*p*	$\Delta\chi^2$
Independent variables → gender identity threat							
Work sector (0 = STEM; 1 = non−STEM)	→	Gender identity threat	−0.24	0.012	0.01	0.875	6.00*
Gender ratio	→	Gender identity threat	−0.56	< 0.001	0.08	0.319	29.23***
Gender ID	→	Gender identity threat	0.25	0.012	0.25	< 0.001	1.57
Sector × ratio	→	Gender identity threat	0.35	0.005	−0.09	0.340	10.63**
Ratio × gender ID	→	Gender identity threat	−0.18	0.016	−0.07	0.228	1.70
Sector × gender ID	→	Gender identity threat	0.16	0.048	0.00	0.981	2.64
Gender identity threat → career perceptions							
Gender identity threat	→	Career confidence	−0.12	0.001	−0.11	0.007	0.04
		Work engagement	−0.16	0.034	−0.03	0.348	1.22
Covariates							
Age	→	Career confidence	0.19	0.022	0.26	< 0.001	0.13
		Work engagement	0.18	0.041	0.18	< 0.001	0.47
Contract size	→	Career confidence	0.14	0.053	0.03	0.499	1.95
		Work engagement	0.16	0.019	0.13	0.003	0.21
Education level (0 = applied university; 1 = university)	→	Career confidence	0.25	0.004	0.12	0.018	1.88
		Work engagement	0.18	0.036	0.04	0.463	1.94

****$\Delta\chi^2$ is significant at the 0.001 level. **$\Delta\chi^2$ is significant at the 0.01 level. *$\Delta\chi^2$ is significant at the 0.05 level. A higher score on gender ratio indicates a higher representation of women in the direct work environment.*

irrespective of whether they worked in- or outside STEM, $b = -0.20$, $t(176) = -0.62$, $p = 0.54$. Women who identified less strongly with their gender identity (M −1 SD) reported significantly higher levels of gender identity threat when working in STEM relative to working in a non-STEM sector, $b = -1.03$, $t(176) = -2{,}73$ $p = 0.007$.

In **Figure 5**, the interaction effect between gender ratio at work and gender identification is displayed. Simple slope analysis revealed that when women were strongly underrepresented relative to men at work (M−1 SD; low ratio women), gender identity threat was significantly higher among high compared to low identifiers, $b = 0.50$, $t(176) = 3.79$, $p < 0.001$. When women and men were approximately equally represented at work (M+1 SD; high ratio women, $M = 2.93$ on 5-point scale, with 3 indicating equal gender representation), gender identity threat was relatively low, and there was no evidence for an association with gender identification, $b = 0.02$, $t(176) = 0.12$, $p = 0.91$. Moreover, women who worked in a context with an approximately equal gender distribution experienced lower levels of gender identity threat relative to those who worked in a male dominated context; this was the case for both low (M −1 SD; $b = -0.51$, $t(176) = -3.71$, $p < 0.001$) and high [M +1 SD; $b = -0.87$, $t(176) = 5.54$, $p < 0.001$] gender identifiers.

Hypotheses 3 and 4: For Women, Gender Identity Threat Mediates the Relationship Between Male Dominance and Career Perceptions

We hypothesized that to the extent that normative and numerical male dominance at work form a source of gender identity threat among women STEM graduates, this would have negative consequences for their career outcomes, namely work engagement (*Hypothesis 3*) and career confidence (*Hypothesis 4*). To test these indirect effects, we generated 95% bias-corrected bootstrapped confidence intervals (CI) on indirect effects (5,000 iterations; Shrout and Bolger, 2002; MacKinnon et al., 2004). Moreover, we imposed model constraints on the indirect effects with $\Delta\chi^2$ testing to investigate whether indirect effects were different across gender groups (Ryu and Cheong, 2017).

First, with respect to work engagement (**Figure 2** and **Table 3**), results showed that gender identity threat was significantly negatively related to work engagement among women ($\gamma = -0.16$, $SE = 0.07$, $p = 0.034$), but no evidence was found for such relationship among men ($\gamma = -0.03$, $SE = 0.04$, $p = 0.384$). Note however that the $\Delta\chi^2$ test of the direct effect between gender identity threat and work engagement across gender groups was not significant. In **Table 4**, $CI_{95\%}$ for the indirect effects in the SEM model are displayed. Results showed a significant indirect effect of work sector (STEM vs. non-STEM), gender ratio, and the interaction term between work sector and gender ratio on work engagement via gender identity threat among women, while no such evidence was found among men. This difference was significant between gender groups. That is, in line with Hypothesis 3, to the extent that normative and numerical male dominance form a source of gender identity threat among women, this negatively affected their work engagement.

Second, with respect to career confidence results from the parameter estimates (**Figure 2** and **Table 3**) showed that gender identity threat was significantly negatively related to career confidence among both women ($\gamma = -0.22$, $SE = 0.07$, $p = 0.001$) and men ($\gamma = -0.11$, $SE = 0.04$, $p = 0.007$). In **Table 4**, $CI_{95\%}$

for the indirect effects in the SEM model are displayed. Results showed a significant indirect effect of work sector (STEM vs. non-STEM), gender ratio, and the interaction term between work sector and gender ratio on career confidence via gender identity threat among women, while no such evidence was found among men. This gender difference was significant for both the main-effects and the interaction-effects. That is, in line with Hypothesis 4, to the extent that normative and numerical male dominance form a source of gender identity threat among women, this negatively affected their career confidence.

Third, results in **Table 4** also showed that for both women and men, gender identification indirectly predicted their career confidence via gender identity threat; the more STEM graduates identified with their gender identity at work, the more gender identity threat they experienced, with lower career confidence as a down-stream effect. For women, we found that this indirect effect of gender identification was also contingent upon the gender ratio (i.e., numerical dominance) in the direct work environment. That is, particularly women who were highly identified with their gender identity and who were also strongly outnumbered by men in their work context were negatively affected in their career confidence via high levels of gender identity threat. Importantly, however, while the indirect effect of the interaction term between

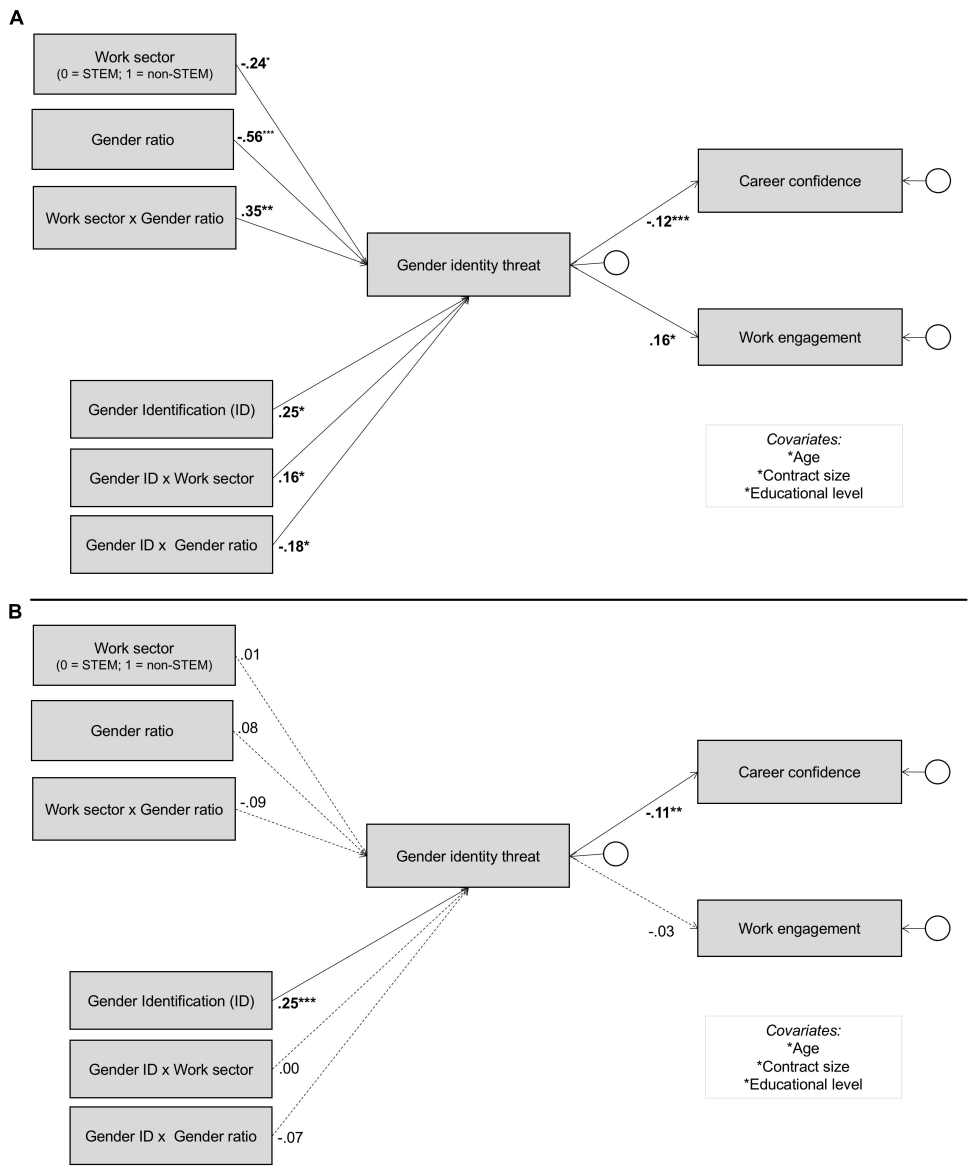

FIGURE 2 | (A) Structural Equation Model for women (*N* = 177). Significant standardized parameter estimates marked in bold. **(B)** Structural Equation Model for men (*N* = 630). Significant standardized parameter estimates marked in bold; non-significant standardized parameter estimates are indicated with a dotted line.

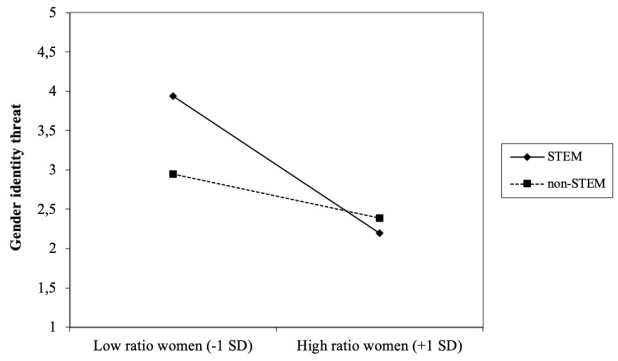

FIGURE 3 | Two-way interaction-effect gender ratio × work sector (STEM vs. non-STEM) on gender identity threat among women.

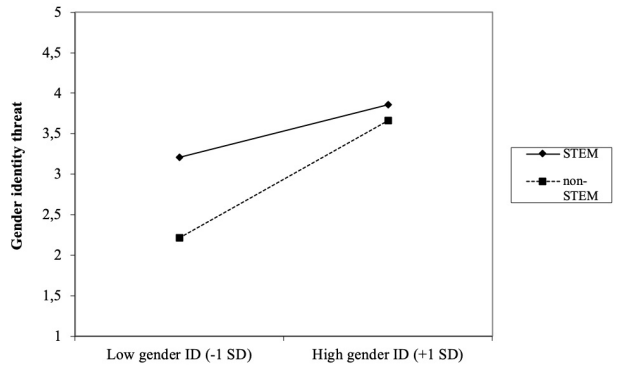

FIGURE 4 | Two-way interaction-effect work sector (STEM vs. non-STEM) × gender identification on gender identity threat among women.

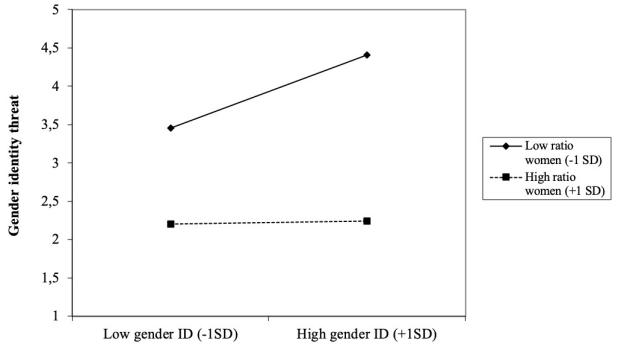

FIGURE 5 | Two-way interaction-effect gender ratio × gender identification on gender identity threat among women.

gender identification and gender ratio was significant among women but not men, the $\Delta\chi^2$ of this indirect effect was not significant.

Finally, it is interesting to note that the variance explained by numerical (gender ratio) and normative (work sector) male dominance at work, gender identification and their two-way interaction terms on gender identity threat among women was R^2 = 0.30, which boils down to an effect size of f^2 = 0.43 (large effect; Cohen, 1988). For men, the explained variance was R^2 = 0.08, which boils down to an effect size of f^2 = 0.09 (small effect), driven only by gender identification. The explained variance for career confidence and work engagement was considerably smaller among both women (career confidence: R^2 = 0.10; work engagement R^2 = 0.07) and men (career confidence: R^2 = 0.06; work engagement R^2 = 0.04). Indeed, as prior research demonstrates, career confidence and work engagement also depend on individual- and organization-level factors.

DISCUSSION

The goal of this paper was to investigate how different institutional parameters of male dominance predict career perceptions of women in STEM. In doing so, we relied on double dominance theory (Gruber and Morgan, 2005) and distinguished between numerical and normative male dominance at work. We focussed on a unique population of professionals, namely highly educated female STEM graduates who opted for a career either in- or outside the STEM sector. We took a social identity lens (Tajfel and Turner, 1979) to put forward gender identity threat as an important mechanism to explain how masculine work contexts translate into career barriers for women in STEM.

Numerical and Normative Male Dominance Have Unique and Combined Effects on Gender Identity Threat

Study results showed that the more women reported to be outnumbered by men in their direct work environment (i.e., *numerical* male dominance), the higher their experience of gender identity threat was. Following from the social identity approach (Tajfel and Turner, 1979), being one of the only few women at work means being highly dissimilar from most other colleagues. This makes one's gender category highly salient (Wilder, 1984; Turner et al., 1987), increases awareness about one's gender at work, and heightens the expectation that one will be viewed by others in terms of one's gender category (Frey and Tropp, 2006). In line with prior research, our data revealed that numerical male dominance thus gives rise to gender identity threats among female STEM graduates (e.g., Murphy et al., 2007; Veldman et al., 2017).

Above and beyond women's numerical male dominance, the mere fact of working in the STEM vs. non-STEM sector (i.e., *normative* male dominance) also uniquely predicted gender identity threat. Women working in STEM reported higher gender identity threat levels compared to women working in a non-STEM sector. Traditionally male dominant professional cultures such as STEM tend to be associated with a higher value attached to the male identity and to typically masculine characteristics than the female identity and typically feminine characteristics (Branscombe and Ellemers, 1998; Derks et al., 2006, 2018; Van Laar et al., 2010). Indirect support that this is the case in our data can be inferred from the fact that male professionals working in STEM identified more strongly with their gender identity at work

TABLE 4 | Indirect effects testing with 95% bias-corrected bootstrapped confidence intervals (CI) on the mediating effect of gender identity threat (M) between independent variables (X) and work outcomes (Y), for men and women separately.

			Women			Men			
			Indirect effect	$CI_{95\%}$		Indirect effect	$CI_{95\%}$		$\Delta\chi^2$
				LB	*UB*		*LB*	*UB*	
Indirect effect X → Y via gender identity threat (M)									
Work sector (0 = STEM;1 = non−STEM)	→	Work engagement	0.036	0.003	0.087	0.000	−0.008	0.004	6.41**
		Career confidence	0.051	0.009	0.109	−0.001	−0.014	0.010	6.21**
Gender ratio	→	Work engagement	0.120	0.046	0.213	−0.008	−0.025	0.011	10.13***
		Career confidence	0.087	0.007	0.175	−0.002	−0.016	0.006	4.80*
Gender ID	→	Work engagement	−0.053	−0.119	−0.012	−0.026	−0.051	−0.010	1.75
		Career confidence	−0.038	−0.102	−0.003	−0.008	−0.025	0.009	2.26
Sector × ratio	→	Work engagement	−0.075	−0.163	−0.019	0.010	−0.022	0.024	10.04**
		Career confidence	−0.054	−0.135	−0.007	0.003	−0.013	0.018	8.18**
Ratio × gender ID	→	Work engagement	0.039	0.006	0.088	0.008	−0.005	0.024	2.11
		Career confidence	0.028	0.001	0.077	0.002	−0.004	0.015	2.87
Sector × gender ID	→	Work engagement	−0.035	−0.092	−0.001	0.000	−0.022	0.012	2.83
		Career confidence	−0.026	−0.077	0.000	0.000	−0.007	0.005	3.07

*$p \leq 0.05$; **$p \leq 0.01$; ***$p \leq 0.001$.

than they did when working outside STEM (**Table 2**). Our results suggest that for women, working in the STEM sector elicits more gender identity threat than working outside the STEM sector – even among women who have successfully obtained an academic degree in STEM and have made the decision to continue their career in this field.

The *combination* of numerical and normative male dominance resulted in highest levels of gender identity threat among women STEM graduates. This is in line with what double-dominance theory would suggest (Gruber and Morgan, 2005). Thus far, this theory has been applied from a *perpetrator's* perspective, to predict the prevalence of sexual harassment cases in work contexts where both numerical and normative male dominance are high (de Haas and Timmerman, 2010; Dresden et al., 2018). Expanding on this theory, in this study our primary focus was on the *target's* perspective and the demonstration that for women, the joint experience of numerical and normative male dominance was associated with highest levels of gender identity threat. It could be speculated that the gender identity threat findings uncovered in this research are related to women's actual experience of sexual harassment in male dominant work contexts (Leaper and Starr, 2018). Further combining these sociological and socio-psychological theories to investigate this connection might be an interesting avenue for future research.

Our investigation of social identity processes among a unique population of female and male STEM professionals contributes to recent research and theorizing on social identity threats in naturalistic work settings (Hall et al., 2015, 2018a,b). Also, it appeals to the growing call for research that seeks to understand social identity processes among women in STEM *after* they complete their education and enter the workplace (Walton et al., 2015). Adding to this knowledge base, our study demonstrates that social identity threats are not only evoked in response to temporary (e.g., daily) activation of situational cues that signal male dominance *within* STEM, but also that working in the STEM sector in itself (as opposed to outside STEM) serves as a source of gender identity threat among women professionals. This suggests that while women STEM graduates' personal experience and ability in STEM may certainly contribute to their overall confidence and perseverance in STEM (Cech et al., 2011; Fouad et al., 2016), this does not completely override the fact that masculine STEM working contexts impose a threat on women's gender identity and form barriers to their career advancement. Together, our findings enrich social identity research in organizations, extending its validity not only to short-lived, situational salience of gender inequality or bias at work, but also to prolonged exposure to biased institutional systems.

In terms of practical implications, our results point to the importance of the numerical representation of women for their work experiences, especially in the STEM sector. The reported gender ratio at work most strongly affected women's experienced gender identity threat in our model, with negative consequences for their work engagement and career confidence. Moreover, this effect turned out to be even stronger for women working in STEM. This suggests that actions that increase the number of women working in STEM can have potent effects on women's work experiences. The stronger the representation of women in STEM, the less gender identity threat women experience, and hence the stronger their work engagement and career confidence. This, in turn, may have important trickle-down effects that impact upon the masculine organizational culture within the STEM sector. For example, the more women feel confident and engaged at work and the less they worry about their gender identity, the more likely it is that they will be their authentic self, hereby adding to increased heterogeneity in perspectives in their company (Galinsky et al., 2015). Only when women add their perspectives rather than try to assimilate into masculine culture (e.g., Derks et al., 2016) will

gender diversity actually lead to more optimal diverse human capital utilization.

The Role of Gender Identification in Masculine Work-Contexts

The current results once again show that gender identification at work plays an important role in the extent to which masculine work contexts affect women's experience of social identity threat. Specifically, our study showed that especially women who identified highly with their gender at work, were negatively affected by being strongly outnumbered by men in their work context. Put differently, when women were underrepresented at work, those who attributed the least significance to their gender identity were also the least affected by gender identity threats. This finding is in line with research showing that one identity strategy for women to protect themselves against gender identity threats in masculine work contexts is to *distance* the self from the gender identity at work (Ellemers et al., 2012; Derks et al., 2016; Faniko et al., 2017). Indeed, in a recent life history study, female associate and full professors in science tended to downplay or ignore the significance of gender when being interviewed about their career trajectory (Britton, 2017).

Gender identification also played a moderating role in relation to women's gender identity threat depending on their work sector (STEM vs. non-STEM). While gender identity threat was generally higher when women worked in the STEM sector, especially in the non-STEM sector women's experience of gender identity threat depended more strongly on their gender identification: in the non-STEM sectors, women's low gender identification yielded lowest levels of gender identity threat. In line with recent work on 'gender blindness' (Martin and Phillips, 2017) this may suggest that when the relevance of women's gender identity at work is low, both in the work context (non-STEM; low normative male dominance) and from the individual's perspective (low gender identification) they are least likely to feel uncertain or uncomfortable at work on the basis of being a woman.

Importantly, however, this is not to say that we consider low gender identification at work an effective strategy to prevent women STEM professionals from experiencing identity threats. Firstly, while our results showed that lower gender identification was associated with lower reported gender identity threat, low identifiers were not completely immune to gender identity threat effects in male dominated work environments. The lowest identity threat levels were reported among women working either outside the STEM sector, or in an environment where gender representation was approximately equal. Secondly, low gender identification also has disadvantages, because it causes women to distance from other women, and to not support (or even oppose) collective actions directed at improving their low status position in masculine work contexts (e.g., Derks et al., 2016). As a consequence, low identified women in STEM also likely do not serve as a role model for the undergraduate female STEM students and their career decisions to stay or leave the STEM sector. Finally, high gender identification also has advantages. Following the rejection-identification model (Branscombe et al., 1999) gender identification can serve a protective function to cope with gender inequality, in that a sense of belongingness and acceptance in a minority group of women at work can provide a psychological buffer against hostile, male dominant work climates which lowers psychological distress (Sellers et al., 2003) and increases well-being (Latrofa et al., 2009). We thus recommend future research to be directed at identity coping mechanisms that do not involve a dissociation, but rather an integration of women's gender identity at the workplace.

Social Identity Processes Among Male STEM Professionals

Contrary to the results for female STEM professionals, no empirical evidence was found that numerical and normative male dominance at work impose barriers to men's careers; men's experience of gender identity threat at work was unrelated to these context effects, and gender identity threat did not mediate the relationship between numerical and normative male dominance at work and career perceptions. However, that is not to say that gender identity processes do not play a role for male STEM professionals. For men too, higher gender identification was associated with higher levels of gender identity threat. What's more, correlational analyses (**Table 2**) indicated that men's identification with their gender identity at work was higher when working in the STEM sector relative to outside STEM, and when their work context was composed of a higher majority of men. In addition, when men did feel threatened at work on the basis of their gender identity, this too had a small but significantly negative effect on their career confidence. A crucial question remains what institutional parameters will elicit feelings of gender identity threat among male STEM professionals. Building on recent work, the potential loss of men's high-status position in STEM in response to implementation of gender quota or pro-diversity programs may form one such identity threat (Dover et al., 2016). This forms an interesting avenue for future research.

Our findings suggest that for men, working in male dominated STEM contexts is inherently connected to their male identity. Recent work demonstrates that masculine professional stereotypes may not only discourage women, but also some men, who feel they are 'not men enough' to measure up to the macho stereotypes associated with a professional field (Peters et al., 2014). Peters et al. (2014) demonstrated that this is the case among male commando recruits in the Royal Marine and male surgical trainees in the medical sector. Although the content of masculine stereotypes may be quite different in the STEM sector, in future research a similar investigation in the STEM sector is highly relevant and timely, because even though dropout rates in the STEM sector are highest among women, they are also high among men (about half of men STEM graduates opts for a career outside STEM; Statistics Netherlands, 2016).

First empirical support for the idea that the STEM sector is mostly considered an attractive career option among prototypically masculine STEM graduates (irrespective of their gender) was found in research on STEM students' professional identity profiles. This work shows that those with a stereotypically "Nerdy" profile (e.g., highly analytical and introverted, values

intellectual stimulation, likes computer gaming) identified highest with their professional identity and were most likely to opt for a career in STEM (van Veelen et al., 2018). This suggests that people's perception about what it means to be a successful professional STEM is quite narrowly defined and masculine. This does not only obstruct women STEM graduates from opting for a career in STEM, but also a lot of men. The STEM sector thus faces the challenge to increase numerical gender diversity in the work force, but also to foster inclusive work climates (Otten and Jansen, 2014) where people with different demographic *and* professional profiles feel accepted and appreciated.

Limitations and Future Research

We demonstrated that female STEM graduates who work in the STEM sector *and* who work with a majority of men experience the highest levels of gender identity threat. This finding informs us about the social-identity explanations as to why women are more likely to opt for a career outside STEM, or leave the STEM sector at a later point. The fact that male dominance manifests itself on different institutional parameters (i.e., numerical and normative), and that they have unique and joint explanatory power, calls for a further detection and investigation of the combined effects of other institutional parameters that signal male dominance on social identity threat in future research. For example, we may expect that institutional parameters such as organizations' corporate structure (e.g., flat vs. hierarchical; Morgan, 2014), employment conditions (e.g., contract size, flexible working, leave arrangements (Plantenga and Remery, 2010), or gender diversity policies (Dobbin and Kalev, 2018; Pietri et al., 2018) jointly add to the potency of the work context to form a source of gender identity threat in women's efforts to build a career.

We assume that working in STEM (vs. non-STEM) serves as a proxy for high (vs. lower) normative male dominance in the work context, and we do so based on prior evidence demonstrating that – particularly in the Netherlands – stereotypically masculine characteristics tend to be positively valued in STEM (Diekman et al., 2010; Leslie et al., 2015; Miller et al., 2015; Storage et al., 2016; Derks et al., 2018) and women's professional ability tends to be undermined in STEM (e.g., Nosek et al., 2009; Miller et al., 2015). Yet in the current study, we cannot pinpoint the exact nature of normative male dominance, and what specific elements of the STEM professional culture drive women's higher levels of gender identity threat. Is it the negative gender stereotype that 'women are worse in math' (Cheryan et al., 2009), the 'innate brilliance' that is attributed to people working in STEM (Leslie et al., 2015), or the 'performance-driven culture' in STEM (Bleijenbergh et al., 2012) that cause women to feel more uncertain and negatively judged as a professional in- than outside STEM? In follow-up studies, we suggest to measure STEM professionals' perceptions of their own work sector (STEM vs. non-STEM) on these specific elements in order to (1) directly test the assumption that higher gender identity threat levels among women working in STEM relative to in other sectors are indeed attributable to a stereotypically higher endorsement of masculine attributes and a lower expectation about women's ability in STEM work contexts. Relatedly, our holistic approach to differentiate between STEM and non-STEM does not consider that STEM disciplines vary strongly in gender bias and inequality. For example, biology and neurosciences are far more 'gender-equal' compared to engineering and physics (Cheryan et al., 2017). Future research would benefit from more fine-grained field studies investigating *what* specific masculine norms in STEM professional cultures make the STEM sector a women-unfriendly place to work, and *where* in different STEM disciplines these gendered norms manifest most strongly.

Because of the cross-sectional nature of the data, claims about causality should be made with caution. While it is quite safe to assume that work context parameters *precede* women's experience of gender identity threat in that particular context, a reverse causal model in which career attitudes precede gender identity threat could – in theory – be possible, such that *because* the work context negatively affects women's career confidence and work engagement, it makes them more prone to experience gender identity threats. Nevertheless, a statistical test of this alternative model resulted in poor model fit[6] and non-significant parameter estimates for both direct and indirect effects, rendering this reverse causal model unlikely. In a similar vein, in the current cross-sectional data we were unable to rule out third variable explanations, for example that individual differences between women who do and do not opt for a career in STEM can explain why women in STEM experience more gender identity threat than women STEM graduates who work outside of STEM. However, we deem it unlikely that those women who are somehow most vulnerable to these settings are the ones who end up choosing them. In any case, future research in the form of experimental or longitudinal designs could offer a more solid method to make causal inferences about contextual causes and career consequences of gender identity threat.

The self-report data in this study may raise concerns about common method bias (Podsakoff et al., 2003)[7]. Yet scale testing (see footnote 7) demonstrated that common method variance was negligible (Podsakoff et al., 2003). In addition, significant moderation effects cannot be artifacts of common method bias (Siemsen et al., 2010). In future research, a multi-source method, for example including objective measures of numerical representation of women and men in the work context and actual turnover rates, promotions and salary raises of professionals working in STEM and non-STEM via personnel records adds further validity to the current study outcomes.

[6] An alternative causal model in which women's career confidence and work engagement *preceded* gender identity threat resulted in poor model fit ($\chi^2[24] = 181.74$, $p < 0.001$, $\chi^2/df = 7.57$, RMSEA = 0.13, SRMR = 0.05. CFI = 0.59, TLI = −0.03).

[7] We investigated the presence of common method variance by using Harmans single factor test (Podsakoff et al., 2003), in which all scale items [gender ratio, work sector, gender identification (four items), identity threat (four items), career confidence (six items) and work engagement (two items)] were entered in an unrotated exploratory factor analysis (PCA) with the number of factors constrained to one. Common method bias is assumed be to present when the single factor explains over 50% of variance, yet our resulting factor merely explained 22% of variance in the items.

While the ecological validity of our field data is high, we must consider that selection biases are present in our sample. For example, in our sample 77% of the graduates indicated to work in the STEM sector (66% of the women; 81% of the men), while national figures demonstrate that around 30% of all women and 50% of all men STEM graduates opt for a career in STEM (Statistics Netherlands, 2016). A reason for this difference might be that those who decided to stay in STEM after graduation feel more affiliated with their past education and their time at University. Thus, they might be more likely to read emails on their alumni address and respond to requests to participate in research to support STEM students' career development. Moreover, because this study was set out in the Netherlands – in which gender biases in STEM are relatively high (Miller et al., 2015) – we cannot generalize our findings to other countries. In future research, a cross-cultural comparison can offer valuable insights as to whether levels of gender identity threat in response to working in STEM (vs. non-STEM) differ depending on the endorsement of negative gender stereotypes in STEM on a national level.

In this study, we focused on work context parameters that have *negative* (threatening) consequences for women working in STEM and form barriers to their careers. While this focus is highly valuable to explain why women opt out of STEM, a more solution-driven approach would be to focus on *positive* context parameters that challenge women – and men – working in STEM and form a springboard to their careers. As a first step, recent research demonstrated that the presence of *gender inclusive policies* reduced feelings of gender identity threat among women in engineering (Hall et al., 2018b). Importantly, they demonstrated that these gender inclusive policies reduced feelings of gender identity threat even when the numerical representation of women in the work context was low. As such, even if it is difficult for STEM organizations to attract a higher number of women in their work force because of today's shortages in highly skilled STEM professionals on the labor market, this should not prevent organizations from advocating gender inclusive norms in order to create an identity-safe working climate, where women want to stay.

CONCLUSION

Women enter the STEM sector at lower rates, and leave the STEM sector at higher rates than do men. Taking a social identity approach, this research distinguished between two institutional parameters of male dominance that uniquely but jointly predict female STEM graduates' experience of gender identity threat at work. Gender identity threat, in turn, served as an explanatory mechanism as to why numerical and normative male dominance in STEM negatively affect women's career confidence and work engagement. To break this vicious cycle, STEM organizations should aim to improve gender equality at work, both numerically (improving women's representation) *and* normatively (removing negative gender stereotypes). By removing these contextual barriers, the STEM sector likely becomes a more appealing place to work for a larger, more inclusive group of women and men.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author, RvV, upon reasonable request.

AUTHOR CONTRIBUTIONS

RvV and BD developed the conceptual model and design of the study. ME managed the set-up and roll out of the survey and supervised the RA's during the data collection processes. RvV performed literature searches, conducted the data analyses, interpreted the results, and wrote the manuscript. BD and ME gave advice at all stages during this process and provided feedback on the manuscript.

FUNDING

This research was supported by a grant (p29) from the National Centre of Expertise Techniekonderwijs TechYourFuture awarded to ME and RvV, and by an NWO VIDI grant (016.155.391) awarded to BD.

ACKNOWLEDGMENTS

We would like to thank our Research Assistants (RA's) Randy Möwes and Dieuwertje ten Berg for their great work during the data collection process.

REFERENCES

Aiken, L. S., and West, S. G. (1991). *Multiple Regression: Testing and Interpreting Interactions*. Newbury Park: Sage Publication.

Alt, N. P., Goodale, B., Lick, D. J., and Johnson, K. L. (2017). Threat in the company of men: ensemble perception and threat evaluations of groups varying in sex ratio. *Social Psychol. Pers. Sci.* 1–8. doi: 10.1177/1948550617731498

Bakker, A. B., and Demerouti, E. (2008). Towards a model of work engagement. *Career Dev. Int.* 13, 209–223. doi: 10.1108/13620430810870476

Belkin, L. (2003). *The Opt-out Revolution. New York Times Magazine*. Available at: https://www.nytimes.com/2003/10/26/magazine/the-opt-out-revolution.html [accessed August 27, 2018].

Bleijenbergh, I. L., van Engen, M. L., and Vinkenburg, C. J. (2012). Othering women: fluid images of the ideal academic. *Equal. Diver. Incl.* 32, 22–35. doi: 10.1108/02610151311305597

Boomsma, A., and Hoogland, J. J. (2001). "The robustness of LISREL modeling revisited," in *Structural equation models: Present and future. A Festschrift in honor of Karl Jöreskog*, Vol. 2, eds R. Cudeck, S. du Toit, and D. Sörbom (Lincolnwood, IL: Scientific Software International), 139–168.

Branscombe, N. R., and Ellemers, N. (1998). "Coping with group-based discrimination: individualistic versus group-level strategies," in *Prejudice: The Target's Perspective*, eds J. K. Swim and C. Stangor (New York, NY: Academic Press), 243–266.

Branscombe, N. R., Ellemers, N., Spears, R., and Doosje, B. (1999). "The context and content of social identity threat," in *Social Identity: Context, Commitment, Content*, eds N. Ellemers, R. Spears, and B. Doosje (Oxford: Blackwell Science), 35–58.

Britton, D. M. (2017). Beyond the chilly climate: the salience of gender in women's academic careers. *Gender Soc.* 31, 5–27. doi: 10.1177/0891243216681494

Cadinu, M., Maass, A., Lombardo, M., and Frigerio, S. (2006). Stereotype threat: the moderating role of Locus of Control beliefs. *Eur. J. Soc. Psychol.* 36, 183–197. doi: 10.1002/ejsp.303

Catalyst (2018). *Women in Science, Technology, Engineering, and Mathematics (STEM)*. Available at: https://www.catalyst.org/knowledge/women-science-technology-engineering-and-mathematics-stem#footnote27_777ra2y [accessed August 17, 2018].

Cech, E., Rubineau, B., Silbey, S., and Seron, C. (2011). Professional role confidence and gendered persistence in engineering. *Am. Sociol. Rev.* 76, 641–666. doi: 10.1177/0003122411420815

Cedefop (2016). *Skill Shortage and Surplus Occupations in Europe*. Available at: http://www.cedefop.europa.eu/files/9115_en.pdf [accessed August 27, 2018].

Cheryan, S., Plaut, V. C., Davies, P. G., and Steele, C. M. (2009). Ambient belonging: how stereotypical cues impact gender participation in computer science. *J. Pers. Soc. Psychol.* 97, 1045–1060. doi: 10.1037/a0016239

Cheryan, S., Ziegler, S. A., Montoya, A. K., and Jiang, L. (2017). Why are some STEM fields more gender balanced than others? *Psychol. Bull.* 143, 1–35. doi: 10.1037/bul0000052

Cohen, J. (1988). *Statistical Power Analysis for the Behavioral Sciences*. New York, NY: Routledge Academic.

Crocker, J., and Major, B. (1989). Social stigma and self-esteem: the self-protective properties of stigma. *Psychol. Rev.* 96, 608–630. doi: 10.1037/0033-295X.96.4.608

Davies, P. G., Spencer, S. J., Quinn, D. M., and Gerhardstein, R. (2002). Consuming images: how television commercials that elicit stereotype threat can restrain women academically and professionally. *Pers. Soc. Psychol. Bull.* 28, 1615–1628. doi: 10.1177/014616702237644

Deemer, E. D., Thoman, D. B., Chase, J. P., and Smith, J. L. (2014). Feeling the threat: stereotype threat as a contextual barrier to women's science career choice intentions. *J. Career Dev.* 41, 141–158. doi: 10.1177/0894845313483003

de Haas, S., and Timmerman, G. (2010). Sexual harassment in the context of double male dominance. *Eur. J. Work Organ. Psychol.* 19, 717–734. doi: 10.1080/09541440903160492

Derks, B., Ellemers, N., Van Laar, C., and De Groot, K. (2011a). Do sexist organizational cultures create the Queen Bee? *Br. J. Soc. Psychol.* 50, 519–535. doi: 10.1348/014466610X525280

Derks, B., Van Laar, C., Ellemers, N., and De Groot, K. (2011b). Gender-bias primes elicit queen-bee responses among senior policewomen. *Psychol. Sci.* 22, 1243–1249. doi: 10.1177/0956797611417258

Derks, B., Inzlicht, M., and Kang, S. (2008). The neuroscience of stigma and stereotype threat. *Group Process. Intergroup Relat.* 11, 163–181. doi: 10.1177/1368430207088036

Derks, B., van Laar, C., and Ellemers, N. (2006). Striving for success in outgroup settings: effects of contextually emphasizing ingroup dimensions on stigmatized group members' social identity and performance styles. *Pers. Soc. Psychol. Bull.* 32, 576–588. doi: 10.1177/0146167205283336

Derks, B., Van Laar, C., and Ellemers, N. (2016). The queen bee phenomenon: why women leaders distance themselves from junior women. *Leadersh. Q.* 27, 456–469. doi: 10.1016/j.leaqua.2015.12.007

Derks, B., Van Veelen, R., and Handgraaf, M. (2018). Succesful economists are highly masculine. *Econ. Stat. Ber.* 103, 16–19.

Diekman, A. B., Brown, E. R., Johnston, A. M., and Clark, E. K. (2010). Seeking congruity between goals and roles: a new look at why women opt out of science, technology, engineering, and mathematics careers. *Psychol. Sci.* 21, 1051–1057. doi: 10.1177/0956797610377342

Ding, L., Velicer, W. F., and Harlow, L. L. (1995). Effects of estimation methods, number of indicators per factor, and improper solutions on structural equation modeling fit indices. *Struct. Equ. Model.* 2, 119–143. doi: 10.1080/10705519509540000

Dobbin, F., and Kalev, A. (2018). Why doesn't diversity training work? The challenge for industry and academia. *Anthropol. Now* 10, 48–55. doi: 10.1080/19428200.2018.1493182

Dover, T. L., Major, B., and Kaiser, C. R. (2016). Members of high-status groups are threatened by pro-diversity organizational messages. *J. Exp. Soc. Psychol.* 62, 58–67. doi: 10.1016/j.jesp.2015.10.006

Dresden, B. E., Dresden, A. Y., Ridge, R. D., and Yamawaki, N. (2018). No girls allowed: women in male-dominated majors experience increased gender harassment and bias. *Psychol. Rep.* 121, 459–474. doi: 10.1177/0033294117730357

Du Plooy, J., and Roodt, G. (2010). Work engagement, burnout and related constructs as predictors of turnover intentions. *SA J. Industr. Psychol.* 36, 910–923. doi: 10.4102/sajip.v36i1.910

Ellemers, N., Kortekaas, P., and Ouwerkerk, J. W. (1999). Self-categorisation, commitment to the group and group self-esteem as related but distinct aspects of social identity. *Eur. J. Soc. Psychol.* 29, 371–389. doi: 10.1002/(SICI)1099-0992(199903/05)29:2/3<371::AID-EJSP932>3.0.CO;2-U

Ellemers, N., Rink, F., Derks, B., and Ryan, M. K. (2012). Women in high places: when and why promoting women into top positions can harm them individually or as a group (and how to prevent this). *Res. Organ. Behav.* 32, 163–187. doi: 10.1016/j.riob.2012.10.003

Ellemers, N., Spears, R., and Doosje, B. (2002). Self and social identity. *Annu. Rev. Psychol.* 53, 161–186. doi: 10.1146/annurev.psych.53.100901.135228

Else-Quest, N. M., Hyde, J. S., and Linn, M. C. (2010). Cross-national patterns of gender differences in mathematics: a meta-analysis. *Psychol. Bull.* 136, 103–127. doi: 10.1037/a0018053

European Commission (2017). *Labour Market and Wage Developments in Europe - Annual Review 2017*. Available at: http://ec.europa.eu/social/main.jsp?catId=738&langId=en&pubId=8040&furtherPubs=yes [accessed August 27, 2018].

European Union (2016). *Does the EU need more STEM graduates?* Available at: https://publications.europa.eu/en/publication-detail/-/publication/60500ed6-cbd5-11e5-a4b5-01aa75ed71a1/language-en doi: 10.1177/0146167217695551

Faniko, K., Ellemers, N., Derks, B., and Lorenzi-Cioldi, F. (2017). Nothing changes, really: why women who break through the glass ceiling end up reinforcing it. *Pers. Soc. Psychol. Bull.* 43, 638–651. doi: 10.1177/0146167217695551

Fouad, N. A., Singh, R., Cappaert, K., Chang, W. H., and Wan, M. (2016). Comparison of women engineers who persist in or depart from engineering. *J. Vocat. Behav.* 92, 79–93. doi: 10.1016/j.jvb.2015.11.002

Frey, F. E., and Tropp, L. R. (2006). Being seen as individuals versus as group members: extending research on metaperception to intergroup contexts. *Pers. Soc. Psychol. Rev.* 10, 265–280. doi: 10.1207/s15327957pspr1003

Galinsky, A. D., Todd, A. R., Homan, A. C., Phillips, K. W., Apfelbaum, E. P., Sasaki, S. J., et al. (2015). Maximizing the gains and minimizing the pains of diversity: a policy perspective. *Perspect. Psychol. Sci.* 10, 742–748. doi: 10.1177/1745691615598513

Geiser, C. (2012). *Data Analysis with Mplus*. New York, NY: Guilford press. doi: 10.1287/mksc.1040.0070

Grewal, R., Cote, J. A., and Baumgartner, H. (2004). Multicollinearity and measurement error in structural equation models: implications for theory testing. *Market. Sci.* 23, 519–529. doi: 10.1287/mksc.1040.0070

Gruber, J., and Morgan, P. (eds) (2005). *In the Company of Men: Male Dominance and Sexual Harassment*. Lebanon, NH: UPNE. doi: 10.1177/106907271452 3088

Gupta, A., Chong, S., and Leong, F. T. (2015). Development and validation of the vocational identity measure. *J. Career Assess.* 23, 79–90. doi: 10.1177/1069072714523088

Hakanen, J. J., Schaufeli, W. B., and Ahola, K. (2008). The job demands-resources model: a three-year cross-lagged study of burnout, depression, commitment, and work engagement. *Work Stress* 22, 224–241. doi: 10.1080/02678370802379432

Hakim, C. (2000). *Work-Lifestyle Choices in the 21st Century. Preference Theory*. New York, NY: Oxford University Press. doi: 10.1177/194855061877 2582

Hall, W., Schmader, T., Aday, A., and Croft, E. (2018a). Decoding the dynamics of social identity threat in the workplace: a within-person analysis of women's and men's interactions in STEM. *Soc. Psychol. Pers. Sci.* 1–11. doi: 10.1177/1948550618772582

Hall, W., Schmader, T., Aday, A., Inness, M., and Croft, E. (2018b). Climate control: the relationship between social identity threat and cues to an identity-safe culture. *J. Pers. Soc. Psychol.* 115, 446–467. doi: 10.1037/pspi0000137

Hall, W. M., Schmader, T., and Croft, E. (2015). Engineering exchanges: daily social identity threat predicts burnout among female engineers. *Soc. Psychol. Pers. Sci.* 6, 528–534. doi: 10.1177/1948550615572637

Haslam, S. A., Van Knippenberg, D., Platow, M. J., and Ellemers, N. (2014). *Social Identity at Work: Developing Theory for Organizational Practice*. London: Psychology Press. doi: 10.4324/9781315784137

Hill, C., Corbett, C., and St Rose, A. (2010). *Why so Few? Women in Science, Technology, Engineering, and Mathematics*. Washington, DC: American Association of University Women.

Holleran, S. E., Whitehead, J., Schmader, T., and Mehl, M. R. (2011). Talking shop and shooting the breeze: a study of workplace conversation and job disengagement among STEM faculty. *Soc. Psychol. Personal. Sci.* 2, 65–71. doi: 10.1177/1948550610379921

Hu, L. T., and Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: conventional criteria versus new alternatives. *Struct. Equ. Model.* 6, 1–55. doi: 10.1080/10705519909540118

Inzlicht, M., and Ben-Zeev, T. (2000). A threatening intellectual environment: why females are susceptible to experiencing problem-solving deficits in the presence of males. *Psychol. Sci.* 11, 365–371. doi: 10.1111/1467-9280.00272

Inzlicht, M., and Kang, S. K. (2010). Stereotype threat spillover: how coping with threats to social identity affects aggression, eating, decision making, and attention. *J. Pers. Soc. Psychol.* 99, 467–481. doi: 10.1037/a0018951

Kalokerinos, E. K., von Hippel, C., and Zacher, H. (2014). Is stereotype threat a useful construct for organizational psychology research and practice? *Industr. Organ. Psychol.* 7, 381–402. doi: 10.1111/iops.12167

Kang, S. K., and Inzlicht, M. (2014). Stereotype threat spillover: why stereotype threat is more useful for organizations than it seems. *Industr. Organ. Psychol.* 7, 452–456. doi: 10.1111/iops.12179

Kay, K., and Shipman, C. (2014). The confidence gap. *Atlantic* 14, 1–18.

Kline, R. B. (2015). *Principles and Practice of Structural Equation Modeling*. New York, NY: Guilford press.

Latrofa, M., Vaes, J., Pastore, M., and Cadinu, M. (2009). "United we stand, divided we fall"! The protective function of self-stereotyping for stigmatised members' psychological well-being. *Appl. Psychol.* 58, 84–104. doi: 10.1111/j.1464-0597.2008.00383.x

Leaper, C., and Starr, C. R. (2018). Helping and hindering undergraduate women's STEM motivation: experiences With STEM encouragement, STEM-related gender bias, and sexual harassment. *Psychol. Women Q.* 1–19. doi: 10.1177/0361684318806302

Lent, R. W., Brown, S. D., and Hackett, G. (1994). Toward a unifying social cognitive theory of career and academic interest, choice, and performance. *J. Vocat. Behav.* 45, 79–122. doi: 10.1006/jvbe.1994.1027

Lent, R. W., Brown, S. D., Schmidt, J., Brenner, B., Lyons, H., and Treistman, D. (2003). Relation of contextual supports and barriers to choice behavior in engineering majors: test of alternative social cognitive models. *J. Counsel. Psychol.* 50, 458–465. doi: 10.1037/0022-0167.50.4.458

Lent, R. W., Brown, S. D., Sheu, H. B., Schmidt, J., Brenner, B. R., Gloster, C. S., et al. (2005). Social cognitive predictors of academic interests and goals in engineering: utility for women and students at historically black universities. *J. Counsel. Psychol.* 52, 84–92. doi: 10.1037/0022-0167.52.1.84

Leslie, S. J., Cimpian, A., Meyer, M., and Freeland, E. (2015). Expectations of brilliance underlie gender distributions across academic disciplines. *Science* 347, 262–265. doi: 10.1126/science.1261375

Logel, C., Walton, G. M., Spencer, S. J., Iserman, E. C., von Hippel, W., and Bell, A. E. (2009). Interacting with sexist men triggers social identity threat among female engineers. *J. Pers. Soc. Psychol.* 96, 1089–1103. doi: 10.1037/a0015703

London, B., Rosenthal, L., and Gonzalez, A. (2011). Assessing the role of gender rejection sensitivity, identity, and support on the academic engagement of women in nontraditional fields using experience sampling methods. *J. Soc. Issues* 67, 510–530. doi: 10.1111/j.1540-4560.2011.01712.x

MacKinnon, D. P., Lockwood, C. M., and Williams, J. (2004). Confidence limits for the indirect effect: distribution of the product and resampling methods. *Multivar. Behav. Res.* 39, 99–128. doi: 10.1207/s15327906mbr3901_4

Major, B., Quinton, W. J., and Schmader, T. (2003). Attributions to discrimination and self-esteem: impact of group identification and situational ambiguity. *J. Exp. Soc. Psychol.* 39, 220–231. doi: 10.1016/S0022-1031(02)00547-4

Martin, A. E., and Phillips, K. W. (2017). What "blindness" to gender differences helps women see and do: implications for confidence, agency, and action in male-dominated environments. *Organ. Behav. Hum. Decis. Process.* 142, 28–44. doi: 10.1016/j.obhdp.2017.07.004

Miller, D. I., Eagly, A. H., and Linn, M. C. (2015). Women's representation in science predicts national gender-science stereotypes: evidence from 66 nations. *J. Educ. Psychol.* 107, 631–644. doi: 10.1037/edu0000005

Monitor Techniekpact (2016). *Monitor facts & figures bètatechniek 2016*. Available at: https://www.techniekpact.nl/cdi/files/825b3dea7053748e05edf9b6ef7f7fe7e5f52cdc.pdf [accessed August 27, 2018].

Morgan, J. (2014). *The Future of Work: Attract New Talent, Build Better Leaders, and Create a Competitive Organization*. Hoboken, NJ: John Wiley & Sons, Inc.

Murphy, M. C., Steele, C. M., and Gross, J. J. (2007). Signaling threat: how situational cues affect women in math, science, and engineering settings. *Psychol. Sci.* 18, 879–885. doi: 10.1111/j.1467-9280.2007.01995.x

Muthén, L. K., and Muthén, B. O. (1998/2012). *Mplus User's Guide*, 7th Edn. Los Angeles, CA: Muthén & Muthén.

Nosek, B. A., Smyth, F. L., Sriram, N., Lindner, N. M., Devos, T., Ayala, A., et al. (2009). National differences in gender–science stereotypes predict national sex differences in science and math achievement. *Proc. Natl. Acad. Sci. U.S.A.* 106, 10593–10597. doi: 10.1073/pnas.0809921106

Nunnally, J. C., and Bernstein, I. H. (1967). *Psychometric Theory, 226*. New York, NY: McGraw-Hill.

Otten, S., and Jansen, W. S. (2014). "Predictors and consequences of exclusion and inclusion at the culturally diverse workplace," in *Towards Inclusive Organizations*, eds S. Otten, K. van der Zee, and M. B. Brewer (London: Psychology Press), 75–94.

Peters, K., Ryan, M. K., and Haslam, S. A. (2013). "Women's occupational motivation: the impact of being a woman in a man's world," in *Handbook of Research on Promoting Women's Careers*, eds S. Vinnicombe, R. J. Burke, S. Blake-Beard, and L. L. Moore (Cheltenham: Edward Elgar Publishing), 162–177.

Peters, K., Ryan, M. K., and Haslam, S. A. (2014). Marines, medics, and machismo: lack of fit with masculine occupational stereotypes discourages men's participation. *Br. J. Psychol.* 106, 635–655. doi: 10.1111/bjop.12106

Pietri, E. S., Hennes, E. P., Dovidio, J. F., Brescoll, V. L., Bailey, A. H., Moss-Racusin, C. A., et al. (2018). Addressing unintended consequences of gender diversity interventions on women's sense of belonging in STEM. *Sex Roles* 1–21. doi: 10.1007/s11199-018-0952-2

Plantenga, J., and Remery, C. (2010). *Flexible Working Time Arrangements and Gender Equality: A Comparative Review of 30 European Countries*. Luxembourg: Publications Office of the European Union. Available at: https://publications.europa.eu/en/publication-detail/-/publication/13a65488-9cd7-46f5-b9f4-d60e3dd09592/language-en [accessed January 25, 2019].

Podsakoff, P. M., MacKenzie, S. B., Lee, J. Y., and Podsakoff, N. P. (2003). Common method biases in behavioral research: a critical review of the literature and recommended remedies. *J. Appl. Psychol.* 88, 879–903. doi: 10.1037/0021-9010.88.5.879

Ryu, E., and Cheong, J. (2017). Comparing indirect effects in difference groups in single-group and multi-group structural equation models. *Front. Psychol.* 8:747. doi: 10.3389/fpsyg.2017.00747

Sackett, P. R. (2003). Stereotype threat in applied selection settings: a commentary. *Hum. Perform.* 16, 295–309. doi: 10.1207/S15327043HUP1603_6

Sackett, P. R., and Ryan, A. M. (2012). "Concerns about generalizing stereotype threat research findings to operational high-stakes testing," in *Stereotype threat: Theory, Process, and Application*, eds M. Inzlicht and T. Schmader (New York, NY: Oxford University Press), 249–263.

Sandberg, S. (2013). *Lean in: Women, Work, and the Will to Lead*. New York, NY: Random House.

Savickas, M. L., and Porfeli, E. J. (2011). Revision of the career maturity inventory: the adaptability form. *J. Career Assess.* 19, 355–374. doi: 10.1177/1069072711409342

Schaufeli, W. B., Bakker, A. B., and Salanova, M. (2006). The measurement of work engagement with a short questionnaire: a cross-national study. *Educ. Psychol. Measure.* 66, 701–716. doi: 10.1177/0013164405282471

Schaufeli, W. B., Salanova, M., González-Romá, V., and Bakker, A. B. (2002). The measurement of engagement and burnout: a two sample confirmatory factor analytic approach. *J. Happ. Stud.* 3, 71–92. doi: 10.1023/A:1015630930326

Schmader, T. (2002). Gender identification moderates stereotype threat effects on women's math performance. *J. Exp. Soc. Psychol.* 38, 194–201. doi: 10.1006/jesp.2001.1500

Sellers, R. M., Caldwell, C. H., Schmeelk-Cone, K. H., and Zimmerman, M. A. (2003). Racial identity, racial discrimination, perceived stress, and psychological distress among African American young adults. *J. Health Soc. Behav.* 44, 302–317. doi: 10.2307/1519781

Shrout, P. E., and Bolger, N. (2002). Mediation in experimental and non-experimental studies: new procedures and recommendations. *Psychol. Methods* 7, 422–445. doi: 10.1037/1082-989X.7.4.422

Siemsen, E., Roth, A., and Oliveira, P. (2010). Common method bias in regression models with linear, quadratic, and interaction effects. *Organ. Res. Methods* 13, 456–476. doi: 10.1177/1094428109351241

Singh, R., Fouad, N. A., Fitzpatrick, M. E., Liu, J. P., Cappaert, K. J., and Figuereido, C. (2013). Stemming the tide: predicting women engineers' intentions to leave. *J. Vocat. Behav.* 83, 281–294. doi: 10.1016/j.jvb.2013.05.007

Statistics Netherlands (2016). *De Arbeidsmarkt in Cijfers 2016*. Available at: https://www.cbs.nl/-/media/_pdf/2017/19/de-arbeidsmarkt-in-cijfers-2016.pdf [accessed August 27, 2018].

Storage, D., Horne, Z., Cimpian, A., and Leslie, S. J. (2016). The frequency of "brilliant" and "genius" in teaching evaluations predicts the representation of women and African Americans across fields. *PLoS One* 11:e0150194. doi: 10.1371/journal.pone.0150194

Tajfel, H., and Turner, J. (1986). *The Social Identity Theory of Intergroup Behaviour. u: Worchel S. i Austin WG (ur.) Psychology of Intergroup Relations*. Chicago: Nelson Hall.

Tajfel, H., and Turner, J. C. (1979). "An integrative theory of intergroup conflict," in *The Social Psychology of Intergroup Relations*, eds S. Worchel and W. G. Austin (Montery, CA: Brooks/Cole), 33–47.

Thoman, D. B., and Sansone, C. (2016). Gender bias triggers diverging science interests between women and men: the role of activity interest appraisals. *Motiv. Emot.* 40, 464–477. doi: 10.1007/s1103

Thoman, D. B., Smith, J. L., Brown, E. R., Chase, J., and Lee, J. Y. K. (2013). Beyond performance: a motivational experiences model of stereotype threat. *Educ. Psychol. Rev.* 25, 211–243. doi: 10.1007/s10648-013-9219-1

Turner, J. C., Hogg, M. A., Oakes, P. J., Reicher, S. D., and Wetherell, M. S. (1987). *Rediscovering the Social Group: A Self-Categorization Theory*. Cambridge, MA: Basil Blackwell.

Van Laar, C., Derks, B., Ellemers, N., and Bleeker, D. (2010). Valuing social identity: consequences for motivation and performance in low-status groups. *J. Soc. Issues* 66, 602–617. doi: 10.1111/j.1540-4560.2010.01665.x

van Veelen, R., Derks, B., and Endedijk, M. D. (2018). "Why female STEM students opt out: gender differences in professional identity formation explain STEM students' future career choices," in *Proceedings Conference presentation at small group meeting: "Context, Identity and Choice: Understanding the Constraints on Women's Career Decisions"*, (London: University Women's Club).

Van Vianen, A. E. M., and Fischer, A. H. (2002). Illuminating the glass ceiling: the role of organizational culture preferences. *J. Occup. Organ. Psychol.* 75, 315–337. doi: 10.1348/096317902320369730

Van Voorhis, C. W., and Morgan, B. L. (2007). Understanding power and rules of thumb for determining sample sizes. *Tutor. Quant. Methods Psychol.* 3, 43–50. doi: 10.20982/tqmp.03.2.p043

Veldman, J., Meeussen, L., Van Laar, C., and Phalet, K. (2017). Women (do not) belong here: gender-work identity conflict among female police officers. *Front. Psychol.* 8:130. doi: 10.3389/fpsyg.2017.00130

Von Hippel, C., Issa, M., Ma, R., and Stokes, A. (2011). Stereotype threat: antecedents and consequences for working women. *Eur. J. Soc. Psychol.* 41, 151–161. doi: 10.1002/ejsp.749

Walton, G. M., and Cohen, G. L. (2007). A question of belonging: race, social fit, and achievement. *J. Pers. Soc. Psychol.* 92, 82–96. doi: 10.1037/0022-3514.92.1.82

Walton, G. M., Murphy, M. C., and Ryan, A. M. (2015). Stereotype threat in organizations: implications for equity and performance. *Annu. Rev. Organ. Psychol. Organ. Behav.* 2, 523–550. doi: 10.1146/annurev-orgpsych-032414-111322

Wilder, D. A. (1984). Perceptions of belief homogeneity and similarity following social categorization. *Br. J. Soc. Psychol.* 23, 323–333. doi: 10.1111/j.2044-8309.1984.tb00648.x

Conflict of Interest Statement: The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

frontiers in Psychology

SYSTEMATIC REVIEW
published: 27 February 2019
doi: 10.3389/fpsyg.2019.00282

Understanding Diversity Ideologies From the Target's Perspective: A Review and Future Directions

Seval Gündemir[1]*, *Ashley E. Martin*[2] *and Astrid C. Homan*[1]

[1] Work and Organizational Psychology, University of Amsterdam, Amsterdam, Netherlands, [2] Stanford Graduate School of Business, Stanford University, Stanford, CA, United States

We present a review of the diversity ideologies literature from the target's perspective. In particular, we focus on how diversity ideologies—beliefs or organizational practices with regards to how to approach diversity—affect racial minorities' and women's self-perceptions and experiences at work. This review suggests that a diversity aware ideology (i.e., multiculturalism) is more beneficial than a diversity blind ideology (i.e., colorblindness) for racial-ethnic minorities (e.g., better performance outcomes; more psychological engagement, inclusion, and workplace satisfaction; more positive leadership self-perceptions; and reduced perceptions of bias and turnover intentions). In contrast, for women, gender-blindness is associated with more positive outcomes than gender awareness (e.g., enhanced self-confidence, pro-active behaviors and leadership emergence). Importantly, multiculturalism and gender-blindness can both produce negative side effects for racial minorities and women, respectively, which highlights the importance of developing approaches to address the shortcomings of these conventional ideologies. We discuss the implications and offer recommendations for future research.

Keywords: diversity, diversity management, organizational psychology, minority–majority, workplace equality

OPEN ACCESS

Edited by:
Teri Kirby,
University of Exeter, United Kingdom

Reviewed by:
Oriane Georgeac,
London Business School, United Kingdom
Leigh Wilton,
Skidmore College, United States

***Correspondence:**
Seval Gündemir
s.gundemir@uva.nl

Specialty section:
This article was submitted to Organizational Psychology, a section of the journal Frontiers in Psychology

Received: *24 August 2018*
Accepted: *29 January 2019*
Published: *27 February 2019*

Citation:
Gündemir S, Martin AE and Homan AC (2019) Understanding Diversity Ideologies From the Target's Perspective: A Review and Future Directions. Front. Psychol. 10:282. doi: 10.3389/fpsyg.2019.00282

Over the last decades, racial and gender diversity in organizations has strongly increased. Enhanced diversity has the potential to give rise to positive outcomes in organizations such as creativity and effectiveness in workgroups (Homan et al., 2007; Page, 2007; Barta et al., 2012). On the flipside, diversity also has the potential to increase negative organizational outcomes such as conflict and miscommunication (Pelled et al., 1999; Van Knippenberg et al., 2004). As a consequence of diversity's potential to be both beneficial and harmful, many organizations have sought to understand how to leverage the upsides and manage the downsides (Galinsky et al., 2015). A key challenge and opportunity in this process is understanding the psychology of traditionally underrepresented groups such as women and racial-ethnic minorities in response to diversity initiatives.

In attempts to effectively manage diversity, many companies utilize structural and institutional initiatives, such as affirmative action, but also diversity training, and official diversity policies (Konrad and Linnehan, 1995; Kelly and Dobbin, 1998; Ely and Thomas, 2001; Jackson et al., 2003; Kalev et al., 2006; Leslie et al., 2014; Hideg and Ferris, 2016). Such initiatives can increase the representation of women and racial-ethnic minority employees in the short-term; however, over the long-term, their effectiveness has been shown to be limited. Indeed, racial minorities and women remain underrepresented in the upper echelons of organizational power (Catalyst, 2016; Fortune, 2017). Further, although this research examines representational outcomes, these interventions are often targeted at those in power (managers; e.g., affirmative action, policies) or majority group

members (Whites, men; e.g., bias). Much less work has focused on the psychological experience of underrepresented groups in reaction to these policies. Indeed, past work has shown that though certain initiatives (such as affirmative action) can have a positive effect of representation (Crosby et al., 2006; Kalev et al., 2006), the psychological experience on those groups can often be negative, whereby they become targets of prejudice (Leslie et al., 2014; Hideg and Ferris, 2016) and question their efficacy at work (Heilman et al., 1987). Thus, the experience of underrepresented groups may be very different from their representational outcomes.

In addition to diversity initiatives targeting organizational structures, organizations can also utilize complementary approaches "to shape the cultural context of the workplace" (Apfelbaum et al., 2016, p. 547). Given the potential downsides of structural initiatives and significance of examining the experiences of underrepresented groups in reaction to diversity initiatives, understanding these complementary approaches and their impact on racial minorities' and women's attitudes, cognitions and behavior remains important (Joshi, 2014; Apfelbaum et al., 2016). One of the most prominent among these are *diversity ideologies* (Wolsko et al., 2000; Apfelbaum et al., 2016). Diversity ideologies can refer to organizational practices that are often explicitly summarized in a diversity mission statement and communicate the organizational approach to and norms around diversity. In addition, diversity ideologies can also refer to employees' own beliefs around how to approach group differences in diverse settings (Martin and Phillips, 2017). Thus, ideologies can be contextual or individual (or both).

In this review, we examine diversity ideologies, which have been shown to promote diversity and inclusion in organizations (Wolsko et al., 2000; Rattan and Ambady, 2013; Sasaki and Vorauer, 2013; Plaut et al., 2018), and their effects on racial minorities' and women's experiences in organizations. In doing so, we focus our analysis on two levels: ideologies as contextual or organizational level variables (i.e., imposed by the organization or those in power) and as individual level variables (i.e., beliefs held by individuals). We review these two levels, as they are mutually reinforcing, where organizational beliefs can be adopted by individual members (Bourguignon, 2017; Martin and Phillips, 2017), and individual beliefs can shape organizational cultures (Schein, 1992)[1]. Our review of research within organizational settings elucidates why minorities or women respond differently to different ideologies, and have unique outcomes in similar ideological contexts. Moreover, although our main goal is illuminating workplace behavior and outcomes, we also discuss research in adjacent areas (e.g., stereotyping, prejudice, interaction) that offers complementary insights relevant for organizations.

The current contribution reviews and synthesizes existing literature in a systematic way to highlight the role of diversity ideologies on traditionally underrepresented groups' in particular, racial minorities and women) self-perceptions, experiences and behaviors in diverse work settings. Doing so makes at least two broad contributions. First, in previous work, diversity ideologies have gotten ample attention in many areas of research, ranging from educational to government policy. Adding a comprehensive review on their role in the *organizational context* is valuable, as it not only theoretically clarifies the types of organizational ideologies that benefit the very groups they aim to help, but also gives practical advice for organizations looking to understand the messages they use to reach that goal. That is, identifying conceptual confounds and ambiguities around ideological messages is important to understand how to effectively implement them in organizations. For organizations looking to increase and improve the dynamics around diversity, this can then help increase the status and resources amongst underrepresented groups (an important precursor to societal equality). Second, by combining ideologies literature focusing on both racial minorities' and women's perspective, this review integrates two lines on inquiry that have primarily developed in isolation. As such, this work allows us to uncover similarities and differences of racial minorities' and women's responses to different ideologies. Below, we first define the dominant ideologies in the literature. Our initial discussion of (variations in) different ideologies focuses primarily on the context of race-ethnicity as there is more information available in this domain, and thus, offers the richest information. Here, we also pay some attention to the conceptualization of gender ideologies, which can be seen as a continuation of the race-ethnicity literature. We zoom into ideologies' impact on racial minorities, followed by their impact on women' experiences. In our integrative discussion we identify patterns and shortcomings in the literature and propose key future directions.

DIVERSITY IDEOLOGIES: BLINDNESS VS. AWARENESS

As a consequence of continuously diversifying society, academics have sought to find ways to better understand intergroup relations. These attempts have traditionally focused on stereotyping, discrimination as well as representational concerns around traditionally underrepresented groups (Fiske et al., 2002; Crosby et al., 2006; Kalev et al., 2006). An alternative to these traditional foci is to illuminate the role of organizational practices or individual beliefs around how to approach diversity in the quality of intergroup relations. These practices or beliefs, diversity ideologies, are highly consequential and offer a complementary way of uncovering the dynamics around and outcomes of intergroup contact (Wolsko et al., 2000; Rattan and Ambady, 2013).

Most research on diversity ideologies has been done in the context of race. Existing work identifies two broad types of diversity ideologies, which differ in the extent to which they recognize or ignore differences between demographic groups. Though they differ in their approach, the two dominant ideologies share the same ultimate goal: contributing to an environment in which diverse groups of people can

[1]Please note that we review prior work that has separately studied ideologies as contextual vs. personal variables. In the general discussion, we present recommendations for integrating these different levels of analysis in single studies in the future.

harmoniously live and work together (e.g., Wolsko et al., 2000). One ideology aims to do that by ignoring and de-emphasizing differences between groups, while the other takes the opposite approach, by being open to and recognizing differences.

One type of ideology, the so-called *colorblindness* (i.e., blindness) approach, focuses on de-emphasizing differences between social groups (Wolsko et al., 2000; Apfelbaum et al., 2012). The underlying assumption of this ideology is that categorizing individuals by their social group leads to prejudice and conflict. Thus, ignoring social categories should reduce these negative consequences. The colorblind ideology is not without its critics. Opponents of colorblindness suggest that suppressing social categories is not possible, as humans have a natural tendency to categorize their environment to be able to process the large amount of information (Rosch and Lloyd, 1978). Moreover, research shows that demographic group information, like race and sex, is detected in the brain within milliseconds (Ito and Urland, 2003). Opponents propose that colorblindness is not only impossible but also undesirable because it ignores the unique cultural identities and traditions of racial minorities and assimilates them into a dominant power structure (Fryberg and Stephens, 2010). Further, diversity has the potential to offer positive contributions to companies and the society as a whole (Van Knippenberg et al., 2004). As such, opponents of colorblindness argue that differences between demographic groups should not be ignored but recognized and celebrated.

The idea that diversity should be emphasized rather than ignored is central to the second prominent ideology in the literature, *multiculturalism* (i.e., awareness). In this view, differences between social groups should not only be recognized and emphasized, but also valued and celebrated. Proponents of multiculturalism argue that categorization does not have to be harmful (Park and Judd, 2005; Costa-Lopes et al., 2014). When differences between demographic groups are perceived in a positive manner (e.g., as sources to learn from), they do not evoke prejudice. Moreover, demographic group differences can be meaningful and important to the members of these groups; ignoring or undervaluing of which would do these groups a disservice. However, similarly to colorblindness, this view also has its critics, who argue emphasizing differences between groups can exacerbate stereotypes, create divisions between groups, delegitimize racial inequity claims, and promote racial segregation (Verkuyten, 2005; Hahn et al., 2010, 2015; Gündemir and Galinsky, 2018).

Like diversity ideologies focusing on race-ethnicity, gender ideologies also differ in the extent to which they recognize vs. overlook intergroup differences. On the one hand, there is *gender-blindness*. Analogous to colorblindness, this view proposes that the differences between men and women are neither meaningful nor consequential and thus they should be ignored and men and women should be treated as individuals (Koenig and Richeson, 2010; Martin and Phillips, 2017). On the other hand, there is *gender awareness*. Analogous to multiculturalism, gender awareness proposes that differences between men and women should be recognized and celebrated.

CONCEPTUALIZING DIFFERENT FORMS OF DIVERSITY IDEOLOGIES

While many agree that the dichotomy between de-emphasizing vs. acknowledging and celebrating social group differences is common across studies on diversity ideologies (Hahn et al., 2015), it is noteworthy that both ideologies are complex and can take different forms. Recent work has elaborated on the importance of *how* these ideologies are conceptualized and measured. With regards to the blindness ideology, scholars have depicted this approach in multiple ways, depending on different intentions toward the outgroup (e.g., assimilation vs. inclusion; Hahn et al., 2015) and differences in the focus of attention (e.g., sameness vs. de-emphasis of subgroup differences in favor of individual uniqueness; Rosenthal and Levy, 2010).

For example, regarding intentions toward the outgroup, Hahn et al. (2015) note that while conceptions of blindness converge in their de-emphasis of difference, an assimilationist approach entails that such "sameness" should be defined by the superordinate group's norms (e.g., "organizations should encourage racial minorities to adapt to mainstream ways"; Plaut et al., 2009), whereas an inclusion-focused colorblind approach de-emphasizes difference make minority groups feel included (e.g., "you can find commonalities with anyone no matter their background"; Hahn et al., 2015).

Further, with regards to which differences are the focus of attention, some blindness ideologies focus on recognizing sameness whereas others focus on individual differences. That is, colorblindness has been portrayed as a *value-in-homogeneity* approach, in which differences between groups are suppressed in favor of an overarching group membership (Plaut et al., 2011; Holoien and Shelton, 2012; Todd and Galinsky, 2012; Gaertner and Dovidio, 2014). However, colorblindness has also been depicted as a *value-in-individual differences* approach, focusing on ignoring any type of group membership (e.g., a subgroup or an overarching one) in favor of individual qualities that make people unique (Wilder, 1984; Ryan et al., 2007; Verkuyten, 2010; Peery, 2011).

Regarding these different conceptualizations of colorblindness, scholars have debated whether these different conceptualizations represent subtypes of the colorblind ideology or separate ideological approaches (Rosenthal and Levy, 2010). Some work has labeled assimilation as a separate ideology from colorblindness, as unlike the benevolent nature of colorblindness, assimilation's sameness-focus perpetuates the dominant group's norms (e.g., Hahn et al., 2015). Others have suggested that value-in-homogeneity and value-in-individual differences are subtypes of colorblindness, as both variants are characterized by a lack of recognition of subgroup differences, (e.g., Dovidio et al., 2010; Gündemir et al., 2017a). These latter scholars also recognized that while the psychological consequences of the salient subtypes may differ, many common manipulations and measures of colorblindness integrate elements from both (Wolsko et al., 2000; Ryan et al., 2007), making it unclear which element is causing or creating the effects. Finally, most recently, it has been suggested that colorblindness can also be

interpreted as *value-in-equality,* which focuses on a meritocratic perspective of equivalent and fair treatment of different social groups (Apfelbaum et al., 2016).

Similar to the multifaceted nature of colorblindness, conceptualizations of the awareness ideology have also differentiated between the intentionality and focus of an ideology that highlights group differences. For example, some work differentiates between the positive version of *multiculturalism* (recognition and preservation of category distinctions to build a strong, diverse community) and *negative* version of segregation (the separation of groups, such that they occupy different spheres). Further, multiculturalism can be interpreted as the celebration of cultural differences (Wolsko et al., 2000; Government of Canada, 2018), or the inclusion of different cultural backgrounds into an environment (Markus et al., 2000; Apfelbaum et al., 2016), as well as respect for cultural differences and identities (Markus et al., 2000; Purdie-Vaughns and Walton, 2011). In these latter conceptualizations, it is unclear whether the benefits of multiculturalism are due to the celebration, inclusion, or respect of differences, and future research is needed to better disentangle these effects.

Similar to the conceptualization challenges in race-ethnicity research, the yet limited amount of work on gender ideologies is also confronted with conceptualization issues. Analogous to colorblindness, measures of gender-blindness often include both a *value-in-individual differences*, focusing on individual differences between men and women, and a *value-in-homogeneity*, focusing on emphasizing what is common among men and women (e.g., Koenig and Richeson, 2010; Martin and Phillips, 2017). Unlike the clearer conceptual distinctions made in research on race ideologies, empirical research in this domain has rarely distinguished between these components. While these conceptualizations represent hierarchy attenuating ideologies, some conceptualizations are hierarchy enhancing, such as a gender-blind approach which focuses on women adapting to men, which is consistent with assimilation (Hahn et al., 2015). Similarly, some work argues that some forms of gender-awareness are akin to segregation, which aims to keep men and women in separate domains (e.g., jobs, schools; Hahn et al., 2015).

In sum, although some work distinguishes between different forms of colorblindness and multiculturalism (e.g., Verkuyten, 2010; Levin et al., 2012; Hahn et al., 2015), much of the existing research operationalizes colorblindness and multiculturalism in ways that integrates elements from each variant (Wolsko et al., 2000; Gutiérrez and Unzueta, 2010; Morrison and Chung, 2011). Similarly, conceptualizations of gender ideologies often involve elements from different variants. As such, when evaluating the effectiveness of colorblindness and multiculturalism or gender-blindness and gender awareness, it can be hard to determine which elements are responsible for the observed effects. It is important to note that conceptualization of the blindness ideology is typically more variable than that of the awareness ideology, hence, we pay more attention to specifying the type of blindness in our discussion of empirical findings below.

Below, when the reviewed work specifies the exact conceptualization of color/gender-blindness, we make note of which conceptualization was used; otherwise, when left unspecified or if multiple elements occur simultaneously, we use the overarching term "colorblindness" or "gender-blindness" for race and gender ideologies, respectively.

HOW DO RACIAL MINORITIES RESPOND TO DIVERSITY IDEOLOGIES?

To understand minorities' responses to diversity ideologies, Dovidio and colleagues offer a functional perspective. In this perspective, the responses of minorities to different ideologies are thought to be an outcome of the extent to which each ideology addresses their group based needs (Dovidio et al., 2007, 2010). The salient ideology gives the members of different groups signals about how comfortable they can feel within, and how much they can trust, a given environment (Purdie-Vaughns et al., 2008). By ignoring—and therefore seemingly not valuing group differences—a blindness ideology overlooks group-based challenges minority groups may experience and allows the majority group to maintain their dominant position. An awareness ideology, however, acknowledges the minority group's need for group-based recognition and appreciation and can help change the status quo (by, for example, making conversations about group based disparities less a taboo, cf., Schofield, 2001, Saguy et al., 2009), enhancing the position of the minority group. As such, an awareness ideology (i.e., multiculturalism), could be more functional for the minority group and this may be especially true for those who strongly identify with their group (Verkuyten, 2005, 2009). Below, we review empirical research concerning the link between diversity ideologies and responses of racial minorities.

Empirical Work on Racial Minorities' Responses to Diversity Ideologies

Research on the impact of diversity ideologies on racial minorities focuses broadly on three areas: (1) minority group members' preference for different ideologies, (2) the effects of dominant group members' ideology on minorities' responses and experiences, and (3) the role of ideologies at the organizational level on minorities' perceptions and behavior. We discuss relevant findings next.

In line with the previous arguments, empirical work demonstrates that the members of minority groups have a strong preference for multiculturalism (Markus et al., 2000; Arends-Tóth and Van De Vijver, 2003; Wolsko et al., 2006; Ryan et al., 2007, 2010). Consistent with the functional perspective, a preference for multiculturalism likely stems from minority groups' desire for their group-based needs to be recognized. Supporting this idea, a preference for multiculturalism is not solely unique to racial minorities, it applies to *any* group that holds minority, subordinate status within a given environment. For example, White students at predominantly black colleges, where they are the representational minority and hold a lower status position, endorse diversity aware policies in these institutions. That is, they prefer that their group be recognized and their needs be addressed. However, these same students endorse diversity blind, assimilationist policies at the national level, where their group is the representational majority and holds

the higher power and status position, as their group is already recognized and needs already addressed (Hehman et al., 2012). This finding suggests that as the functionality of an ideology shifts, so do groups' preferences.

Additionally, research has shown that, by creating a specific climate, the diversity ideology endorsed by the majority group can have important consequences for minorities' perceptions and experiences. When the majority group endorses multiculturalism (rather than colorblindness), racial minorities tend to perceive less bias, and experience more engagement and inclusion. For example, Plaut et al. (2009) studied minorities' psychological engagement at work (i.e., the extent to which employees value work success and organizational membership) in response to their majority group co-workers' ideology. This work showed that to the extent that the majority group employees endorse multiculturalism in a unit, minorities report higher psychological engagement. The majority group's endorsement of colorblindness (measured as assimilation), is associated with reduced psychological engagement among minorities. This positive effect of multiculturalism on minorities' engagement is explained by perceptions of bias. That is, minorities experience less racial bias when the climate is characterized by multiculturalism, which in turn boosts their psychological engagement.

This result is consistent with experimental research, which showed that racial minorities experience more engagement on a cognitive task when interacting with majority group counterparts who are primed with multiculturalism rather than colorblindness (Holoien and Shelton, 2012). This greater engagement exhibited by racial minorities is explained by perceptions of lesser bias from their majority group partners (Holoien and Shelton, 2012). Similarly, in workgroups, minority employees feel more accepted to the extent that leaders endorse multiculturalism (vs. colorblindness), which results in more effective workgroup functioning (Meeussen et al., 2014). Finally, Vorauer et al. (2009) found that compared to a colorblind ideology, the majority group (in this case White Canadians) primed with a multicultural ideology show more engagement in minorities (in this case Aboriginal Canadians), which leads minorities to have fewer evaluative concerns and experience less anxiety. With regards to racial minorities' performance in organizations, research suggests that compared to colorblindness, an awareness (i.e., multicultural) ideology can improve the performance of racial minorities on cognitive tasks (Wilton et al., 2015; Apfelbaum et al., 2016).

Not only does multiculturalism seem to benefit racial minorities when Whites adopt this ideology, but similarly, when the (organizational) context is characterized by multiculturalism (through, for instance, diversity mission statements), minorities also experience positive outcomes. For example, minorities' perceptions of organizational multiculturalism can boost their workplace satisfaction, by enhancing their sense of inclusion within an organization (Jansen et al., 2016). Further, multiculturalism can reduce minorities' turnover intentions, especially when they strongly identify with their cultural-ethnic group (Phouthonephackdy, 2016). Additionally, research in Western Europe showed that diversity aware environments can enhance religious minorities' positive perceptions of education and work (Van Laar et al., 2013). Moreover, Purdie-Vaughns and Eibach (2008) found that when African American professionals are attuned to minority representation, workplaces that espouse a colorblind, value-in-homogeneity message leads them to perceive threatening identity contingencies and to distrust of their organizational environment.

One study has extended these findings to the context of leadership. Because minorities remain underrepresented in higher leadership positions, it is important for organizations to find ways to stimulate minority leadership (e.g., Ospina and Foldy, 2009; Gündemir et al., 2014). Some scholars wondered whether organizational diversity ideologies can stimulate minority leadership by boosting their leadership self-perceptions (Gündemir et al., 2017a). This work showed that, by communicating an open diversity climate, multiculturalism can indeed help minorities to cultivate more positive leadership self-perceptions. When organizational diversity mission statements communicate multiculturalism, minorities report increased leadership self-efficacy (i.e., the extent to which they think they are able to fulfill leadership tasks successfully) and stronger leadership aspirations (i.e., intentions to apply for leadership roles) than when the value-in-homogeneity variant of colorblindness is salient. Interestingly, this work did not find a difference between multiculturalism and the value-in-individual differences variant of colorblindness. The authors suggested that the value-in-individual differences variant of colorblindness' acknowledgment of differences, albeit at the inter-individual level, may -to some extent- address minorities' need for recognition of differences and thus be more "functional" for them than the value-in-homogeneity variant.

Together, empirical work suggests that minorities respond more positively to (organizational) contexts characterized by multiculturalism (rather than those characterized by blindness) and these contexts appear to improve task engagement amongst minority groups.

Additional Considerations Around Minority Responses to Diversity Ideologies

It should be noted that there are several important contextual factors with respect to the above-depicted effects. In most of this research, racial minorities represent a small number in organizations and prefer multiculturalism over colorblindness. However, these effects often depend on representation, the ways in which racial minorities perceive the messages being espoused, and the types of differences being highlighted. For example, in the few contexts where they represent the majority group, past work has found African Americans prefer an assimilationist, blindness approach, as their identities are already valued and embraced (Hehman et al., 2012). Further, while much research suggests racial minorities prefer and perform better with multiculturalism, recent work suggests that when minority groups are strongly underrepresented (e.g., making up about 5% of the company) they may wish to merge with the rest (Apfelbaum et al., 2016). In those circumstances multiculturalism may be less effective for performance.

Moreover, multiculturalism can produce some unintended side effects. For example, Zou and Cheryan (2015) note that when multiculturalism is highlighted, racial minorities may feel a "minority spotlight effect," leading them to experience a heightened sense of self-awareness, negative emotion, and discomfort (Crosby et al., 2014). Further, multiculturalism can lead racial minorities in the U.S. to feel excluded from the overarching national identity (e.g., the American identity), lowering their motivation and self-esteem (Zou and Cheryan, 2015). Consistent with this, Verkuyten (2005, 2009) showed that multiculturalism was only related to heightened self-esteem among those for whom their racial-ethnic identity is highly salient and not among those for whom their racial-ethnic identity is less salient. Multiculturalism can also lead to an emphasis of certain, sometimes problematic, differences. For example, multiculturalism has been shown to increase race essentialism (Wilton et al., 2018, but see Martin, 2018) and lead to (positive) stereotyping of the racial minority group (Gutiérrez and Unzueta, 2010), which can lead to negative reactions and perceived prejudice amongst racial minorities (Czopp, 2008). Moreover, although interpreted positively by racial minorities, majority groups perceive the pro-diversity attitudes communicated through multiculturalism as exclusionary (Plaut et al., 2011), subsequently limiting their support for organizational diversity efforts, which can have negative spillover effects on racial minorities' experiences.

One additional side effect of multiculturalism is that it can create a false fairness context. Gündemir and Galinsky (2018) demonstrated that minority group observers perceive organizational diversity mission statements characterized by multiculturalism as a cue for fair treatment of minorities. This, in turn, is associated with disregarding of information about potential racial discrimination and delegitimization of racial discrimination claims (Kaiser et al., 2013; see also Dover et al., 2016).

In sum, although the discussed literature until now shows the promise of multiculturalism vs. colorblindness from the perspective of racial-ethnic minorities, it also indicates some contingency factors for its effectiveness and even some potential downsides. Recently, researchers have started exploring the role of diversity ideologies for another key demographic group: women. Below, we review this work and contrast those findings with the findings around race-ethnicity.

HOW DO WOMEN RESPOND TO DIVERSITY IDEOLOGIES?

In contrast to much research on the benefits of an awareness ideology, multiculturalism, for race, research shows that gender-blind ideology may be beneficial for women. One possible reason for this discrepancy is that the differences made salient for race through multiculturalism tend to be those focused on cultural identities and experiences of racial minorities, which are often ignored in a power structure that is frequently dominated by the majority group. For gender, the types of differences made salient through an awareness ideology are those that focus on stereotypical gender roles, including personality, skill, and preference differences (i.e., men as agentic; women as communal; Martin and Phillips, 2017, 2019; Martin, 2018). Since agentic qualities overlap with leadership qualities, gender-blindness may be more appropriate in the work domain, because reducing sexism involves seeing women as capable and competent with regards to their leadership abilities and potential (Martin et al., 2016).

How do the gender aware vs. gender-blind ideology impact workplace perceptions and outcomes of women? Martin and colleagues suggest that the gender-blind ideology is more instrumental for women at work than the gender aware ideology as the latter can emphasize traditional differences in social roles associated with men and women (also see Eagly and Karau, 2002; Martin et al., 2016). Social role theory suggests that, as a consequence of traditional role distribution between men and women, different group based stereotypes of men and women have emerged (Eagly, 1997). Women are typically associated with communality (characteristics such as warmth and consideration) and men with agency (characteristics such as self-confidence and dominance; Eagly and Karau, 2002). This perceived dichotomy can stand in the way of women's career development because higher status and leadership roles are more strongly associated with agency than communality.

Though this area of research is nascent, theory suggests that gender-blindness can have a positive impact on women at work. Because gender awareness can heighten the salience of the communality of women vs. agency of men, a gender-blind ideology may be more effective for women (Martin et al., 2016; Martin and Phillips, 2017).

Empirical Work on Women's Responses to Diversity Ideologies

Thus far, empirical research on the impact of gender ideologies on women is limited and focuses broadly on (1) women's preference for ideologies and the role of ideologies held by individuals on women's experiences, (2) the effects of ideologies held by the dominant group members (i.e., men), and (3) ideologies at the organizational level affecting women's experiences. We discuss relevant findings next.

Early research has shown that women (as well as men) perceive gender-blind ideology as more appropriate in the work domain (Koenig and Richeson, 2010). According to this work, gender-blindness is perceived as a way to reduce sexism. Outside of the workplace, where men and women often exist in dyadic, interdependent, and familial relationships, an awareness ideology is preferred (Koenig and Richeson, 2010). However, in the workplace, where women face sexism-related challenges, blindness is seen as more fitting in the workplace. Further, some work shows that endorsement of gender-blindness is negatively related to biological essentialism (Martin, 2018), while others reported non-significant effects ($r = -0.09$, $p < 0.10$; Hahn et al., 2015). However, the reported negative effects are specific to hierarchy-attenuating forms of gender-blindness (*value-in-individual differences,* and *value in homogeneity*), as hierarchy-maintaining (assimilationist) forms of gender-blindness are

associated with endorsement of essentialist beliefs (Hahn et al., 2015). Thus, it is clear that the conceptualization of gender-blind ideologies is an important factor in explaining these effects.

The relationship between gender ideologies and essentialist beliefs is problematic, as gender-essentialism is related to more stereotyping, sexism, and backlash (e.g., Martin and Parker, 1995; Bastian and Haslam, 2006); thus, it appears that gender-blindness may have the potential to lessen sexism women experience. Indeed, Koenig and Richeson (2010) found that gender-blindness is negatively associated with sexism, both in individuals' desire to respond without, and benevolent sexism (a form of sexism which denies women agency, by seeing them as reliant on men; Glick and Fiske, 1996). Importantly, the relationship between gender-blindness and benevolent sexism is not limited to men. Women's own endorsement of benevolent sexism leads to a host of problems, where exposure to, and endorsement of, benevolent sexism leads to lower achievement efficacy (Barreto et al., 2010), performance on male-typed tasks (Vescio et al., 2005), and preference for more dependent, and less autonomous, help (Shnabel et al., 2016). Overall, these findings suggest that gender-blindness, particularly when conceptualized as value-in-individual differences or value in homogeneity instead of assimilation, has the potential to create contexts where women experience less sexism.

Some studies examined the role of men's adoption of gender ideologies on women's responses. Martin and colleagues found that when men were primed with gender-blindness, they reduced their dominance in interactions, leading women to contribute more to the conversation (through increased talking time; Martin et al., 2016). Recent research suggests that men who endorse or are exposed to gender-blind messages are less likely to endorse gender-STEM stereotyping, with downstream consequences for evaluation of female scientists, both of which have previously been shown to limit women's opportunities in STEM (Martin and Phillips, 2019). Also, men who were primed with gender-blind ideologies were also more likely to support affirmative action policies, which help women advance in environments where they are underrepresented (Martin, 2018).

Further, when the (organizational) context is characterized by gender-blindness, it appears to be beneficial for women as well. Research showed that women in a gender-blind setting report higher levels of self-confidence, especially in male dominated environments (Martin and Phillips, 2017). Moreover, this increased self-confidence leads them to act in more pro-active ways (e.g., taking more risks), which are actions and behaviors needed to be successful in many work environments and positions of power.

Taken together, although the current state of knowledge on gender ideologies is limited, existing work suggests that gender-blindness may be beneficial for women's advancement at work.

Additional Considerations Around Women's Responses to Diversity Ideologies

Though nascent research has found positive effects of gender-blindness on women's workplace outcomes, like multiculturalism on racial minorities' outcomes, these effects seem to be contextual as well. For example, Martin and Phillips (2017) found that the benefits of gender-blindness are limited to those where men represent the majority and women are underrepresented. In fact, in communal environments (or those made up of majority women) gender-awareness seems to be more effective. Apfelbaum et al. showed similar effects; when women represent a substantial percentage in an organization (40%) they prefer a *value-in-difference* approach. Martin et al. (2018) uncovered that in fact, it is only women who have strong career values (i.e., those who prioritize career related goals) who prefer gender-blindness. Conversely women who have stronger family values (i.e., those who prioritize family related goals) actually prefer gender-awareness.

Further, gender-blindness (much like multiculturalism) can create its own negative side effects. For instance, policies such as "meritocracy," which many companies utilize as a form of the blindness ideology (Apfelbaum et al., 2016), that ignore factors that shape and bias women's performance at work (i.e., being "blind" to these issues) exacerbate prejudice toward women in occupational domains. In this respect, Castilla and Benard (2010) show that the presence of meritocratic (i.e., gender-blind) policies prompt both male and female decision makers to offer higher levels of bonus to men than to equally qualified women. The authors speculate that these gender-blind policies can, for instance, enhance moral credentials of decision makers, which in turn evoke biased decision-making. The same study also demonstrates that when the context communicates awareness for biases women at work face, decision makers can engage in behaviors that attempt at making up for injustice. Thus, by reducing awareness of group-based challenges women face, gender-blindness may be detrimental for their workplace experiences and outcomes. Finally, gender-blindness can exacerbate backlash for women who display more feminine behavior (Malicke, 2013). Thus, there is potential for gender-blindness to prohibit women from behaving in stereotypically feminine ways, which may mute their authenticity. Although these current insights primarily highlight how women (vs. men) are perceived as targets rather than highlighting the target's own perspective, these findings are informative for understanding the potential downsides of the gender-blind ideology and form a stepping stone for future work extending these to the target's perspective.

SUGGESTIONS FROM PAST RESEARCH TO ADDRESS THE SHORTCOMINGS OF DIVERSITY IDEOLOGIES

The discussion above suggests that multiculturalism may be beneficial for racial minorities and gender-blindness for women. At the same time, it demonstrates that both multiculturalism and gender-blindness can have unintended, negative consequences. This has led many scholars to attempt to develop more nuanced ideological approaches to diversity, primarily in the context of racial diversity.

Some scholars suggested a focus on "identity safety," rather than multiculturalism. The identity safety approach acknowledges that diversity can be a source of value and that social groups *can* experience social contexts in similar ways, but that various barriers may prevent them from doing so (Purdie-Vaughns and Walton, 2011). Others proposed that, to reduce the majority group's sense of exclusion, multiculturalism message should explicitly include the majority group in it, the so-called *all-inclusive multiculturalism* approach (Stevens et al., 2008; Plaut et al., 2011). This could lower their resistance among the majority, creating more inclusive environments where minorities have more opportunities and more positive work place experiences.

Another strategy introduced in recent research has focused on ways to reduce the negative effects of multiculturalism while retaining its positive effects. This work demonstrated that explicitly incorporating an equal opportunity, value-in-merit message to multiculturalism can help circumvent some of multiculturalism's negative effects (Gündemir et al., 2017b). This synergistic approach termed *multicultural meritocracy* emphasizes organizations' commitment to a highly accomplished, qualified and diverse workforce. Multicultural meritocracy reduces negative effects of multiculturalism such as stereotype activation of minorities and sense of exclusion by the majority, while retaining its positive effects such as psychological engagement of minorities (Gündemir et al., 2017b).

Although research on such ideal strategies is missing in the context of gender ideologies, we speculate that this last approach may also help address some of the shortcomings identified in gender ideologies research. The synergistic approach of gender aware meritocracy may tackle some of the specific limitations of the gender-blind ideology. For example, Martin (2018) found that compared to a generalized "awareness" message, an "experience-awareness," which included examples of experiences of women, increased men's recognition of discrimination and increased their support for affirmative action policies. By focusing on the unique experiences and obstacles women face, rather than essential, gender-role differences, men's attention was directed toward the differences often highlighted for race through multiculturalism, and away from gender-role stereotypes that limit women's opportunities. Thus, adding gender awareness (i.e., awareness of experience) to the gender-blind (i.e., blindness to essentialist differences), meritocratic message can make decision makers aware of the potential for gender-based prejudice, which can reduce biased decision making in reward distribution (see Castilla and Benard, 2010). Moreover, since gender aware meritocracy provides a more inclusive message than the gender-blind ideology, in which gender based differences are not only recognized but also explicitly valued, engaging in typically feminine behaviors may be more accepted (see Malicke, 2013). Thus, such a gender aware meritocracy message may be more effective than gender-blindness as it is less likely to ignore gender bias and to prohibit women from behaving in feminine ways.

In sum, although multiculturalism and gender-blindness appear to be promising for racial minorities and women, respectively, neither ideology is a panacea as both can create negative side effects. One alternative approach, multicultural (or gender aware) meritocracy, has been shown to be beneficial for racial minorities and has the potential to benefit women. More research is needed to understand effective strategies for successful implementation of diversity ideologies.

GENERAL DISCUSSION

We have presented a review of the diversity ideologies literature from the target's perspective. In particular, our discussion of the literature focused on the target's perspective, highlighting how the diversity ideology affects racial minorities' and women's self-perceptions and behaviors in work settings. The literature suggests that a diversity aware, multiculturalism ideology, which recognizes and celebrates social group differences, is associated with more positive outcomes than a diversity blind, colorblindness ideology for racial-ethnic minorities, such as better performance outcomes, increased psychological engagement, inclusion, and workplace satisfaction, more positive leadership self-perceptions and reduced perceptions of bias and turnover intentions. For women, gender-blindness ideology is associated with more positive workplace outcomes than a gender aware ideology, such as enhanced self-confidence, pro-active behaviors and leadership emergence.

Taken together, the patterns around race-ethnicity vs. gender present a conundrum for researchers and practitioners. In general, diversity-awareness appears to be effective for some target groups of diversity initiatives such as racial minorities, whereas diversity blindness is more effective for other target groups such as women. Where does this discrepancy come from? Existing theory and empirical work suggest that racial minorities have a group-based need to be acknowledged and valued for their differences (Dovidio et al., 2010). Hence they respond more positively to the awareness ideology. For women, however, an increased awareness of gender differences may activate stereotypes, which may stand in the way of their career development (e.g., Martin and Phillips, 2017). As such, for them a blindness ideology may be more instrumental and thus evoke more positive responses. Especially given the finding that most (about two thirds of) companies utilize a diversity aware approach (Apfelbaum et al., 2016), our review suggests that while these approaches are potentially beneficial for racial-minorities' career development, they are unlikely to be effective for women's career development. Consequently, organizational leadership needs to clearly specify the target group(s) of their diversity approach and tailor their approach to address different groups' position and needs.

While it is unlikely that one, holistic approach to diversity is the solution to these problems, the underlying reasons that diversity ideologies seem to have different effects on racial minorities and women are the types of differences being embraced and downplayed through race/gender awareness (Martin, 2018). As suggested above, perhaps a more nuanced approach, which specifies the types of differences to be "aware of" or "blind to" and how to implement these solutions effectively could be more effective in providing benefits to both racial minorities, women, and even other social groups. In line with *identity safety* (Purdie-Vaughns and Walton, 2011)—highlighting

the similarities between social groups, while acknowledging their different experiences in social settings—there may be potential to leverage the potential of both of these ideologies. Consistent with this, a multicultural meritocracy approach, which simultaneously emphasizes value in diversity and value in merit, may offer a promising new way for both race-ethnicity and gender diversity (Gündemir et al., 2017b).

Implications for Racial Minorities

Given the growing racial diversity (e.g., Colby and Ortman, 2015; Eurostat, 2018), it is important to understand the effects of how to navigate and leverage this diversity. Our review suggests that multiculturalism can be an effective strategy in making racial minorities feel included, empowered, and engaged. In contrast to organizations that are inclined to favor one ideology over the other (often awareness; Apfelbaum et al., 2016), individuals are more likely to simultaneously endorse both aware and blind ideologies (often equally; MTV Bias Survey, 2014; Hahn et al., 2015). These dynamics make it important to ensure that research extends beyond the lab to the field. In doing so illuminating the interaction between organizational and individual diversity ideologies is of key importance. Further, it is important to understand when, where, and why multiculturalism is beneficial to racial minorities as some work suggests that these results are specific to environments where racial minorities are underrepresented, identify with their race to some extent, and do not feel a heightened self-consciousness based on such "awareness."

While this review focused on the effects for racial minorities, it is equally important to understand how these approaches affect dominant group members own sense of efficacy, inclusion, and performance. Indeed, some research has suggested that multiculturalism makes Whites feel excluded, which can in fact undermine their efficacy and performance. Thus, as organizations attempt to implement these strategies, an inclusive multiculturalism strategy becomes increasingly important to best leverage diversity of all organizational members, and not just the minority group. Increasing a sense of inclusion for all groups can also have direct benefits from the target's perspective as research suggests that this would encourage the majority or the dominant group to endorse pro-minority initiatives in organizations (Plaut et al., 2011).

Implications for Women

In contrast to the benefits for racial minorities, this review also indicated that gender-blindness seemed to be a more effective approach for women in organizational domains. Given the dominant approach to organizational diversity is an awareness approach (Apfelbaum et al., 2016), it is important that the implications of this approach for women is also considered. Indeed, scholars have assumed that awareness ideologies are beneficial for all social groups (Plaut, 2010; Galinsky et al., 2015). However, it seems like this may not always be true, making it increasingly important to understand the unintended consequences of these ideologies for women, as well as other social groups. Additionally, many in the public and practitioner sphere embrace awareness ideologies, advocating for women to "own it" and embrace their femininity and feminine qualities at work to be successful at work (Annis and Merron, 2014; Krawcheck, 2017). There are far fewer books in popular culture advocating for a gender-blind approach; thus, it becomes important to heed caution in promoting these strategies, without knowing their implications for women.

Further, this review found that gender-blindness seems to be more effective than awareness in male dominated domains, positions of power, or for women who value their career quite strongly. Thus, it is important to understand the limits to these effects, as downplaying gender differences may also have potential to blind people to women's unique experiences in organizations or prohibit women from engaging in feminine behaviors (perhaps making women feel like they need to "act more like men"). Another potential consequence of a purely gender-blind ideology, which disregards some of the unique challenges women face, could be to blame women for their disadvantaged position. That is, gender-blindness can, while being empowering, also enhance "victim blaming" (see Kim et al., 2018).

Recommendations for Future Research

One area that diversity ideologies research for both race-ethnicity and gender needs more work is the conceptual clarification of the ideological messages. As we discussed above scholars use a myriad ways to measure or manipulate different ideological messages. Some of the reviewed work clearly demonstrates that the specific elements of a diversity ideology message are consequential for how target groups respond to these. For the future, it remains important to clearly define the ideology in question, and even to test how slight differences in its focus (e.g., colorblindness that emphasizes an overarching group identity vs. individual uniqueness) influence women's and minorities responses.

Another area that needs more attention in future research is the study of intersectionality. Intersectionality research is concerned with the study of the impact of having multiple, often disadvantaged, identities (e.g., woman and minority) on individuals' experiences and behavior (Purdie-Vaughns and Eibach, 2008). From an intersectionality perspective, studying minority women as a separate group would provide unique insights because, given their multiple disadvantaged identities, this group's experiences may differ from both minority men and majority group women. That is, minority women may experience impediments as a consequence of both their gender and race-ethnicity, whereas minority men may primarily experience racial bias and majority group women gender bias. These more complex identity configurations may be especially relevant for diversity ideology research given the contrasting effects of gender and race-ethnicity focused ideologies as described above (e.g., Wilton et al., 2015; Martin and Phillips, 2017). Moreover, research on intersectional identity and stereotypes suggests that such research could provide insights that are specific for the experiences of distinct minority women groups. For example, given that the femininity stereotype applies much more strongly to some minority groups (e.g., Asian American) than others (e.g., African American; Galinsky et al., 2013), a gender

aware ideology, which arguably emphasizes gender stereotypes may have substantially different consequences for women from either minority group. Further, beyond racial minority women, many individuals within groups differ in their identification, experiences, stigma-consciousness, as well as many other factors (Deaux et al., 1985; Bem, 1993; Pinel, 1999). As mentioned above, awareness and blindness ideologies have different effects based on a number of these factors. Therefore, it is important to understand not only broad level effects on racial minorities and women, but extend research to other factors that intersect with these identities.

The bulk of research on diversity ideologies focuses on racial minorities. Within this work, much of the research has examined the role of diversity ideologies in the U.S. context, focusing primarily on White- and African Americans, whose relations are often seen as hostile, contentious, and anxiety-ridden (Markus et al., 2000; Ryan et al., 2007). Thus, they may have unique effects, compared to interethnic relations involving different minority groups. Therefore, more work on how multiculturalism and colorblindness affect other ethnic groups such as Hispanics, East and South Asians, Middle Eastern, and Biracial individuals is needed. For example, individuals are more likely to endorse positive stereotypes about Asian Americans (the "model minority"; Wong et al., 1998). Although multiculturalism may heighten positive stereotypes about Asians, these stereotypes have pernicious and insidious effects, leading to feelings of marginalization, negative emotions, and decreased well-being and mental health (Sue et al., 2007; Siy and Cheryan, 2013; Czopp et al., 2015). Thus, it is imperative for research to go beyond targets who have historically hostile intergroup relations, to understand how multiculturalism affects many different ethnic groups.

Although research on diversity ideologies mainly focused on race, there is also increasing awareness for the role of diversity ideologies for women. As a result, this contribution also focused on these two groups' responses. However, racial-ethnic minorities and women are not the only potential demographic groups of interest. For instance, with the aging population, understanding the role diversity ideologies in the context of age diversity becomes a relevant question. To our knowledge, there is only a single study that examined the role of diversity ideologies in the context of age diversity. This work has demonstrated that organizational multi-age approach (i.e., a diversity aware ideology with a focus on recognition and celebration of age differences) is associated with both positive perceptions of older employees by others and older employees' reduced turnover intentions (Iweins et al., 2013). Diversity awareness can thus be beneficial for older employees (for similar arguments pertaining to broader age-inclusive HR practices see Boehm et al., 2014). For future work it is important to replicate these findings as well as to highlight their underlying reasons.

Besides diversity ideologies' impact on demographic groups based on visible characteristics (e.g., race, gender, age), it would also be valuable to examine these ideologies' effects on groups with invisible or concealable characteristics, such as sexual minorities. As a consequence of sexual minorities' emancipation in the last decades, gaining insight into the workplace experiences of these groups' has become a priority for many organizations. Moreover, academics have underlined the need for research examining the impact of identity aware vs. identity blind approaches for sexual minorities (Hebl et al., 2014). Future work should study the role of diversity ideologies on workplace experiences and outcomes of sexual minorities.

The current analysis on diversity ideologies in organizations focused primarily on the two dominant ideologies in the literature. It is important to note that more recently another promising ideological approach, polyculturalism, has been introduced. Polyculturalism focuses on "how cultures have interacted, influenced, and shared ideas and practices with each other throughout history, and how they continue to do so today" (Rosenthal and Levy, 2012, p. 2). By focusing on interconnectedness of and mutual influence between cultures, polyculturalism differs from multiculturalism as multiculturalism views cultures as distinct and separate entities. Research on polyculturalism has yielded important findings for diverse environments. For example, polyculturalism predicts intergroup contact and friendship (Rosenthal and Levy, 2016), an openness to cultural mixing (Cho et al., 2017) as well as lowered sexism (Rosenthal et al., 2014). Despite these promising findings, research on the impact of polyculturalism on workplace perceptions and outcomes is largely absent. Future work should examine the role the polyculturalist ideology plays in diverse workplace settings.

Further, much, if not most, research focuses on the ways in which diversity ideologies affect views of and behavior toward racial minorities and women; however, much less work has examined how these ideologies affect majority members views of themselves and behavior toward other majority members. For example, Plaut et al. (2011) find that Whites associate multiculturalism more with exclusion than inclusion. Martin and Phillips (2017) find that men who endorse gender-blindness are also more likely to identify with communal (i.e., gender-incongruent) traits. Thus, while understanding how diversity ideologies affect minority groups' self-perceptions is the primary focus of the current contribution, it is also important to understand how these ideologies influence dominant groups' self-perceptions.

As we discuss above, diversity ideologies, however, are not only organizational-level phenomena but can also refer individual level beliefs. That is, individual employees also differ in the extent to which they endorse diversity aware vs. diversity blind ideologies. Person-organization fit literature suggests that the (perceived) overlap between employee and organizational values is highly consequential for employee behavior (Kristof-Brown et al., 2005). Studying the interaction between individual and organizational level ideologies is an important avenue for future research to grasp the complexities of employee responses to diversity ideologies. Relatedly, future research can pay attention to potential "spill-over effects" between organizational initiatives (such as training) on ideologies held by individual employees. For example, it is possible that implicit bias trainings may make employees more "aware," while policies such as performance-based reward may make them more "blind." Although the current article zooms into

diversity ideologies, interactions between diversity initiatives and employee ideological beliefs are a possibly fruitful avenue for future research.

Finally, we focused our review on organizational contexts, as these are where racial minorities and women are highly underrepresented (Catalyst, 2016; Fortune, 2017), and these contexts hold the most opportunity for power, influence, resources, and therefore equality between groups. Conducting more studies diversity ideologies on a national level would be valuable for the future, especially given that governments not only utilize these approaches but also countries differ in them (e.g., the U.S.' "melting-pot" vs. Canada's multiculturalism approach to diversity; Guimond et al., 2013). Indeed, work has found that above and beyond individual's endorsement of diversity ideologies, prejudice against Muslims is reduced when stronger multiculturalism policies are in effect (Guimond et al., 2013). For future work, it is imperative to illuminate the role of national ideologies on racial minorities' and women's perceptions and experiences.

CONCLUSION

Research on diversity ideologies is relatively new but has generated some key insights in the last decades, especially in the context of racial and ethnic diversity. Emerging research on gender ideologies adds to this line of work and raises new theoretical questions and practical challenges that need to be addressed in the future. Overall, our review illustrates the important role of beliefs around diversity on the quality of intergroup relations focusing primarily on the target's perspective, with key implications for organizations and society.

AUTHOR CONTRIBUTIONS

All authors contributed to decisions with regards to initial focus and scope of the review. SG wrote the first draft of the manuscript. All authors contributed to manuscript revision, read, and approved the submitted version.

REFERENCES

Annis, B., and Merron, K. (2014). *Gender Intelligence: Breakthrough Strategies for Increasing Diversity and Improving Your Bottom Line*. New York, NY: Harper Business.

Apfelbaum, E. P., Norton, M. I., and Sommers, S. R. (2012). Racial color blindness: emergence, practice, and implications. *Curr. Dir. Psychol. Sci.* 21, 205–209. doi: 10.1177/0963721411434980

Apfelbaum, E. P., Stephens, N. M., and Reagans, R. E. (2016). Beyond one-size-fits-all:Tailoring diversity approaches to social groups. *J. Pers. Soc. Psychol.* 111, 547–566. doi: 10.1037/pspi0000071

Arends-Tóth, J., and Van De Vijver, F. J. R. (2003). Multiculturalism and acculturation: views of Dutch and Turkish-Dutch. *Eur. J. Soc. Psychol.* 33, 249–266. doi: 10.1002/ejsp.143

Barreto, M., Ellemers, N., Piebinga, L., and Moya, M. (2010). How nice of us and how dumb of me: The effect of exposure to benevolent sexism on women's task and relational self-descriptions. *Sex Roles*. 62, 532–544. doi: 10.1007/s11199-009-9699-0

Barta, T., Kleiner, M., and Neuman, T. (2012). *Is There a Payoff From Top Team Diversity?* McKinsey Quarterly. Available online at: http://www.mckinsey.com/business-functions/organization/our-insights/is-there-a-payoff-from-top-team-diversity

Bastian, B., and Haslam, N. (2006). Psychological essentialism and stereotype endorsement. *J. Exp. Soc. Psychol.* 42, 228–235. doi: 10.1016/j.jesp.2005.03.003

Bem, S. L. (1993). *The Lenses of Gender: Transforming the Debate on Sexual Inequality*. New Haven, CT: Yale University Press.

Boehm, S. A., Kunze, F., and Bruch, H. (2014). Spotlight on agediversity climate: the impact of Age inclusive HR practices on firm-level outcomes. *Pers. Psychol.* 67, 667–704. doi: 10.1111/peps.12047

Bourguignon, D. (2017). *Diversity Policies, Prejudice, and Well-Being of Employees in Luxembourgish Organizations*. Paper presented at the Diversity in Organizations Conference at Solvay Business School, (Brussels).

Castilla, E. J., and Benard, S. (2010). The paradox of meritocracy in organizations. *Adm. Sci. Q.* 55, 543–676. doi: 10.2189/asqu.2010.55.4.543

Catalyst (2016). *Women CEOs of Sand P 500*. Available online at: http://www.catalyst.org/knowledge/women-ceos-sp-500

Cho, J., Morris, M. W., Slepian, M. L., and Tadmor, C. T. (2017). Choosing fusion: The effects of diversity ideologies on preference for culturally mixed experiences. *J. Exp. Soc. Psychol.* 69, 163–171. doi: 10.1016/j.jesp.2016.06.013

Colby, S. L., and Ortman, J. M. (2015). *Projections of the Size and Composition of the U.S. Population: 2014 to 2060. 2015*. Availale online at: https://www.census.gov/content/dam/Census/library/publications/2015/demo/p25-1143.pdf

Costa-Lopes, R., Pereira, C. R., and Judd, C. M. (2014). Categorisation salience and ingroup bias: The buffering role of a multicultural ideology. *Int. J. Psychol.* 49, 508–512. doi: 10.1002/ijop.12044

Crosby, F. J., Iyer, A., and Sincharoen, S. (2006). Understanding affirmative action. *Ann. Rev. Psychol.* 57, 585–611. doi: 10.1146/annurev.psych.57.102904.190029

Crosby, J. R., King, M., and Savitsky, K. (2014). The minority spotlight effect. *Soc. Psychol. Pers. Sci.* 5, 743–750. doi: 10.1177/1948550614527625

Czopp, A. M. (2008). When is a compliment not a compliment? Evaluating expressions of positive stereotypes. *J. Exp. Soc. Psychol.* 44, 413–420. doi: 10.1016/j.jesp.2006.12.007

Czopp, A. M., Kay, A. C., and Cheryan, S. (2015). Positive stereotypes are pervasive and powerful. *Pers. Psychol. Sci.* 10, 451–463. doi: 10.1177/1745691615588091

Deaux, K., Winton, W., Crowley, M., and Lewis, L. L. (1985). Level of categorization and content of gender stereotypes. *Soc. Cogn.* 3, 145–167. doi: 10.1521/soco.1985.3.2.145

Dover, T. L., Major, B., and Kaiser, C. R. (2016). Members of high-status groups are threatened by pro-diversity organizational messages. *J. Exp. Soc. Psychol.* 62, 58–67. doi: 10.1016/j.jesp.2015.10.006

Dovidio, J. F., Gaertner, S. L., and Saguy, T. (2007). Another view of "we": Majority and minority group perspectives on a common ingroup identity. *Eur. Rev. Soc. Psychol.* 18, 296–330. doi: 10.1080/10463280701726132

Dovidio, J. F., Saguy, T., and Gaertner, S. L. (2010). Appreciating the role of the "individual mind" in diversity science: commonality, harmony, and social change. *Psychol. Inquiry* 21, 108–114. doi: 10.1080/1047840X.2010.486071

Eagly, A. H. (1997). Sex differences in social behavior: Comparing social role theory and evolutionary psychology. *Am. Psychol.* 50, 1380–1383. doi: 10.1037/0003-066X.52.12.1380.b

Eagly, A. H., and Karau, S. J. (2002). Role congruity theory of prejudice toward female leaders. *Psychol. Rev.* 109, 573–598 doi: 10.1037/0033-295X.109.3.573

Ely, R. J., and Thomas, D. A. (2001). Cultural diversity at work: the effects of diversity perspectives on work group processes and outcomes. *Adm. Sci. Q.* 46, 229–273. doi: 10.2307/2667087

Eurostat (2018). *Immigration by Age Group, Sex and Citizenship*. Available online at: http://appsso.eurostat.ec.europa.eu/nui/submitViewTableAction.do

Fiske, S. T., Cuddy, A. J. C., Glick, P., and Xu, J. (2002). A model of (often mixed) stereotype content: competence and warmth respectively follow from perceived status and competition. *J. Pers. Soc. Psychol.* 82, 878–902. doi: 10.1037/0022-3514.82.6.878

Fortune (2017). *White Men Account for 72% of Corporate Leadership at 16 of the Fortune 500 Companies*. Available online at: http://fortune.com/2017/06/09/white-men-senior-executives-fortune-500-companies-diversity-data/

Fryberg, S. A., and Stephens, N. M. (2010). When the world is colorblind, American Indians are invisible. *Psychol. Inquiry* 21, 115–119. doi: 10.1080/1047840X.2010.483847

Gaertner, S. L., and Dovidio, J. F. (2014). *Reducing Intergroup Bias: the Common Ingroup Identity Model*. Philadelphia, PA: Psychology Press. doi: 10.4324/9781315804576

Galinsky, A. D., Hall, E. V., and Cuddy, A. J. (2013). Gendered races: Implications for interracial marriage, leadership selection, and athletic participation. *Psychol. Sci.* 24, 498–506. doi: 10.1177/0956797612457783

Galinsky, A. D., Todd, A. R., Homan, A. C., Phillips, K. W., Apfelbaum, E. P., Sasaki, S. J., et al. (2015). Maximizing the gains and minimizing the pains of diversity. *Pers. Psychol. Sci.* 10, 742–748. doi: 10.1177/1745691615598513

Glick, P., and Fiske, S. T. (1996). The ambivalent sexism inventory: Differentiating hostile and benevolent sexism. *J. Pers. Soc. Psychol.* 70, 491–512. doi: 10.1037/0022-3514.70.3.491

Government of Canada (2018). *Multiculturalism*. Available online at: https://www.canada.ca/en/services/culture/canadian-identity-society/multiculturalism.html

Guimond, S., Crisp, R. J., De Oliveira, P., Kamiejski, R., Kteily, N., Kuepper, B., et al. (2013). Diversity policy, social dominance, and intergroup relations: Predicting prejudice in changing social and political contexts. *J. Pers. Soc. Psychol.* 104, 941–958. doi: 10.1037/a0032069

Gündemir, S., Dovidio, J. F., Homan, A. C., and De Dreu, C. K. W. (2017a). The impact of organizational diversity policies on minority employees' leadership self-perceptions and goals. *J. Leadersh. Organ. Stud.* 24, 172–188. doi: 10.1177/1548051816662615

Gündemir, S., and Galinsky, A. D. (2018). Multicolored blindfolds: how organizational multiculturalism can conceal racial discrimination and delegitimize racial discrimination claims. *Soc. Psychol. Pers. Sci.* 9, 825–834. doi: 10.1177/1948550617726830

Gündemir, S., Homan, A. C., de Dreu, C. K. W., and van Vugt, M. (2014). Think leader, think white? Capturing and weakening an implicit pro-white leadership bias. *PLoS ONE* 9:e83915. doi: 10.1371/journal.pone.0083915

Gündemir, S., Homan, A. C., Usova, A., and Galinsky, A. D. (2017b). Multicultural meritocracy: the synergistic benefits of valuing both diversity and merit. *J. Exp. Soc. Psychol.* 73, 34–41. doi: 10.1016/j.jesp.2017.06.002

Gutiérrez, A. S., and Unzueta, M. M. (2010). The effect of inter- ethnic ideologies on the likability of stereotypic vs. counter- stereotypic minority targets. *J. Exp. Soc. Psychol.* 46, 775–784. doi: 10.1016/j.jesp.2010.03.010

Hahn, A., Banchefsky, S., Park, B., and Judd, C. M. (2015). Measuring intergroup ideologies: positive and negative aspects of emphasizing versus looking beyond group differences. *Pers. Soc. Psychol. Bull.* 41, 1646–1664. doi: 10.1177/0146167215607351

Hahn, A., Judd, C. M., and Park, B. (2010). Thinking about group differences: ideologies and national identities. *Psychol. Inquiry* 21, 120–126. doi: 10.1080/1047840X.2010.483997

Hebl, M. R., Martinez, L. R., Skorinko, J. L., Barron, L. G., and King, E. B. (2014). "How diversity ideologies influence LGBT employees: to be or not to be; and to see or not to see," in *Diversity ideologies in organizations*, eds, K. M. Thomas, V. Plaut, and M. Tran (New York, NY: Taylor and Francis), 151–176.

Hehman, E., Gaertner, S. L., Dovidio, J. F., Mania, E. W., Guerra, R., Wilson, D. C., et al. (2012). Group status drives majority and minority integration preferences. *Psychol. Sci.*. 23, 46–52. doi: 10.1177/0956797611423547

Heilman, M. E., Simon, M. C., and Repper, D. P. (1987). Intentionally favored, unintentionally harmed? Impact of sex-based preferential selection on self-perceptions and self-evaluations. *J. Appl. Psychol.* 72, 62–68. doi: 10.1037/0021-9010.72.1.62

Hideg, I., and Ferris, D. L. (2016). The compassionate sexist? How benevolent sexism promotes and undermines gender equality in the workplace. *J. Pers. Soc. Psychol.* 111, 706–727. doi: 10.1037/pspi0000072

Holoien, D. S., and Shelton, J. N. (2012). You deplete me: the cognitive costs of colorblindness on ethnic minorities. *J. Exp. Soc. Psychol.* 48, 562–565. doi: 10.1016/j.jesp.2011.09.010

Homan, A. C., van Knippenberg, D., Van Kleef, G. A., and De Dreu, C. K. W. (2007). Bridging faultlines by valuing diversity: the effects of diversity beliefs on information elaboration and performance in diverse work groups. *J. Appl. Psychol.* 92, 1189–1199. doi: 10.1037/0021-9010.92.5.1189

Ito, T. A., and Urland, G. R. (2003). Race and gender on the brain: electrocortical measures of attention to the race and gender of multiply categorizable individuals. *J. Pers. Soc. Psychol.* 85, 616–626. doi: 10.1037/0022-3514.85.4.616

Iweins, C., Desmette, D., Yzerbyt, V., and Stinglhamber, F. (2013). Ageism at work: The impact of intergenerational contact and organizational multi-age perspective. *Eur. J. Work Organ. Psychol.* 22, 331–346. doi: 10.1080/1359432X.2012.748656

Jackson, S. E., Joshi, A., and Erhardt, N. L. (2003). Recent research on team and organizational diversity: SWOT analysis and implications. *J. Manag.* 29, 801–830. doi: 10.1016/S0149-2063(03)00080-1

Jansen, W. S., Vos, M. W., Otten, S., Podsiadlowski, A., and van der Zee, K. I. (2016). Colorblind or colorful? How diversity approaches affect cultural majority and minority employees. *J. Appl. Soc. Psychol.* 46, 81–93. doi: 10.1111/jasp.12332

Joshi, Y. (2014). The trouble with inclusion. *Virginia J. Soc. Policy Law.* 21, 207–265.

Kaiser, C. R., Major, B., Jurcevic, I., Dover, T. L., Brady, L. M., and Shapiro, J. R. (2013). Presumed fair: Ironic effects of organizational diversity structures. *J. Pers. Soc. Psychol.* 104, 504–519. doi: 10.1037/a0030838

Kalev, A., Dobbin, F., and Kelly, E. (2006). Best practices or best guesses? Diversity management and the remediation of inequality. *Am. Sociol. Rev.* 71, 589–617. doi: 10.1177/000312240607100404

Kelly, E., and Dobbin, F. (1998). How affirmative action became diversity management: employer response to antidiscrimination law. 1961 to 1996. *Am. Behav. Sci*. 41, 960–984. doi: 10.1177/0002764298041007008

Kim, J.Y., Fitzsimons, G. M., and Kay, A. C. (2018). Lean in messages increase attributions of women's responsibility for gender inequality. *J. Pers. Soc. Psychol.* 115, 974–1001. doi: 10.1037/pspa0000129

Koenig, A., and Richeson, J. (2010). The contextual endorsement of sexblind versus sexaware ideologies. *Soc. Psychol.* 41, 186–191 doi: 10.1027/1864-9335/a000026

Konrad, A. M., and Linnehan, F. (1995). Formalized HRM structures: coordinating equal employment opportunity or concealing organizational practices?. *Acad. Manag. J.* 38, 787–820. doi: 10.5465/256746

Krawcheck, S. (2017). *Own it: The Power of Women at Work*. New York, NY: Crown Business.

Kristof-Brown, A. L., Zimmerman, R. D., and Johnson, E. C. (2005). Consequences of individuals' fit at work: a meta-analysis of person-job, person-organization, person-group, and person-supervisor fit. *Pers. Psychol.* 58, 281–342. doi: 10.1111/j.1744-6570.2005.00672.x

Leslie, L. M., Mayer, D. M., and Kravitz, D. A. (2014). The stigma of affirmative action: a stereotyping- based theory and meta-analytic test of the consequences for performance. *Acad. Manag. J.* 57, 964–989. doi: 10.5465/amj.2011.0940

Levin, S., Matthews, M., Guimond, S., Sidanius, J., Pratto, F., Kteily, N., et al. (2012). Assimilation, multiculturalism, and colorblindness: mediated and moderated relationships between social dominance orientation and prejudice. *J. Exp. Soc. Psychol.* 48, 207–212. doi: 10.1016/j.jesp.2011.06.019

Malicke, J. (2013). *Gender Ideology and Evaluations of a Male Versus Female Target: Effects of Emphasizing Versus Downplaying Gender Differences*. Unpublished Master's Thesis, University of Colorado Boulder.

Markus, H. R., Steele, C. M., and Steele, D. M. (2000). Colorblindness as a barrier to inclusion: Assimilation and nonimmigrant minorities. *Daedalus.* 129, 233–259. Available online at: https://www.jstor.org/stable/20027672

Martin, A. E. (2018). *The Divergent Effects of Diversity Ideologies for Race and Gender Relations* (No. 10789688). ProQuest Dissertations and Theses Global (2034426489).

Martin, A. E., Gündemir, S., Phillips, K. W., and Homan, A. C. (2018). *Women's Responses to Gender-Aware and Gender-Blind Organizational Approaches: The Moderating Role of Career and Family Orientation*. Working Paper, Columbia Business School, New York, NY.

Martin, A. E., and Phillips, K. W. (2017). What "blindness" to gender differences helps women see and do: Implications for confidence, agency, and action in male-dominated environments. *Organ. Behav. Hum. Dec. Proc.* 142, 28–44. doi: 10.1016/j.obhdp.2017.07.004

Martin, A. E., and Phillips, K. W. (2019). Blind to bias: the benefits of gender-blindness for STEM Stereotyping. *J. Exp. Soc. Psychol.* doi: 10.1016/j.jesp.2018.11.003

Martin, A. E., Phillips, K. W., and Sasaki, S. J. (2016). *The Benefits of Gender-Blindness for Men's Bias Towards and Inclusion of Women*. Paper

presented at Academy of Management Annual Meeting, Anaheim, CA. doi: 10.5465/ambpp.2016.14581abstract

Martin, C. L., and Parker, S. (1995). Folk theories about sex and race differences. *Pers. Soc. Psychol. Bull.* 21, 45–57. doi: 10.1177/0146167295211006

Meeussen, L., Otten, S., and Phalet, K. (2014). Managing diversity: How leaders' multiculturalism and colorblindness affect work group functioning. *Group Processes and Intergroup Relations.* 17, 629–644. doi: 10.1177/1368430214525809

Morrison, K. R., and Chung, A. H. (2011). "White" or "European American"? Self-identifying labels influence majority group members' interethnic attitudes. *J. Exp. Soc. Psychol.* 47, 165-170. doi: 10.1016/j.jesp.2010.07.019

MTV Bias Survey (2014). *MTV Survey on Millennials and Race: Executive Summary: MTV Strategic Insights*. New York, NY. Available online at: http://d1fqdnmgwphrky.cloudfront.net/studies/000/000/001/DBR_MTV_Bias_Survey_Executive_Summary.pdf?1398858309

Ospina, S., and Foldy, E. (2009). A critical review of race and ethnicity in the leadership literature: Surfacing context, power and the collective dimensions of leadership. *Leadership Q.* 20, 876–896. doi: 10.1016/j.leaqua.2009.09.005

Page, S. E. (2007). *The Difference: How the Power of Diversity Creates Better Groups, Firms, Schools, and Societies*. Princeton, NJ: Princeton University Press.

Park, B., and Judd, C. M. (2005). Rethinking the link between categorization and prejudice within the social cognition perspective. *Pers. Soc. Psychol. Rev.* 9, 108–130. doi: 10.1207/s15327957pspr0902_2

Peery, D. (2011). The colorblind ideal in a race-conscious reality: the case for a new legal ideal for race relations. *Northwest. J. Law Soc. Policy.* 6, 473–495. Available online at: https://scholarlycommons.law.northwestern.edu/cgi/viewcontent.cgi?article=1070&context=njlsp

Pelled, L. H., Eisenhardt, K. M., and Xin, K. R. (1999). Exploring the black box: an analysis of work group diversity, conflict, and performance. *Adm. Sci. Q.* 44, 1–28. doi: 10.2307/2667029

Phouthonephackdy, T. (2016). *Diversity Climate Perceptions and Employee Turnover Intentions: The Importance of Racial Group Identification* (Master's thesis), University of Waterloo.

Pinel, E. C. (1999). Stigma consciousness: the psychological legacy of social stereotypes. *J. Pers. Soc. Psychol.* 76, 114–128. doi: 10.1037/0022-3514.76.1.114

Plaut, V. C. (2010). Diversity science: why and how difference makes a difference. *Psychol. Inquiry* 21, 77–99. doi: 10.1080/10478401003676501

Plaut, V. C., Garnett, F. G., Buffardi, L. E., and Sanchez-Burks, J. (2011). "What about me?" Perceptions 18 of exclusion and Whites' reactions to multiculturalism. *J. Pers. Soc. Psychol.* 101, 337–353. doi: 10.1037/a0022832

Plaut, V. C., Thomas, K. M., and Goren, M. J. (2009). Is multiculturalism or colorblindness better for minorities? *Psychol. Sci..* 20, 444–446. doi: 10.1111/j.1467-9280.2009.02318.x

Plaut, V. C., Thomas, K. M., Hurd, K., and Romano, C. A. (2018). Do color blindness and multiculturalism remedy or foster discrimination and racism?. *Curr. Dir. Psychol. Sci.* 27, 200–206. doi: 10.1177/0963721418766068

Purdie-Vaughns, V., and Eibach, R. P. (2008). Intersectional invisibility: The distinctive advantages and disadvantages of multiple subordinate-group identities. *Sex Roles.* 59, 377–391. doi: 10.1007/s11199-008-9424-4

Purdie-Vaughns, V., Steele, C. M., Davies, P. G., Ditlmann, R., and Crosby, J. R. (2008). Social identity contingencies: how diversity cues signal threat or safety for African Americans in mainstream institutions. *J. Pers. Soc. Psychol.* 94, 615–630. doi: 10.1037/0022-3514.94.4.615

Purdie-Vaughns, V., and Walton, G. M. (2011). "Is multiculturalism bad for African Americans? Redefining inclusion through the lens of identity safety," in *Moving Beyond Prejudice Reduction: Pathways to Positive Intergroup Relations,* eds, L. R. Tropp and R. K. Mallett. (Washington, DC: American Psychological Association), 159–177.

Rattan, A., and Ambady, N. (2013). Diversity ideologies and intergroup relations: an examination of colorblindness and multiculturalism. *Eur. J. Soc. Psychol.* 43, 12–21. doi: 10.1002/ejsp.1892

Rosch, E., and Lloyd, B. B. (Eds.) (1978). *Cognition and Categorization*. Vol. 1. Hillsdale, NJ: Lawrence Erlbaum Associates.

Rosenthal, L., and Levy, S. R. (2010). The colorblind, multicultural, and polycultural ideological approaches to improving intergroup attitudes and relations. *Soc. Issues Policy Rev.* 4, 215–246. doi: 10.1111/j.1751-2409.2010.01022.x

Rosenthal, L., and Levy, S. R. (2012). The relation between polyculturalism and intergroup attitudes among racially and ethnically diverse adults. *Cult. Divers. Ethnic Minor. Psychol.* 18, 1–16. doi: 10.1037/a0026490

Rosenthal, L., and Levy, S. R. (2016). Endorsement of polyculturalism predicts increased positive intergroup contact and friendship across the beginning of college. *J. Social Issues* 72, 472–488. doi: 10.1111/josi.12177

Rosenthal, L., Levy, S. R., and Militano, M. (2014). Polyculturalism and sexist attitudes: Believing cultures are dynamic relates to lower sexism. *Psychol. Wom. Q.* 38, 519–534. doi: 10.1177/0361684313510152

Ryan, C. S., Casas, J. F., and Thompson, B. K. (2010). Interethnic ideology, intergroup perceptions, and cultural orientation. *J. Soc. Issues* 66, 29–44. doi: 10.1111/j.1540-4560.2009.01631.x

Ryan, C. S., Hunt, J. S., Weible, J. A., Peterson, C. R., and Casas, J. F. (2007). Multicultural and colorblind ideology, stereotypes, and ethnocentrism among Black and White Americans. *Group Proc. Interg. Rel.* 10, 617–637. doi: 10.1177/1368430207084105

Saguy, T., Tausch, N., Dovidio, J. F., and Pratto, F. (2009). The irony of harmony: intergroup contact can produce false expectations for equality. *Psychol. Sci..* 20, 114–121. doi: 10.1111/j.1467-9280.2008.02261.x

Sasaki, S. J., and Vorauer, J. D. (2013). Ignoring versus exploring differences between groups: Effects of salient color-blindness and multiculturalism on intergroup attitudes and behavior. *Soc. Pers. Psychol. Compass.* 7, 246–259. doi: 10.1111/spc3.12021

Schein, E. (1992). *Organizational Culture and Leadership*. San Francisco, CA: Jossey-Bass.

Schofield, J. W. (2001). "The colorblind perspective in school: causes and consequences," in *Multicultural Education. Issues and Perspectives,* eds J. A. Banks and C. A. McGeeBanks. (New York, NY: Wiley), 247–267.

Shnabel, N., Bar-Anan, Y., Kende, A., Bareket, O., and Lazar, Y. (2016). Help to perpetuate traditional gender roles: Benevolent sexism increases engagement in dependency-oriented cross-gender helping. *J. Pers. Soc. Psychol.* 110, 55–75. doi: 10.1037/pspi0000037

Siy, J. O., and Cheryan, S. (2013). When compliments fail to flatter: American individualism and responses to positive stereotypes. *J. Pers. Soc. Psychol.* 104, 87–102 doi: 10.1037/a0030183

Stevens, F. G., Plaut, V. C., and Sanchez-Burks, J. (2008). Unlocking the benefits of diversity: All- inclusive multiculturalism and positive organizational change. *J. Appl. Behav. Sci.* 44, 116–133. doi: 10.1177/0021886308314460

Sue, D. W., Capodilupo, C. M., Torino, G. C., Bucceri, J. M., Holder, A., Nadal, K. L., et al. (2007). Racial micro-aggressions in everyday life: implications for clinical practice. *Am. Psychol.* 62, 271–286. doi: 10.1037/0003-066X.62.4.271

Todd, A. R., and Galinsky, A. D. (2012). The reciprocal link between multiculturalism and perspective-taking: how ideological and self-regulatory approaches to managing diversity reinforce each other. *J. Exp. Soc. Psychol.* 48, 1394–1398. doi: 10.1016/j.jesp.2012.07.007

Van Knippenberg, D., De Dreu, C. K. W., and Homan, A. C. (2004). Work group diversity and group performance: an integrative model and research agenda. *J. Appl. Psychol.* 89, 1008–1022. doi: 10.1037/0021-9010.89.6.1008

Van Laar, C., Derks, B., and Ellemers, N. (2013). Motivation for education and work in young Muslim women: the importance of value for ingroup domains. *Basic Appl. Soc. Psychol.* 35, 64–74. doi: 10.1080/01973533.2012.746609

Verkuyten, M. (2005). Ethnic group identification and group evaluation among minority and majority groups: testing the multiculturalism hypothesis. *J. Pers. Soc. Psychol.* 88, 121–138. doi: 10.1037/0022-3514.88.1.121

Verkuyten, M. (2009). Self-esteem and multiculturalism: an examination among ethnic minority and majority groups in the Netherlands. *J. Res. Pers.* 43, 419–427. doi: 10.1016/j.jrp.2009.01.013

Verkuyten, M. (2010). Assimilation ideology and situational well-being among ethnic minority members. *J. Exp. Soc. Psychol.* 46, 269–275. doi: 10.1016/j.jesp.2009.11.007

Vescio, T. K., Gervais, S. J., Snyder, M., and Hoover, A. (2005). Power and the creation of patronizing environments: the stereotype-based behaviours or the powerful and their effects on female performance in masculine domains. *J. Pers. Soc. Psychol.* 88, 658–672. doi: 10.1037/0022-3514.88.4.658

Vorauer, J. D., Gagnon, A., and Sasaki, S. J. (2009). Salient intergroup ideology and intergroup interaction. *Psychol. Sci.* 20, 838–845. doi: 10.1111/j.1467-9280.2009.02369.x

Wilder, D. A. (1984). Prediction of belief homogeneity and similarity following social categorization. *Br. J. Soc. Psychol.* 23, 323–333 doi: 10.1111/j.2044-8309.1984.tb00648.x

Wilton, L. S., Apfelbaum, E. P., and Good, J. J. (2018). Valuing differences and reinforcing them: multiculturalism increases race essentialism. *Soc. Psychol. Pers. Sci.* doi: 10.1177/1948550618780728

Wilton, L. S., Good, J. J., Moss-Racusin, C. A., and Sanchez, D. T. (2015). Communicating more than diversity: The effect of institutional diversity statements on expectations and performance as a function of race and gender. *Cult. Div. Ethnic Min. Psychol.* 21, 315–325. doi: 10.1037/a0037883

Wolsko, C., Park, B., and Judd, C. M. (2006). Considering the tower of Babel: Correlates of assimilation and multiculturalism among ethnic minority and majority groups in the United States. *Soc. Just. Res.* 19, 277–306. doi: 10.1007/s11211-006-0014-8

Wolsko, C., Park, B., Judd, C. M., and Wittenbrink, B. (2000). Framing interethnic ideology: E?ects of multicultural and color-blind perspectives on judgments of groups and individuals. *J. Pers. Soc. Psychol.* 78, 635–654. doi: 10.1037/0022-3514.78.4.635

Wong, P., Lai, C. F., Nagasawa, R., and Lin, T. (1998). Asian Americans as a model minority: Self-perceptions and perceptions by other racial groups. *Sociol. Pers.* 41, 95–118. doi: 10.2307/1389355

Zou, L., and Cheryan, S. (2015). When whites' attempts to be multicultural backfire in intergroup interactions. *Soc. Pers. Psychol. Compass* 9, 581–592. doi: 10.1111/spc3.12203

Conflict of Interest Statement: The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

frontiers in Psychology

ORIGINAL RESEARCH
published: 27 February 2019
doi: 10.3389/fpsyg.2019.00320

"It's Not Always Possible to Live Your Life Openly or Honestly in the Same Way" – Workplace Inclusion of Lesbian and Gay Humanitarian Aid Workers in Doctors Without Borders

Julian M. Rengers[1], Liesbet Heyse[1], Sabine Otten[2] and Rafael P. M. Wittek[1]*

[1] Department of Sociology, University of Groningen, Groningen, Netherlands, [2] Department of Social Psychology, University of Groningen, Groningen, Netherlands

OPEN ACCESS

Edited by:
Michelle K. Ryan,
University of Exeter, United Kingdom

Reviewed by:
Victor Eduardo Sojo,
The University of Melbourne, Australia
Catherine S. Daus,
Southern Illinois University Edwardsville, United States

****Correspondence:***
Julian M. Rengers
j.m.rengers@rug.nl

Specialty section:
This article was submitted to Organizational Psychology, a section of the journal Frontiers in Psychology

Received: *28 August 2018*
Accepted: *01 February 2019*
Published: *27 February 2019*

Citation:
Rengers JM, Heyse L, Otten S and Wittek RPM (2019) "It's Not Always Possible to Live Your Life Openly or Honestly in the Same Way" – Workplace Inclusion of Lesbian and Gay Humanitarian Aid Workers in Doctors Without Borders. Front. Psychol. 10:320. doi: 10.3389/fpsyg.2019.00320

In this exploratory study, we present findings from semi-structured interviews with 11 self-identified lesbian and gay (LG) humanitarian aid workers of Doctors without Borders (MSF). We investigate their perceptions of workplace inclusion in terms of perceived satisfaction of their needs for authenticity and belonging within two organizational settings, namely office and field. Through our combined deductive and inductive approach, based on grounded theory, we find that perceptions of their colleagues' and supervisors' attitudes and behaviors, as well as organizational inclusiveness practices play a role in LGs' perceived authenticity, but not belonging, in the workplace. However, these organization-level characteristics do not account for between-participant differences in perceived authenticity. Therefore, we inductively construct a typology of three groups, which we coined *conscious first-missioners*, *authentic realists*, and *idealistic activists*, based on how LG humanitarian aid workers assess and deal with not being able to be their authentic selves when they are in the field, because homosexuality is illegal in many project countries. Conscious first-missioners are separated from the other two groups based on having gone to the field once, whereby they felt in control over the decision on how to manage their sexuality. Alternatively, authentic realists and idealistic activists alike felt they did not really have a choice in how to manage their sexuality, but handled that differently. We find the importance of one's sexuality as well as adherence to the overarching organizational mission relevant individual-level factors herein. Furthermore, we find disclosure of sexual identity to be strongly context-dependent, as participants are 'out of the closet' in the office, but go back into the closet when they enter the field, with different country contexts even leading to different decisions concerning self-disclosure, thus demonstrating the importance of careful sexual identity management. This so-called disclosure dilemma, we find, may not be merely an individual choice, but rather

a shared dilemma involving multiple stakeholders, such as the organization and fellow team members. We discuss the findings' contributions to existing literature on LGs' workplace experiences and implications for future research on inclusion of sexual and other invisible minorities in the workplace.

Keywords: workplace inequality, workplace inclusion, lesbian, gay, semi-structured interviews, humanitarian aid

INTRODUCTION

Many lesbian women and gay men (LGs) across the globe work in legal and sociocultural contexts where their sexual orientation is illegal or rejected, including international LGs originating from Western countries. How does this latter group of employees, coming from an environment that is relatively 'friendly' toward sexual minorities, experience working in contexts where their sexual orientation can be a threat, and where they cannot be who they are? More specifically, how may this play a role in their workplace inclusion, i.e., individuals' perceived satisfaction of their needs for belonging and authenticity in the workplace (Shore et al., 2011; Jansen et al., 2014)? Through this study, we aim to provide insights into these issues, by conducting semi-structured interviews with 11 self-identified LGs of Médecins Sans Frontières (MSF), one of the world's leading international non-governmental organizations specialized in the provision of (emergency) humanitarian aid.

Background

Recently, a number of countries, including most EU countries, Canada, Australia, and several US states, have adopted laws that serve to protect the workplace rights of LGs, thereby formally prohibiting employment discrimination based on sexual orientation (e.g., Colgan and McKearney, 2012; Ozeren, 2014). This development aligns with recent surveys that demonstrate generally more positive global attitudes toward Sexual and Gender Minorities (SGM; e.g., PEW Research Center, 2013; ILGA, 2016). For example, a recent large-scale worldwide survey indicated that 67% of nearly 100,000 respondents agreed that everyone should have the same human rights, regardless of sexual orientation or gender identity (ILGA, 2016). These numbers, however, do not tell the full story.

Although the situation for LGs in many Western societies has indeed improved in recent times (e.g., Colgan and Wright, 2011), the workplace remains a context in which sexual minorities run the risk of being targeted by unfair treatment, discrimination, and social exclusion (Ng and Rumens, 2017; Webster et al., 2017). This is even more so the case in many other national contexts, as LGs around the globe still face dangerous contexts because of their sexual identity. In 72 countries worldwide, homosexuality, that being sexual contact between people of the same sex, is criminalized (ILGA, 2017). Legal punishments include imprisonment, ranging from 1 month up to life sentence, and the death penalty, which is currently enforced in eight countries.

MSF offers a unique opportunity to study the dynamics of workplace inclusion of LGs working in both relatively tolerant and risky environments, for two reasons. First, international humanitarian aid staff works alternately in *office* settings in Western countries, in which Sexual and Gender Diversity (SGD) is legally protected and generally relatively accepted, and in *field* settings in project countries, in which SGD is oftentimes illegal or socially unacceptable (PEW Research Center, 2013). This creates a peculiar dynamic for LGs, since the extent to which they can disclose their sexual identity, and thus be true to themselves, is likely to be highly context-dependent. Second, the humanitarian aid sector is known for its high volatility, stress-inducing workload, and poor work-life balance (Eriksson et al., 2009; Visser et al., 2016). In such a work environment, it might be even more difficult to deal with being LG, which is an example of an invisible stigmatized identity (e.g., Ellemers and Barreto, 2006), and therefore requires careful identity management (Button, 2004).

The present exploratory study aims to contribute to the currently underdeveloped research on LGs' workplace inclusion, by investigating humanitarian aid workers in different organizational settings (i.e., office and field). Two research questions will be answered:

> *(1) How do lesbian and gay (LG) humanitarian aid staff members experience that their sexual orientation plays a role in their daily work in the office and the field?*
>
> *(2) Which factors play a role in LG humanitarian aid staff members' perceptions of workplace inclusion in both office and field?*

Workplace Inclusion of LGs and the Importance of the Disclosure Dilemma

We define workplace inclusion as the individual's perception of a specific group (e.g., the organization) providing him or her with the satisfaction of the fundamental human needs for belonging and authenticity (Jansen et al., 2014; see also Shore et al., 2011).

The need for belonging is an individual's need to create and sustain stable relationships with others (e.g., Baumeister and Leary, 1995). Individuals fulfill this need by having recurring and positive interactions with others in a group. The need for authenticity is an individual's need to stay true to oneself (e.g., Kernis and Goldman, 2006). This need emphasizes that group members are allowed to be different from, but also similar to other group members, as long as they are able to remain true to who they are (Jansen et al., 2014). Inclusion is different from social identification, which focuses on the processes through which the individual appreciates and connects with the group. In contrast, inclusion focuses on the signs through which the group indicates how much it wants to include the individual (Ellemers and Jetten, 2013). That is, in our definition of inclusion,

the individual is the *target* and the group is the *source* of inclusion (cf. Jansen et al., 2014).

For LGs, perceptions of workplace inclusion are likely to be influenced by the disclosure dilemma (Griffith and Hebl, 2002). This encompasses a range of strategic decisions on whether, how, when, and to whom to disclose one's invisible stigma in the workplace (Ragins and Cornwell, 2001; Clair et al., 2005; Ragins et al., 2007). A stigma consists of (one or more) characteristics that, in certain social contexts, are assessed as undesired or devalued (e.g., being LG), thus conveying a negatively evaluated social identity (Goffman, 1963; Crocker et al., 1998). Stigmas can either be visible (e.g., being overweight, being in a wheelchair) or invisible (e.g., being LG, having a mental disorder). One of the major dimensions distinguishing visible from invisible stigmas is the option to conceal the stigma. That is, whereas people carrying a visible stigma engage in *impression* management strategies, aimed at influencing others' perceptions of the self (Goffman, 1959), people carrying an invisible stigma engage in *information* management strategies, aimed at optimally balancing potential positive (e.g., receiving social support) and negative (e.g., discrimination) outcomes of revealing the stigma (Pachankis, 2007). Indeed, disclosure of an invisible stigma is an extremely complicated phenomenon, characterized by potentially generating both benefit and harm (Chaudoir and Fisher, 2010; Spiegel et al., 2016).

For these reasons, the disclosure dilemma has been coined one of the most difficult career decisions that LGs face at the workplace (e.g., Croteau, 1996; Button, 2001). Disclosing may, under certain conditions, lead to a range of negative consequences, including ostracism, harassment, and even losing one's job (Clair et al., 2005). Disclosure of an invisible stigma is not an 'all-or-nothing' phenomenon (Ragins and Cornwell, 2001; Ragins et al., 2007). Rather, it is a dynamic, continuous process of (re)negotiating of how to manage one's invisible stigma in accordance with situational requirements (King et al., 2017), as employees may manage their stigma differently in various situations, and involving various interaction partners (Jones and King, 2014). This means that disclosure of, e.g. one's sexual identity is highly context-dependent: whereas one might have fully disclosed in a specific context (e.g., to all close friends) and only partially in another context (e.g., only to one's supervisor at work). Such "identity disconnects" (Ragins, 2008) have been proposed to lead to psychological incongruence, anxiety, and stress, as one is particularly vulnerable to disclosure by third parties, and thus faces continuous uncertainty with regard to who knows and who does not (Ragins, 2004, 2008).

The contextual dependence of disclosure is especially relevant for our study. LGs may face a double-edged sword with regard to self-disclosure (Chrobot-Mason et al., 2001; Griffith and Hebl, 2002): on the one hand, choosing to disclose in a particular context might lead to being discriminated against, which might lead to social exclusion. This, subsequently, might harm satisfaction of the need for belonging. On the other hand, *not* disclosing in a particular context may lead to psychological distress, due to not being able to satisfy one's need for authenticity (Clair et al., 2005; Ragins et al., 2007). Therefore, satisfaction of one or both needs that make up inclusion might be thwarted, to the extent that a level of workplace inclusion, comparable to that of their heterosexual colleagues, may become unattainable for LGs. These dynamics may be even more pronounced in the case of international humanitarian aid work, part of which taking place in countries where SGD is illegal or socially unacceptable, and where disclosure might have potentially endangering consequences. This dependence on context may make the disclosure dilemma, with its accompanying state of anxiety and stress, even more poignant.

Contextual Characteristics of LGs' Workplace Inclusion

The organizational context may facilitate the disclosure dilemma for LGs, and therefore improve their workplace experiences. In line with Shore et al.'s (2011) conceptual model, we approach the organizational environment as consisting of multiple interrelated components, each providing indications to LG employees concerning their inclusion status (i.e., to what extent their needs for belonging and authenticity are satisfied), which, subsequently, shapes their perceptions of workplace inclusion.

Important components of the organizational environment include colleagues' and supervisors' positive attitudes and behaviors toward LGs, as well as LG-supportive organizational policies (Griffith and Hebl, 2002; Colgan et al., 2007; Ragins et al., 2007). If LGs perceive that their supervisor and co-workers treat them the same way they treat others, LGs may feel their need for authenticity increasingly satisfied. Likewise, their need for belonging might increasingly be fulfilled; such instances might lead to LG staff more positively valuing the bond with their managers and co-workers. Moreover, general human resource policies as well as LG-specific policies may positively contribute to LGs' perceived inclusion. These include access to critical work-related information and participation in decision-making processes to all employees (Mor Barak and Cherin, 1998; Nishii, 2013), facilitation of open communication (Janssens and Zanoni, 2008), the presence of conflict resolution procedures (Roberson, 2006), and ideologies stressing the benefit of diversity (Jansen et al., 2016). For example, by facilitating open communication within the organization, interpersonal relationships between individuals might strengthen, thus improving perceptions of belonging. Similarly, active participation in decision-making processes might enhance individuals' perceptions of authenticity, as they are asked for their contributions, based on their expertise and abilities (Nembhard and Edmondson, 2006). LG-specific policies include the establishment of a support network, sponsorship of LG-related events, or implementation of diversity trainings (e.g., Colgan et al., 2007), and are generally also expected to contribute to satisfaction of LGs' needs for authenticity and belonging, and thus their perceived workplace inclusion (Jansen et al., 2014).

Present Study

We assess how LG humanitarian aid workers perceive and experience their (1) *colleagues' attitudes and behaviors*, (2) *supervisors' attitudes and behaviors*, and (3) *organization's inclusiveness policies* toward SGD, in which way these

characteristics may shape sexual identity disclosure, and how these might relate to perceived workplace inclusion (i.e., satisfaction of the needs for belonging and authenticity). We will refer to these three elements as *organization-level characteristics*.

This study contributes to current literature in two substantive ways. First, by pinpointing the elements that contribute to or endanger LGs' perceived authenticity and belonging, it expands existing knowledge on workplace *inclusion* of LGs, which has so far received little attention in academic literature (Ozeren, 2014; Lloren and Parini, 2016; however, see Colgan et al., 2007). Second, by explicitly focusing on employees working in contexts that substantially differ in the extent to which they have to conceal their sexuality, it enriches our knowledge on workplace *experiences* of LGs. Until now, the few studies focusing on workplace inclusion of LGs were conducted in offices (see for examples Colgan et al., 2007; Priola et al., 2014; Lloren and Parini, 2016). Particular attention is paid to how workplace inclusion of LGs differs in either office or field, where the process of disclosure of an invisible stigmatized identity carries more weight.

MATERIALS AND METHODS

Study Setting

This study was conducted at MSF – Operational Center Amsterdam (MSF-OCA) in the Netherlands. MSF provides humanitarian assistance based on principles of neutrality and impartiality: quality medical care is provided to those who need it, regardless of race, religion or political affiliation (Médecins Sans Frontières, 2017). Examples of MSF's activities include providing immediate basic or more specialist medical care, educating on the importance of clean water and hygienic services, auditing projects, and arranging logistics of supplies and resources within the project country.

MSF-OCA is one of five operational centers (OCs), combining MSF-Holland, MSF-United Kingdom and MSF-Germany, and housed more than 250 office employees and sent out 780 international staff members to projects in 28 countries around the world in 2016 (Médecins Sans Frontières, 2018). Humanitarian aid professionals working in a country from which they do not originate are from here on referred to as *international staff*. Examples of international staff positions are project manager, logistician, surgeon, and midwife. When employees are sent on a mission (i.e., goes into the field), they go together with other international staff members[1]. Missions on average last between 3 to 12 months, which leads to constantly changing team compositions. OCA carries responsibilities concerning the coordination of these projects, in which international staff works to provide (emergency) humanitarian aid to populations in distress, such as victims of natural or man-made disasters and victims of armed conflict, together with national staff. National staff is locally hired staff from the project country, who make up about 90% of MSF's employees, and who can occupy positions such as nurse, doctor, engineer, and driver. In the field, international staff often lives together in international staff houses, sometimes even on guarded compounds, and tends to be separated from national staff during off-work hours.

Most employees working in one of MSF's OCs originate from Western countries, where societal acceptance and legal rights of LGs tend to be quite well established (ILGA, 2017). To illustrate: on average, more secular and affluent countries show a tendency toward being relatively more accepting of homosexuality, with 87% of Germans, 80% of Canadians, and 60% of Americans thinking that society should accept homosexuality (PEW Research Center, 2013). Simultaneously, this study found that respondents from Africa and countries that were predominantly Muslim were least accepting of homosexuality (PEW Research Center, 2013). At least nine-in-ten respondents in several sub-Saharan countries (e.g., Nigeria), and around 85% of respondents in Pakistan and Malaysia thought that society should not accept homosexuality. As these numbers show, *on average*, international LG humanitarian aid workers' home countries, even though there is still considerable variation, are more supportive of LGs than project countries. During the time of interviewing, MSF-OCA had ongoing projects in Nigeria, Malaysia, and Pakistan (Médecins Sans Frontières, 2017). In these, and several other countries in which participants have worked (e.g., Afghanistan, Ethiopia, Libya, Syria, Uzbekistan[2]), homosexuality is illegal and punishable. To exemplify: in Ethiopia, Malaysia, and Nigeria, same-sex individuals may receive up to life sentence in prison, and in Libya, Nigeria, Syria, and Uzbekistan, a prison sentence up to 14 years may be enforced (ILGA, 2017). Compared to an office setting, team dynamics are therefore thoroughly adapted in the field, as LG humanitarian aid workers' decisions regarding how to handle their sexuality might have implications for themselves, their co-workers, and the organization at large, something we will discuss in detail in the results section.

Before international staff leaves for a mission, they are briefed by OCA to facilitate the transition to the field. During such briefings, MSF provides the material necessary to fulfill their job as well as possible once they are in the field. Such briefings include information on country profiles, project descriptions, the established security framework (i.e., how MSF staff is kept safe), and ways to behave appropriately in that particular country's social setting. However, whereas these briefings provide information on different types of potentially vulnerable groups (e.g., women, certain ethnicities, and religions), so far no insights on the legal or social status of SGM-populations are provided, as became apparent throughout interviews with our participants.

Participants

Participants in this study were 11 MSF-OCA employees, seven of whom self-identified as female and lesbian, and four of whom identified as male and gay. At the time of interviewing, five participants were married, four were in a long-term relationship with their current partner, and two were single. Of these participants, most were raised in a Western country, and almost

[1]Most often, international staff members originate from Westernized countries, such as Western European countries, Canada, United States, or Australia. However, several participants noticed a recent tendency to hire more international staff members from countries that traditionally have been the target of their work.

[2]A full list of project countries in which MSF-OCA is at work can be found at https://www.artsenzondergrenzen.nl/projecten.

all of them were Caucasian; the participant who was not, was of Asian origin. Age ranged from 34 to 66 ($\bar{x}$ = 45.4; SD = 9.5). Most participants were currently mainly stationed in an office, but had experience in the field; two participants only had field experience. Jobs of participants ranged from higher organizational positions, for example during missions in the field, to intermediate positions, mostly working at OCA (e.g., in the HR or Finance department) and occasionally going on a mission.

Participants were recruited through the so-called 'gatekeeper strategy' (Hennink et al., 2011): Someone within the study community helped establish initial contact between researchers and participant. The Rainbow Network, MSF's staff-run SGM support network, had a good overview of LG staff in MSF-OCA, as the result of a recent survey on SGM-inclusiveness within MSF. Therefore, their representatives were able to provide invaluable information concerning potential participants.

Given the exploratory nature of the study, the aim in participant recruitment was to find commonalities and differences across a range of participants (Hennink et al., 2011), in a first attempt to answer the research questions (also known as maximum variation sampling; Patton, 2001). A diverse range of employees was purposefully sought for, preferably differing on three dimensions: gender, nationality, and organizational tenure at MSF. Additionally, a requirement was that employees were currently not on a mission for OCA, but had been within the past 6 months; this way, we avoided that our study might have interfered directly with their activities. This also means that, during interviewing, all participants were under contract at OCA. However, not all experiences described took place during their tenure at OCA, due to the highly volatile nature of the job and relatively short contract periods at OCs. Moreover, participants were recruited both from within and outside the Rainbow Network. The participants in this study were recruited in such a way that their anonymity and confidentiality was safeguarded to the largest extent possible.

Data Collection Procedure

Semi-structured in-depth interviews were conducted, for two main reasons. First, because of the sensitivity of the topic, building rapport between interviewer and interviewee was pivotal, and second, we were interested in participants' individual stories and lived experiences. We considered qualitative (interview) methods appropriate in satisfying both criteria (Hennink et al., 2011). Semi-structured interviews provided the participant with the freedom to add other themes that were not part of the interview guide, thus enabling us to gain insights from our data collection and analysis inductively (Hennink et al., 2011; see also *Data Analysis* below). Furthermore, interviewees had the liberty to address topics in their own preferred order, whilst the interviewer still had the tools to guide the conversation back into a direction that allowed answering the research questions.

We derived the key questions of this study from existing literature on LGs' workplace experiences (e.g., Colgan et al., 2007; Lloren and Parini, 2016) and the disclosure dilemma (e.g., Chaudoir and Fisher, 2010; Jones and King, 2014), as well as from literature on (antecedents of) inclusion, measured as the perceived satisfaction of the needs for belonging and authenticity (Shore et al., 2011; Jansen et al., 2014). Additionally, we added questions that we deemed relevant given the organizational setting, inquiring about e.g. safety issues and organizational support for SGM-employees in the field. Our operationalizations of the core concepts are added as **Supplementary Materials**.

The semi-structured interview guide was set up as follows: In the introduction, research aims and ethical issues were explained, and informed consent was obtained. Subsequently, introductory questions about the participant's background served to collect personal information, as well as build rapport (Hennink et al., 2011). Opening questions followed, about participants' organizational career at MSF, tenure, motivation, activities, and general work experiences at the organization, and key questions, crucial for answering the research questions (Hennink et al., 2011), ensued. These centered on contact with co-workers and supervisors, and experiences during which participants did (not) feel a member of the organization, the latter serving as a proxy to address satisfaction of the need for belonging. Questions on safety concerns ensued, followed by an in-depth focus on participants' sexual identity. More specifically, we asked how open interviewees were in the workplace, the motivations underlying that, instances during which they felt that their sexuality (positively or negatively) affected their job and work experiences, and their involvement with the SGM-community (Rainbow Network) within MSF. These questions approximate participants' satisfaction of their need for authenticity. Afterward, participants were invited to share their views on what the role of the organization *is*, and what it *should be*, in facilitating SGM-employees, within office and field. To conclude the interview, two closing questions were asked, in order to dissolve rapport, and end on a 'lighter' topic (Hennink et al., 2011). The interview guide was added as **Supplementary Material**, and more detailed information regarding data collection and the first author's personal reflections are available on request.

All interviews were conducted in English or Dutch (the first author's native language); three interviews took place face-to-face, and eight via Skype (due to geographical distance). The first author served as the only interviewer in this project. Interviews were audio recorded with participant consent, after which verbatim transcripts were made. Most information remained confidential between interviewer and interviewee; direct quotations were only published after the participant's explicit approval. Complete anonymity of participants was guaranteed by removing all identifiable information (e.g., age, nationality, mission countries) from the transcripts; only the first author knows the participants' identities. At the participant's request or the first author's judgment, counseling, provided by MSF-OCA's psychosocial care unit (PSCU), was offered after participation; this was never deemed necessary by either party. All participants and the interviewer signed an informed consent form, which also contained the PSCU's contact information, prior to starting each interview. This study was carried out in accordance with the recommendations of the Code of Ethics made by the American Sociological Association. The protocol was approved by the Ethics Committee of Sociology of the University of Groningen.

All subjects gave written informed consent in accordance with the Declaration of Helsinki.

Data Analysis

Grounded theory (Corbin and Strauss, 2008) guided data analysis, combining an inductive and a deductive approach (Hennink et al., 2011). Based on our conceptual model, the first author developed a deductive codebook, containing 41 codes, which was then discussed extensively with the second author. The subsequent analytical process can be described as a predominantly iterative, cyclical process of theoretical reflection, data collection and data analysis, which means that we were open to inductive insights gained during data collection and analysis (Hennink et al., 2011). Data were coded inductively through descriptive coding (Saldaña, 2009), meaning that the main topic of a certain fragment of the interview was summarized in one word. The first author developed 52 inductive codes, identifying new themes and topics emerging from the data, leading to a final codebook containing 93 codes. The second author then independently crosschecked a portion (n = 4) of the interviews using that codebook, to examine consistency in coding across interviews, and to guarantee some form of interrater reliability. Afterward, first and second author discussed the coded interviews, based on which coding was refined. The transcripts were analyzed with the help of the qualitative data analysis software program Atlas.ti 7 (Friese, 2013). The codebook is available as **Supplementary Material**.

Data analysis continued by placing the deductive and inductive codes that shared a common attribute into the same overarching categories (i.e., categorization, Hennink et al., 2011, p. 246) which allowed us to obtain a better conceptual understanding of our data (see Hennink et al., 2011). More specifically, we created several overarching categories consisting of multiple subcategories. An example is the category 'inclusiveness practices.' Subcategories herein are 'diversity,' 'equality,' 'initiatives,' 'policy,' and 'organizational support.' These categories and subcategories are provided as **Supplementary Materials**. This categorization allowed us to create multiple groups based on the way participants spoke of their perceived authenticity, and it helped establish the underlying phenomena shaping these perceptions (i.e., comparison; see Hennink et al., 2011, p. 243). Additionally, we constructed so-called thick descriptions (Hennink et al., 2011, p. 238) of our main variables of interest (i.e., authenticity and belonging), providing the multiple dimensions of which participants spoke in addressing these variables. Examples for authenticity include 'being able to share personal stories,' and 'seeing it as their human right to be open.' Examples for belonging include 'always a member,' and 'all together.' These thick descriptions are added as **Supplementary Materials**.

After categorization and comparison, conceptualization proceeded with exploring the expected links between the individual elements within the data (Hennink et al., 2011, p. 247) by relating the findings to the deductively developed conceptual model. This process was mainly based on two strategies: looking for the 'big picture' in the data, and taking a step back to gain a broader overview of the issues, whilst simultaneously moving closer to the data, in order to examine certain details within the data, especially by comparing differences between individuals. An example is the analysis of how open participants were about their sexual identity in the field. In examining this, we looked at how this related to perceptions of workplace inclusion, and how it was embedded in existing organizational arrangements, thereby accounting for the 'big picture.' Simultaneously we looked for the specific details explained by our participants with regard to the reason(s) for how open they were, paying attention to differences between individuals (Hennink et al., 2011).

During the process of data collection and -analysis, the authors worked in accordance with the criteria necessary to ensure trustworthiness of a qualitative study, such as transferability (to assess to what extent findings are generalizable) and confirmability (to assess to what extent findings are based on the data, not the researcher's predispositions) (see Guba, 1981 in Shenton, 2004). More detailed information regarding the data analysis process is available on request.

RESULTS

Below, we first discuss participants' perceptions of *belonging*, and highlight aspects that create minor differences in the degree to which participants feel belonging to the organization. As we found little difference in participants' fulfillment of the need for belonging, we devote relatively little attention to this topic. Second, we describe participants' perceptions of *authenticity* in detail, since we found noticeable differences between office and field, as well as between participants. Third, we illustrate the inductively emerged *individual-level* factors related to variation in perceived authenticity between participants, as this variation was only *partially* related to the three *organization-level* characteristics we distinguish.

Description of the Belonging Dimension

Participants, almost unanimously, felt clearly that they belonged to MSF. As illustrated by one participant, who felt that "you're like the firefighter [. . .] you're called on a Saturday, you're called on a Sunday, you're called [. . .] at 1AM in bed. So, I think there's never a moment that I do not feel part of it." (M[3], 7½ years' experience in office and field). Another participant expressed that "MSF has very much a sort of family feel to it" (F, 3 years' experience in office and field).

MSF was lauded for its effectiveness in creating strong feelings of belonging, and thus of showing signs of employees' inclusion, for example through organizational artifacts such as t-shirts, training and welcome days, and the yearly general assembly meetings. These high levels of belonging were partially due to the inherent nature and work of the organization, as participants felt even more strongly belonging to the organization any time they were contributing to fulfilling MSF's organizational mission ('to preserve life, restore dignity, alleviate suffering, and protect people's ability to make their own choices').

[3]The gender with which the participant identifies, with F indicating female and M indicating male.

Nonetheless, two factors slightly hampered perceptions of belonging. The first was a lack of organizational tenure, which subsequently led to not having many social relationships within the organization. Within MSF, going into the field is a way of gaining status among peers, a notion voiced by multiple participants. As such, several of them recalled that, when they had just joined the organization, they still had to 'prove' themselves. As one participant explained, "MSF does tend to be quite suspicious of outsiders [. . .] so I think that's [. . .] the flip side of being a very close-knit community; it doesn't always want to let people in if you're not part of the club" (F, 3 years' experience in office and field).

Another factor decreasing belonging was rooted in the inability to share personal stories with co-workers, mainly in the field, where some participants felt they could not be completely open about themselves, especially about their sexual identity. One participant said, "I think primarily [. . .] it can be lonely. As everybody's talking about their family, and [. . .] I end up talking about my brothers and sisters instead, you know?" (F, 6 years' experience in the field).

In sum, all participants expressed strong feelings of belonging to MSF, primarily resulting from the nature of the organization and its humanitarian aid work. Factors hampering participants' perceived belonging were shorter organizational tenure and an inability to share personal stories due to one's (sexual) identity.

Description of the Authenticity Dimension

Whereas interviewees generally shared a strong sense of belonging, this was not the case for their perceived authenticity. This partly applied to their experiences in the office, but mostly to those in the field, where participants felt they could not always be themselves. Below, we first discuss perceptions of authenticity in the *office*, followed by a discussion of authenticity perceptions in the *field*. Herein, we recognize that the analytical distinction between office and field may be less clear-cut in real life, where support received by office co-workers may mitigate the negative consequences of being closeted in the field.

Authenticity in the Office

In the Amsterdam office, participants generally felt enabled and encouraged to be authentic, by colleagues and supervisors alike, and it was perceived as a pleasant work environment where participants could be themselves. Therefore, all participants were open about their sexual identity in the office. As an example, several participants recalled their colleagues', mostly neutral to positive, responses to the disclosure of their sexuality within the Amsterdam office, which they described as largely characterized by genuine interest in their family life. Participants mainly ascribed this to the general atmosphere in Amsterdam, and the Netherlands at large, which, compared to other countries, was seen as tolerant and open-minded toward sexual minorities. They did not seem very concerned about the disclosure dilemma: multiple participants mentioned not having had severe difficulties coming out to their colleagues and supervisors within the office.

They emphasized the diverse nature of the organization, especially in terms of cultural background of employees, which created the idea that participants could be open about their sexuality. One participant said: "I felt it was a very comfortable environment [. . .] to be out, which was great, and that was, you know, also a part of what made it feel very comfortable and a good experience to join the organization" (F, 3 years' experience in office and field).

Especially the Rainbow Network, established in 2016 in order to promote SGM-inclusivity within Amsterdam HQ and the other OCs, was perceived to be a safe haven by several participants. One participant sketched it as a place

> ". . . to support each other in those moments when [. . .] you do not feel part of the organization. And *all of us* know those moments, and it's just really nice to be able to talk about it, and that there's people who just *get it* [emphasis added]" (F, 3½ years' experience in office and field).

Despite the above, participants also voiced concerns about the boundaries of that generally supportive work environment. Some of them had heard negative comments about their own or others' sexual orientation: jokes, negative remarks, and sexual innuendos were made in the office (so-called microaggressions; cf. Sue, 2010). Some participants mentioned colleagues' efforts to set them up with 'the other gay person in the office,' simply because they were both homosexual. Another participant shared an example, of having to remarry her partner in different countries, given that their marriage in the Netherlands was not legally binding everywhere. Sharing this with her supervisor evoked the remark that "they must really love getting married." These examples illustrated a lack of awareness of some of the particular situations faced by SGM-workers.

A Rainbow Network questionnaire administered in 2016 further exemplified this paradoxical situation. In this questionnaire, MSF employees, both cisgender[4] and heterosexual, as well as SGM, were asked about experiences with homophobic, transphobic, and heterosexist comments within MSF. The questionnaire accumulated responses from almost 300 employees, of whom 62% witnessed derogatory language or inappropriate jokes when no openly SGM-individuals were present. Moreover, 35% of respondents had been present while such comments were made directly to SGM-employees[5] (M. Schoonheim, personal communication, September 30, 2016).

Several participants stated that MSF, as an organization, was still 'in the closet,' since issues concerning sexual orientation of employees have only recently started receiving attention. Participants ascribed this to the organization's very clear organizational mandate to deliver the highest quality humanitarian aid to those who are most in need, making everything not directly related to fulfilling this mandate of secondary importance. Another frequently mentioned argument was that some colleagues and supervisors believed that, given that they were situated in Amsterdam – one of the most gay-friendly

[4]Referring to people whose gender identity and expression matches their assigned sex at birth

[5]Generally, this demeanor was far more negative in the field. For example, one participant recalled that "of course, there's a lot of gay jokes [. . .] if you're a bit lame, they always call you 'ah, you're a gay, you can't lift that"' (M, 7½ years' experience in office and field).

capitals in the world - acceptance of sexual minorities had been fully achieved and did not need further improvement.

Taken together, participants' stories sketched a paradoxical situation within the Amsterdam office. Although they felt encouraged and enabled to be themselves, and believed the office generally provided a pleasant work environment, there were boundaries to the tolerance they experienced (cf. Buijs et al., 2011). This came to the fore in the form of jokes, derogatory remarks, and other microaggressions (Sue, 2010), a certain hesitation to discuss sexual orientation issues within the organization, and an experienced lack of organizational policies directed at SGM-issues. All these aspects combined gave participants the idea that there still was ample ground to gain within OCA.

Authenticity in the Field

In general, participants felt their need for authenticity far less fulfilled in the field, compared to the office. Participants all went 'back into the closet' when going on a mission. This decision was strongly rooted in perceived risks of being LG in many project countries. Such risks included the potential of disturbing team dynamics and the possibility of being outed by someone (i.e., when one's sexual orientation is involuntarily revealed to a third party). Due to these risks, participants needed to gauge their fellow international staff members on their viewpoints toward SGD, which was difficult, as there was a large degree of uncertainty. That is, participants did not know how their fellow international staff would react to their coming out. Several participants spoke of going into the field assuming that their teammates would be able to handle such information discretely, which they oftentimes did not find to be the case. Interestingly, they mainly ascribed this to the organization not clearly communicating what was expected of international staff members, as international staff members were not instructed about the boundaries of acceptable behavior among colleagues.

Participants thus had to decide very carefully whether, and, if so, to what extent, how, and to whom to disclose their sexual orientation within the international staff team. Here, it deserves mentioning that, throughout the interviews, participants did not speak of the disclosure dilemma concerning national staff or beneficiaries: None of the participants had come out to national staff members or beneficiaries, and no one was planning to do so in the future. Given this unanimity in our sample, we will therefore not discuss this aspect in further detail. The magnitude of the disclosure dilemma was therefore considerable, as illustrated by one of our participants, who said, "you're living together, working together, and you're totally reliant on each other. The team dynamic is everything. And you have something that alters the team dynamic" (F, 7 years' experience in office and field). This uncertainty with regard to sharing information about their sexuality within the international team was related to LGs' fear of being outed to national staff, which might have negative consequences in legal or social contexts where homosexuality is illegal.

These negative consequences of being outed can range from national staff no longer wanting to work together, to beneficiaries (i.e., the people receiving the aid provided by MSF) deciding they no longer want to be treated, since the organization may be perceived to support something as sinful and unnatural as homosexuality. If that were to happen, MSF might lose its entire "raison d'être" since providing support for beneficiaries is the organization's primary concern. More severely, being out or outed might affect MSF's position within the project country; its acceptance in local communities is paramount to doing their job, as one participant expressed: "We have to be able to retain our local operating position. And if the local moms or the local bishops decide that MSF is pursuing a queer rights agenda, it may become virtually impossible to safely stay there" (M, 12 years' experience in the field). Participants expressed a thorough understanding of the organization's difficult position in this respect.

Depending on the context, being outed may even lead to being taken out of the mission, to guarantee the individual's and their team members' safety (as they might be tried according to local laws). Given these strong associated risks, a pivotal role in LGs' dealing with identity management issues in the field could be played by their supervisor(s) in the field[6]. Currently, supervisors did not deal particularly well with participants' self-disclosure, as illustrated by one participant:

> "I told my project coordinator I had a wife, and he was European, he was like 'I don't care.' And I'm like 'I don't think you do, as a person. But as a manager, do you know how to manage the situation? Like, if something came up, and there was an issue within the team, would you know how to manage that within the context of the field situation?' [. . .] I don't think *he's* being trained on how to manage it (F, 6 years' experience in office and field)."

Given the perceived risks and potential consequences of being open about being LG, participants generally considered it better to go completely back into the closet. Interestingly, MSF regarded going back into the closet as the *only* feasible way to manage one's sexual identity in the field, as mentioned by several participants. That is, the organization's advice on handling being LG in the field was to 'don't ask, don't tell.'

Being back in the closet, however, was not always easy to sustain for participants. Considering they were able to be open about their sexuality within the Amsterdam office and their private lives, participants found it challenging to live a closeted life in the field, as one participant illustrated:

> "*Wherever* you go, in *any* project, *wherever* in the world, the first thing people ask is: 'Are you married?' Because in most cultures where we work, your marital status and your parental status, so having children, are the things over which you bond" (F, 3½ years' experience in office and field).

Many participants struggled with how to maintain this straight façade, especially during their first mission. Some of them recalled having had to make an instant decision as to how they were going to approach questions concerning their family life. An influential factor was the duration of the mission. As was

[6]Within the field, there are different supervisor roles. Examples include the field coordinator (in charge of implementation and daily management of the project), head of project (carrying final responsibility over a subproject within the mission), and head of mission (carrying final responsibility over the whole mission).

mentioned by multiple participants, it is easier to keep up the façade if one is in the field for a shorter period (e.g., 2 weeks) than when one is away for longer (e.g., 6 months). Another factor was participants' relationship status. Understandably, participants in a relationship experienced more difficulties regarding questions about their family life than single participants. For example, when they had a Skype conversation with their partner, they had to pretend their significant other to be a mere friend. Other participants who had children found it hard to deny their existence, as revealing this might have evoked further inquiries about their family life.

In sum, participants mentioned many difficulties to fulfill their need for authenticity, with regard to their sexuality, given local laws and social norms in project countries. In the majority of cases, they thoroughly compromised their authenticity, and they felt that MSF did not provide sufficient support to combine doing their job well with simultaneously managing their sexual identity. If the specific context made disclosure a highly risky endeavor and participants felt that disclosing could sincerely harm the team, the project, and the organization, they went back into the closet. Furthermore, participants sometimes did not trust their teammates and supervisors to deal well with potential disclosure, further strengthening the perceived necessity to live a closeted life in the field. Hence, contrary to what much literature assumes, we found that our participants spoke of disclosure as more strongly related to the potential risks within the particular *organizational* context, and less to negative *personal* consequences, such as running the risk of discrimination or social exclusion (e.g., Ng and Rumens, 2017; Webster et al., 2017).

Differences in Perceived Authenticity Between Participants

Next to the general patterns described above, we discovered variation in how participants responded to compromised authenticity. That is, although all participants mentioned lower satisfaction of their need for authenticity in the field, we found differences *between participants* in how they handled this. Differences were mostly rooted in the importance they attached to their sexual identity, combined with the salience of the organizational mission. Based on these differences, we inductively generated three groups of participants, which we labeled *conscious first missioners*, *authentic realists*, and *idealistic activists* (see **Table 1** and explanation below).

As already inherent in the label *conscious first missioners* (a commonly used term for MSF staff who go into the field for the first time), participants categorized in this group (n = 3) had, when the interview was taken, only been in the field once. They expressed the perceived choice they had with regard to self-disclosure. That is, they made a deliberate decision concerning the (non-)disclosure of their sexuality to others while they were in the field, which was less pronounced in interviews with the other participants.

The other eight participants, whose experience in the field ranged from having been on several missions to having over 100 months of field experience, showed substantial differences in perceived authenticity. We derived two more groups based on how these participants described *the relationship between their sexual orientation and the organization's mission*. Certain participants voiced an understanding to put their sexuality 'on hold' while they were in the field, whereas others saw it as their fundamental human right to be who they were, also in the field. We named the second group the *authentic realists* (n = 4), because they were accepting of the necessity to hide their sexual identity, whilst their perceived authenticity was relatively unblemished. Finally, we labeled the third group the *idealistic activists* (n = 4), because in their stories they delved into a more idealistic perspective of handling sexual orientation issues at MSF, and because they all actively advocated toward that aim.

Conscious First Missioners

Insights described by the conscious first missioners (n = 3) were especially relevant regarding their field experiences. They were relatively critical toward the organization for its lack of support of sexual minority employees. This may be the case because, compared to other participants, they may, due to their short tenure at MSF, have been more prone to mirror the sexual orientation policies of their previous employer with those of MSF.

The conscious first missioners can especially be set apart from the other two groups because they had only been in the field once, and they made a *deliberate* and *conscious* decision with regard to their (non-)disclosure. That is, whether they decided to go back into the closet or disclose their sexual orientation, they described feeling in control over that process, as they themselves were responsible. One participant phrased this as follows:

> "I just didn't want to kind of create a problem there. So I did kind of get back in the closet, I suppose, for that period of time. Which was a conscious decision that I felt I was happy with, because it wasn't so important for me to be out, if it was going to have a detrimental effect on [. . .] the team or the project work that we were doing (F, 3 years' experience in office and field)."

Making a conscious decision regarding (non-)disclosure might mean there was a sense of autonomy present among the conscious first missioners. Psychological theories of needs describe the importance of a sense of autonomy, as it is related to freedom, and thereby to positive individual functioning (e.g., Deci and Ryan, 2000). Having had the perception that they themselves were responsible for choosing to what extent they were being authentic to their sexual identity, conscious first missioners might have felt that – irrespective of having disclosed their sexual identity or not – their need for authenticity was not seriously compromised. This stood in stark contrast with how other participants, i.e., the idealistic activists, described the (non-)disclosure process: they more often felt forced by the organization to go back into the closet, thereby taking away that feeling of autonomy.

Authentic Realists

The authentic realists (n = 4) encountered relatively few problems with their sexuality. In general, they were less bothered by nasty

TABLE 1 | Characteristics of participants, participants' expressed belonging and authenticity, and group categorization.

Group	Defining individual characteristic	ID	Gender	Tenure	Belonging	Authenticity
Conscious first missioners	Degree of autonomy in	03	F	1 year	Low due to being new	Satisfactory
	deliberately and consciously	07	F	2 years	Very high, but low when new	Satisfactory
	managing the disclosure	10	F	3 years	High, but low when new	Comfortable
	dilemma					
Authentic realists	Strong adherence to the	04	M	7½ years	Very high	Satisfactory
	organizational mission paired	05	F	11½ years	High	Satisfactory
	with lower sexual identity	08	M	12 years	Very high	Satisfactory
	centrality to the self	11	M	6½ years	High	Comfortable
Idealistic activists	Contextual dependency of	01	M	12 years	Low due to poor support in field	Unsatisfactory
	self-disclosure in the field	02	F	3½ years	High	Unsatisfactory
	paired with relative importance	06	F	7 years	High	Mediocre
	of sexuality to the self	09	F	6 years	Low due to loneliness in field	Mediocre
Average				6½ years		

comments than the other participants were. An explanation for this might be found in what has been termed identity centrality or -importance (Settles, 2004). This refers to the idea that people fulfill multiple roles and are members of multiple groups, which together serve as sources of their identity. Each of an individual's identities may be of higher or lower importance to the individual. Indeed, all participants categorized into this group emphasized that they considered their sexuality as central to their self-concept to a limited extent only. The authentic realists downplayed the importance of their sexuality in the workplace, and instead emphasized their salient identity of a humanitarian aid worker. This resonates with theorizing along the lines of self-categorization theory (SCT; e.g., Turner et al., 1987), which proposes that a certain identity can become more or less salient, depending on the context.

In the field context, it was obvious that the authentic realists considered their sexual orientation as not important, meaning that this part of their identity was not salient at all when at work. Instead, their identity as a humanitarian aid worker was extremely salient within this context. This was strongly linked to their support for MSF's organizational mandate, to which they all referred. MSF, they asserted, should not be concerned with their employees' sexuality, as it did not directly contribute to fulfilling its mission. They did believe the organization held a certain duty of care to its SGM-employees, but, according to them, this should not be given priority on the organizational agenda. Instead, they believed that MSF has "bigger fish to catch," for example by providing aid to SGM national staff or beneficiaries.

The authentic realists were acutely aware of why they went into the field in the first place, which was to help those in need. They claimed they already knew this before they joined the organization, which made going back into the closet easier. Similar to the conscious first missioners, they did so voluntarily, as that was needed in order to work for MSF, and to do their job well. However, in contrast with conscious first missioners, authentic realists never spoke of any element of choice; they felt going back into the closet was the only viable way to deal with their sexuality in the field. One participant illustrated this, arguing that

> "This is a very fulfilling rewarding and challenging role, that I am proud to do, and that I want to do well. And part of that does simply mean saying 'Okay! I am not a sexual person right now. I am not a personal person right now!' And I don't mind that! I mean, I do think it's not necessarily psychologically easy. But I have found a balance that works well for me" (M, 12 years' experience in the field).

In sum, despite not being able to be one's authentic self, the participants categorized into this group were relatively accepting of the situation. They referred to the organizational mandate, and ascertained that issues surrounding sexual orientation were relatively unimportant within MSF. Moreover, they knew that, in order to work in the field, they had to conceal their sexuality, which they were willing to do.

Idealistic Activists

The idealistic activists (n = 4) were, comparatively, more critical with regard to sexual minority issues within MSF. They argued that MSF should be more explicit about the differential treatment of any minority group (not just sexual minorities), about which the organization was not very vocal. The office was the most suitable context for change, according to these participants. All four participants categorized into this group were actively contributing to such change, as they were advocating for more inclusivity toward minority groups within MSF.

They were frustrated about the lack of attention for sexual orientation issues within the organization. As an example of the absence of organizational policies tailored to protect the lives of sexual minority employees, participants repeatedly made a comparison with the extensive preparation and security briefings employees received before they went into the field. These briefings contained information on gender, ethnicity, nationality, and religion, for example in terms of the social norms and practices in a particular country, and how minorities might be regarded there. However, there was no specific attention to sexual orientation issues, which they found surprising and frustrating,

given the often very negative way that SGM are perceived in different field contexts.

When idealistic activists went into the field, they were comparatively less willing simply to conceal their sexuality, and to accept that they cannot show their true sexual identity solely because this would not be possible in the given legal or social context. In their explanations underlying this, they ascertained that their sexuality is inextricably part of who they are, and that they saw it as their human right to be open about who they were. As one of them said:

> "Some people, they closet themselves, they do their work, and they just ignore it. And that's certainly one way of coping, but it shouldn't have to be the only way to cope. You should have a choice in how authentic you are to yourself. Within safe parameters, with an employer who is aware and who can guide on how that might look in the field" (F, 7 years' experience in office and field).

With regard to having a choice in how authentic one is, two participants spoke of being outed in the field. This made them feel vulnerable, led to a breach of trust within the team, and required them to become even more vigilant. Such occurrences can also be linked to a deprived sense of autonomy (introduced above), because the element of choice in disclosing one's sexuality is removed, and may therefore contribute to a diminished satisfaction of one's authenticity need.

Participants in this group assumed that the organization currently had a particular mindset concerning how sexuality issues should be dealt with, namely of not wanting to impose "Westernized" norms and values, such as homosexuality, onto project countries. Therefore, the organization saw only one feasible way of dealing with homosexuality, which was to strongly urge LG staff to go back into the closet in the field. In these participants' opinions, the organization was hereby giving the signal that they did not want to delve into sexual orientation issues, simply because it might be a minefield.

Interestingly, all participants categorized into this group, as well as two of the conscious first missioners, mentioned the need to differentiate between contexts; that is, they believed disclosure should not always be considered an immediate threat to staff safety and organizational legitimacy. Instead, they urged the organization to consider contextual differences with regard to the extent to which disclosure of an LG identity should be possible, instead of the general 'don't ask, don't tell' advice currently given. This illustrated participants' recognition that disclosure is not always and everywhere possible, but that the extent to which it *is* possible was strongly dependent on the particular country context.

Idealistic activists believed that sexual orientation issues should be discussed within MSF, because it is a lived reality for a part of MSF's employees. One participant described this sentiment as follows:

> "I feel like they have their blinkers on when it comes to this, and I feel like it is always in the 'too hard basket.' Which is ironic, because MSF has never accepted a mission to be in the 'too hard basket.' They are *without borders* [emphasis added]! Don't tell them they can't go there, because they're going to go! And I think: 'why wouldn't you want to go here?'" (F, 7 years' experience in office and field).

In sum, idealistic activists were concerned with the organization not taking any stance on sexual orientation issues, which they found frustrating and disappointing. In making this claim, they referred to the organizational boundary of care, which should also include taking care of *all* employees, as well as to their fundamental human right to be who they were. They understood that the organization was in a difficult position in this respect, but believed that nevertheless changes could and should be made.

Taken together, in this section, we saw how participants spoke in different ways of how important their sexual identity was to them, and how much they perceived to be able to be authentic in the field. Participants' stories highlight the importance of *individual-level* differences in sexual identity management when trying to understand differences in perceived authenticity within the workplace. Through this inductively constructed typology, we received further insights into what could potentially contribute to variations in perceived authenticity.

DISCUSSION

Contributions

This study had two aims. First, it mapped LG humanitarian aid workers' experience how their sexual orientation plays a role in their daily work, both in an office and a field setting. Second, it identified organizational factors that may play a role in the perceptions of workplace inclusion among this vulnerable minority group. As a result, this study makes four main contributions.

First, our findings *corroborate* previous research on sexual minorities' workplace experiences. Participants experienced themselves, or witnessed someone else, being targeted by jokes, derogatory comments, or other types of micro-aggressions (Sue, 2010). This is in line with the well-established finding that SGM-employees still face subtle and not-so-subtle forms of discrimination in the workplace (e.g., Griffith and Hebl, 2002; Ozeren, 2014; McFadden, 2015). Accordingly, they treat the disclosure dilemma with caution, especially when in the field (e.g., Ragins and Cornwell, 2001; Griffith and Hebl, 2002; Clair et al., 2005; Ragins et al., 2007).

Second, we *extend* current research on workplace experiences of sexual minority employees by comparing an office to a field setting, thereby revealing an additional range of issues faced by this vulnerable group. Firstly, our data reveal that disclosure of sexual identity is highly dependent on the context of work. Whereas all participants chose to be open about their sexuality in the office, the opposite was true for the field. There, participants unanimously went back into the closet. Nevertheless, even within different field settings, participants mentioned different degrees to which they considered disclosure as possible, thereby further illustrating its high context-dependency. Secondly, team dynamics may be vital to the outcome of a mission. As disrupting these by disclosing one's

sexuality might lead to a breach of trust within the team, the importance of the disclosure dilemma increased considerably in the field. Thirdly, our findings also shed light on how LG workers manage their sexual identity to people outside of the organization. When they were in the field, deciding strategically how they would portray their sexuality (cf. Orne, 2011), became even more vital than in the office. This may not only affect the individual, but also their team and the organization at large, for example by affecting safety or organizational legitimacy. This issue is particularly prominent given the importance of family as a discussion topic within most of MSF's project countries.

Third, our findings also suggest extending the notion of an individual disclosure dilemma to that of a *shared* disclosure dilemma. Under specific conditions, the organization (here MSF) may have an interest in *not* enabling SGM-employees to disclose, thereby thwarting their opportunity to satisfy their need for authenticity. This is most likely in situations where disclosure might endanger the safety of specific LG employees, but also for MSF as a whole. Similarly, fellow international staff members in the field may also be stakeholders in this dilemma. For example, team dynamics may change once someone reveals their sexuality within the team, with potentially detrimental effects on fellow staff's ability to do their job well. Whereas the disclosure dilemma is usually presented as an *individual* dilemma (e.g., Griffith and Hebl, 2002), we found that multiple parties may be involved in and affected by this dilemma.

Fourth, participants experienced workplace inclusion differently depending on the focal organizational setting. We encountered considerable variation in the extent to which their need for *authenticity* was satisfied in either office or field. Simultaneously, we found *little* variation in the extent to which their need for *belonging* was satisfied, as this was almost constantly fulfilled, in both office and field. Satisfaction of one's need for belonging was only slightly hampered by limited organizational tenure. Similarly, we found an inability to talk about one's personal life in the field to also inhibit complete satisfaction of the need for belonging. This, in turn, strained satisfying one's need for authenticity and perceived workplace inclusion.

It has been hypothesized that human beings seek to optimize satisfaction of both needs for belonging and authenticity, leading to "optimal" inclusion (Shore et al., 2011; Jansen et al., 2014) or optimal distinctiveness (e.g., Brewer, 1991) within their social groups. Our findings suggest the possibility that if one of these two fundamental human needs is largely satisfied, there might be a sort of trade-off, whereby lower satisfaction of the other need may be compensated. In our study, decreased satisfaction of the need for authenticity was relatively acceptable for our participants, given that they received a surplus on the satisfaction of their need for belonging. This finding may point to a gap in the current definition of inclusion: by focusing on a minority group possessing a *concealable* characteristic, we can see the relative importance of fulfilling the need for authenticity, compared to the need for belonging. This raises new questions: is the construct of inclusion currently well defined, in its assumption that both needs for authenticity and belonging are equally important, or may the relative importance of one need trump the other under certain circumstances?

Implications

The second aim of our paper was to deduce the organizational factors that may play a role in the perceptions of workplace inclusion among LG humanitarian aid workers. We expected *colleagues'*, *supervisors' attitudes and behaviors*, *organizational inclusiveness practices* and the disclosure dilemma to play a role in perceptions of inclusion (see Shore et al., 2011). We suggest two main implications: First, the abovementioned *organization*-level characteristics can, to a certain extent, account for variations in perceived workplace inclusion of LG humanitarian aid workers. However, second, in order to account for *between-participant* differences in perceived authenticity, we propose to also consider *individual-level* characteristics.

Firstly, we found colleagues' attitudes and behaviors to be strongly related to perceptions of workplace inclusion among LG humanitarian aid workers. All participants felt welcomed and encouraged to be authentic by their co-workers within the office. Participants valued being able to share their experiences and to be open about their sexuality. This was pivotal, given the considerable contrast with the field, where, attitudes and behaviors of national staff and beneficiaries were far more negative. Therefore, participants were especially happy to witness the openness in the office. However, openness toward SGM-employees also showed a Janus face (cf. Cramwinckel et al., 2018). Even though co-workers generally reacted neutrally to positively when participants spoke of their sexual identity, and were supportive and understanding of their position, participants still faced subtle forms of discrimination, for example through being targeted by jokes and other micro-aggressions (Sue, 2010).

Secondly, supervisors' attitudes and behaviors also affected perceived workplace inclusion. Within the office, these were generally considered neutral or positive; in the field, the mission understandably strained inclusion perceptions. Almost all participants therefore raised concerns about MSF's training programs, as the organization is currently not equipping neither employees nor supervisors with the appropriate tools to deal with the presence of sexual minority staff in the field. Participants suggested that trainings could be offered, to raise awareness and understanding of sexual orientation issues (cf. Griffith and Hebl, 2002).

Thirdly, participants assessed MSF's current organizational inclusiveness practices toward sexual minorities to be non-existent. Despite the organization's extensive and careful efforts to establish an impeccable security framework, sexual minority issues are currently not covered. Including sexual minorities in this framework, as is the case for women and people of certain religions and nationalities, could be a first step toward more SGM-inclusiveness, by ensuring equal treatment to other vulnerable minority groups. Alternatively, extending the perspective of the authentic realists, we could see another role for the organization: MSF could also offer support by focusing on the vulnerable group itself, e.g., by teaching SGM-employees coping strategies on how to deal with lower fulfillment of their authenticity need when they are in the field.

At least within the office, it seems that these three organization-level characteristics could somewhat facilitate the disclosure dilemma for LG humanitarian aid workers. In the field, however, it is an entirely different story, because the organization cannot do much, and has to maneuver within specific legal and cultural frameworks. Participants understood this issue very well. Most participants therefore saw challenges for the organization, for example in finding feasible ways, given these constraints, to facilitate the disclosure dilemma, and thereby contributing to increased workplace inclusion of sexual minority employees.

Research may benefit from including more fine-grained individual-level factors in studying workplace inclusion. The *interplay* between individual-level and organization-level elements may provide an especially fruitful focus (cf. Clair et al., 2005; Wax et al., 2018). Several *individual*-level characteristics turned out to be more strongly associated with perceived authenticity and workplace inclusion than *organization*-level characteristics. In this, we distinguish individual-level characteristics that accounted for variation in perceived authenticity. Firstly, as 'conscious first missioners' experienced control over whether to disclose their sexuality when in the field, they did not perceive their need for authenticity as heavily compromised. These participants may have perceived a *degree of autonomy in the disclosure dilemma*, which was absent for participants categorized into the other two groups. Secondly, although 'authentic realists' did not experience autonomy in the disclosure dilemma, they did not see their need for authenticity as heavily compromised, which was related to two components. They demonstrated a *strong adherence to the organizational mission*, as well as voiced that their *sexual identity was a less central part of their identity*. Thirdly, 'idealistic activists' also did not experience autonomy in the disclosure dilemma, but they *did* perceive their need for authenticity as compromised. We related this to two other individual-level components, namely the belief that sexual orientation issues have to be discussed within the organization, because of the strong *contextual dependency of self-disclosure in the field*, and the *relative importance of their sexual identity to the self*.

Figure 1 presents an update to Shore et al. (2011) conceptual model, integrating findings from this study. It adds three elements, reflecting the particular context of our case study: individual-level characteristics, the disclosure dilemma, and the focal organizational setting (i.e., office vs. field).

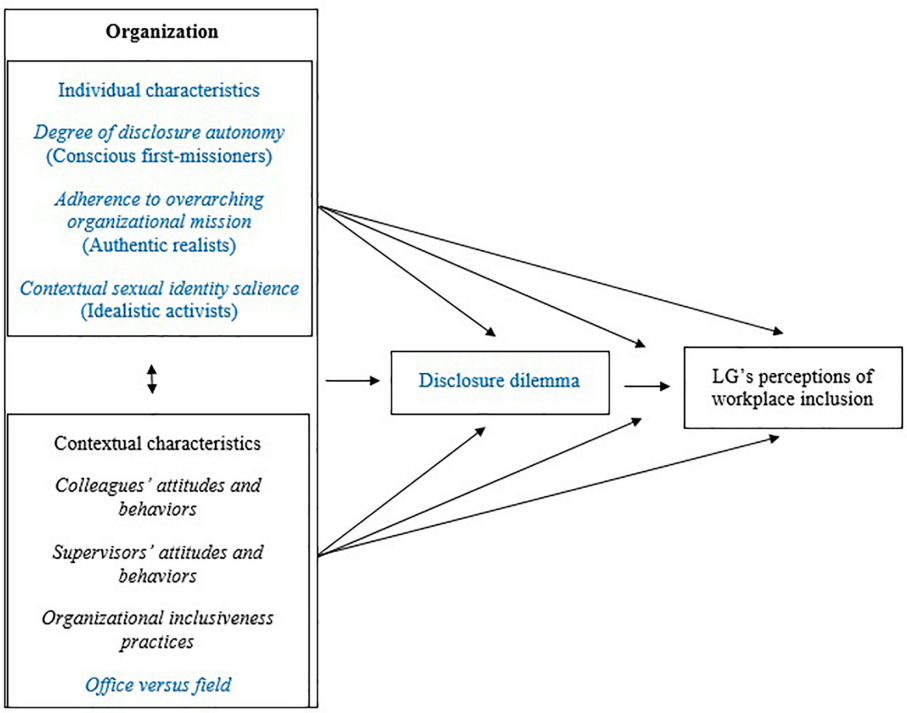

FIGURE 1 | Updated conceptual model, integrating heavily simplified elements from the Shore et al. (2011) model with the findings presented in our manuscript. Specifically, the elements we add to represent the particular context of our case study (represented in blue), are: (1) The individual-level characteristics which we found to play a role in lesbian and gay humanitarian aid workers' perceptions of workplace inclusion: (a) Degree of autonomy (i.e., perceived control over the decision to disclose or not, for conscious first-missioners). (b) Adherence to the overarching organizational mission (i.e., the extent to which the LG aid worker is willing to put the organizational mission before everything else, for authentic realists). (c) Contextual sexual identity salience (i.e., the extent to which the LG aid worker finds their sexuality to be a salient part of their identity in the workplace, which is strongly contextually dependent, for idealistic activists). (2) The disclosure dilemma, to account for the particular workplace experiences of those possessing an invisible stigma (e.g., sexual minorities). This may either be an individual dilemma, as proposed by extant research literature, or a shared dilemma, a notion for which we found some preliminary indications. (3) The distinction of office versus field context, strongly impacting the salience and importance of each of the contextual characteristics.

Additionally, **Table 1** presents our findings, delineating the three inductively constructed groups, the defining individual-level characteristics, and each participant's perceived satisfaction of the needs for authenticity and belonging, based on the interviews.

Strengths and Limitations

This study drew upon current social and organizational psychological understanding of workplace inclusion to build its theoretical framework, which we complemented with insights from literature on workplace experiences of SGM-employees. Our findings underline the usefulness of this framework by showing how organization-level characteristics can play a role in LGs' perceptions of workplace inclusion. Importantly, however, it seems that the framework should be further refined, to be able to investigate non-office work settings more carefully, and to enhance its applicability to the lived realities of invisible stigmatized minority groups. We were able to reach a richness within our data due to our chosen method of participant recruitment. In line with our maximum variation sampling strategy, we were able to find commonalities as well as differences among our participants, thereby reaching a satisfactory level of data saturation (see e.g. Hennink et al., 2011). These commonalities and differences formed the basis for our conceptual analyses, providing us with new insights into the central topics of this study. Furthermore, we recruited people through the gatekeeper strategy, thereby guaranteeing a certain degree of self-selection. This, then, translated into interviewing participants who were willing to share insightful stories about their personal experiences.

Simultaneously, this self-selection procedure, might have created a considerable amount of bias, and, thus, be considered a limitation of the study. Perhaps the employees who participated in our study were the ones who are particularly interested in sharing their stories, thereby making it possible that we did not get to speak with the less vocal segment of MSF's SGM-employees. Similarly, a segment of MSF's SGM-population may not have been able to live with a lowered satisfaction of their need for authenticity, and therefore decided to switch to another job. Subsequently, we were not able to collect insights into the factors leading to turnover decisions. Another limitation is that our sample only consisted of LG humanitarian aid workers. Given the particular issues faced by bisexual populations (e.g., lowered mental and emotional wellbeing, and social support compared to LGs; Arena and Jones, 2017), and transgendered people (e.g., more severe employment discrimination and unique challenges in identity management; Connell, 2010), it may be very likely that their experiences differ from the ones described here.

AVENUES FOR FUTURE RESEARCH

Based on the findings we present here, we suggest several fruitful avenues for future research: Two of a theoretical, one of a methodological, and two of a practical nature. A first theoretical idea hinges on our finding of the possible existence of a *shared* disclosure dilemma, rather than the commonly assumed individual dilemma (e.g., Griffith and Hebl, 2002). For example, future studies could explore the interests and viewpoints of the multiple stakeholders involved in the disclosure dilemma, the particular contexts in which such a shared dilemma may emerge, and what consequences may arise out of such 'conflicts of interest,' for individual and organization alike.

A second theoretical idea relies on the possibility of a buffering effect among the needs that combine to conceptualize workplace inclusion, for example by looking into how applicable the current conceptualization is for those people who have the option to conceal a characteristic (e.g., religion, educational background, political orientation) that distinguishes them from the majority. How does (lack of) satisfaction of their need for authenticity affect their perceived inclusion? Furthermore, in this particular case study, the organization was lauded by its ability to nurture perceptions of belonging, thereby somewhat 'lessening the blow' of lowered fulfillment of their need for authenticity. Do SGM-employees and fellow 'invisible' minorities in other sectors also experience that their need for authenticity needs to be compromised in their daily work, but that fulfillment of their belonging need may have a buffering function, or vice versa? What role does identity centrality play in the decision to disclose an invisible identity, and how does it affect perceived workplace inclusion?

Addressing these questions may lead to uncovering the conditions under which a sexual minority employee's different social identities become salient in a particular setting. For example, findings of our case study indicate the importance of an overarching organizational goal, which made employees subsume their personal need for authenticity under the organizational needs, especially in the field.

With regard to methods, our study calls for replication in other contexts. It might be possible that humanitarian aid work, with its high volatility, stress-inducing workload, and extreme ability to foster a strong sense of belonging, may be a very special organizational setting, leading to the findings we presented here. Additionally, there is a strong self-selection in this type of profession; as several participants mentioned, you have to be a certain kind of individual to be willing to live under these very special circumstances. This may have influenced our findings. Therefore, future research would do well to investigate these components of workplace inclusion within other organizations, in particular those with a strong mission element and the aim to help or save others, such as the ICRC, the military, volunteering, or faith-based organizations.

Thirdly, two more practical areas deserve attention. As the office setting of our study is situated in Amsterdam, we were not surprised to hear that, compared to other countries, participants felt they could be open about their sexual identity, hinging on the image of Amsterdam, and the Netherlands at large, to be tolerant and open toward SGM. Nevertheless, we also found boundaries to this openness: participants indicated to still be the subject of, or having witnessed someone else being the subject of, derogatory jokes and remarks toward SGM. We need to disentangle the mechanisms through which this 'bounded tolerance' (see also Buijs et al., 2011) strains SGM-employees, how negative consequences can be overcome, and how this can

be addressed among heterosexual workers. Relatedly, we only considered the viewpoints of LG employees. A truly inclusive work environment also needs to take into consideration the viewpoints of the majority group (i.e., heterosexuals) (cf. Shore et al., 2011; Otten and Jansen, 2015), and of other SGM, namely bisexuals', and transgender individuals'.

CONCLUSION

We found similarities as well as differences among sexual minority humanitarian aid workers, for example with regard to how they assess the disclosure dilemma, and with regard to their perceived workplace inclusion. This suggests that, even if a fundamental human need cannot be satisfied within a given organizational environment, sexual minority employees might continue to enjoy working for their organization, because of a deep love and great passion for their job, and for fulfilling an overarching organizational mission. There are ways in which they can make meaningful contributions, both within and beyond their organizational boundaries, even though it may be more difficult to fulfill their need for authenticity within the workplace, compared to members of the majority group. One way to better understand the mechanisms that perpetuate existing organizational arrangements maintaining workplace inequality of vulnerable groups, such as sexual minorities, is to do in-depth research on workplace inclusion from the targets' own perspectives.

DATA AVAILABILITY

The dataset for this manuscript is not publicly available because of the sensitive information it contains with regard to participants' personal experiences related to their sexual identity, and because of the confidential information it contains on Médecins Sans Frontières. Requests to access the dataset should be directed to Julian Rengers, j.m.rengers@rug.nl.

AUTHOR CONTRIBUTIONS

JR and LH established the conceptual framework and research design of this study. JR conducted the interviews, analyzed the data, and wrote the manuscript. LH, SO, and RW provided feedback on and contributed to rewriting of the manuscript. All authors approved the final version of this manuscript.

ACKNOWLEDGMENTS

We thank Marloes Schoonheim for bringing us in contact with participants, our participants for participating in our study, and the members of the SCIO research cluster of the Sociology department at the University of Groningen, as well as Müge Simsek and Eva Jaspers for their insightful and valuable comments on earlier versions of the manuscript. We would also like to express our gratitude to the reviewers for their very insightful comments on our manuscript. This paper is partly based on the first author's Master's thesis at the Research Master of Behavioral and Social Sciences, Faculty of Behavioral and Social Sciences, University of Groningen.

SUPPLEMENTARY MATERIAL

The Supplementary Material for this article can be found online at: https://www.frontiersin.org/articles/10.3389/fpsyg.2019.00320/full#supplementary-material

REFERENCES

Arena, D. F. Jr., and Jones, K. P. (2017). To "B" or not to "B": assessing the disclosure dilemma of bisexual individuals at work. *J. Vocat. Behav.* 103, 86–98. doi: 10.1016/j.jvb.2017.08.009

Baumeister, R. F., and Leary, M. R. (1995). The need to belong: desire for interpersonal attachments as a fundamental human motivation. *Psychol. Bull.* 117, 497–529. doi: 10.1037/0033-2909.117.3.497

Brewer, M. B. (1991). The social self: on being the same and different at the same time. *Pers. Soc. Psychol. Bull.* 17, 475–482. doi: 10.1177/0146167291175001

Buijs, L., Hekma, G., and Duyvendak, J. W. (2011). 'As long as they keep away from me': the paradox of antigay violence in a gay-friendly country. *Sexualities* 14, 632–652. doi: 10.1177/1363460711422304

Button, S. B. (2001). Organizational efforts to affirm sexual diversity: a cross-level examination. *J. Appl. Psychol.* 86, 17–28. doi: 10.1037/0021-9010.86.1.17

Button, S. B. (2004). Identity management strategies utilized by lesbian and gay employees. A quantitative investigation. *Group Organ. Manag.* 29, 470–494. doi: 10.1177/1059601103257417

Chaudoir, S. R., and Fisher, J. D. (2010). The disclosure processes model: understanding disclosure decision-making and post-disclosure outcomes among people living with a concealable stigmatized identity. *Psychol. Bull.* 136, 236–256. doi: 10.1037/a0018193

Chrobot-Mason, D., Button, S. B., and DiClementi, J. D. (2001). Sexual identity management strategies: an exploration of antecedents and consequences. *Sex Roles* 45, 321–336. doi: 10.1023/A:1014357514405

Clair, J. A., Beatty, J. E., and MacLean, T. L. (2005). Out of sight, but not out of mind: managing invisible social identities in the workplace. *Acad. Manag. Rev.* 30, 78–95. doi: 10.5465/AMR.2005.15281431

Colgan, F., Creegan, C., McKearney, A., and Wright, T. (2007). Equality and diversity policies and practices at work: lesbian, gay and bisexual workers. *Equal Opport. Int.* 26, 590–609. doi: 10.1108/02610150710777060

Colgan, F., and McKearney, A. (2012). Visibility and voice in organisations: lesbian, gay, bisexual and transgendered employee networks. *Equal. Div. Inclus.* 31, 359–378. doi: 10.1108/02610151211223049

Colgan, F., and Wright, T. (2011). Lesbian, gay and bisexual equality in a modernizing public sector 1997–2010: opportunities and threats. *Gend. Work Organ.* 18, 548–570. doi: 10.1111/j.1468-0432.2011.00558.x

Connell, C. (2010). Doing, undoing, or redoing gender? Learning from the workplace experiences of transpeople. *Gend. Soc.* 24, 31–55. doi: 10.1177/0891243209356429

Corbin, J., and Strauss, A. L. (2008). *Basics of Qualitative Research: Techniques and Procedures for Developing Grounded Theory*. Thousand Oaks, CA: SAGE Publications Ltd. doi: 10.4135/9781452230153

Cramwinckel, F. M., Scheepers, D., and Van der Toorn, J. (2018). Interventions to reduce blatant and subtle sexual orientation- and gender identity prejudice (SOGIP): current knowledge and future directions. *Soc. Issues Policy Rev.* 12, 183–217. doi: 10.1111/sipr.12044

Crocker, J., Major, B., and Steele, C. (1998). "Social stigma," in *The Handbook of Social Psychology*, eds D. T. Gilbert, S. T. Fiske, and G. Lindzey (New York, NY: McGraw Hill), 504–553.

Croteau, J. M. (1996). Research on the work experiences of lesbian, gay, and bisexual people: an integrative review of methodology and findings. *J. Vocat. Behav.* 48, 195–209. doi: 10.1006/jvbe.1996.0018

Deci, E. L., and Ryan, R. M. (2000). The "what" and "why" of goal pursuits: human needs and the self-determination of behavior. *Psychol. Inquiry* 11, 227–268. doi: 10.1207/S15327965PLI1104_01

Ellemers, N., and Barreto, M. (2006). Social identity and self-representation at work: how attempts to hide a stigmatized identity affect emotional well-being, social inclusion and performance. *Neth. J. Psychol.* 62, 51–57. doi: 10.1007/BF03061051

Ellemers, N., and Jetten, J. (2013). The many ways to be marginal in a group. *Pers. Soc. Psychol. Rev.* 17, 3–21. doi: 10.1177/1088868312453086

Eriksson, C. B., Bjorck, J. P., Larson, L. C., Walling, S. M., Trice, G. A., Fawcett, J., et al. (2009). Social support, organisational support, and religious support in relation to burnout in expatriate humanitarian aid workers. *Ment. Health Relig. Cult.* 12, 671–686. doi: 10.1080/13674670903029146

Friese, S. (2013). *ATLAS.ti 7 User Manual*. Berlin: ATLAS.ti Scientific Software Development GmbH.

Goffman, E. (1959). *The Presentation of Self in Everyday Life*. New York, NY: Anchor Books.

Goffman, E. (1963). *Stigma. Notes on the Management of Spoiled Identity*. Upper Saddle River, NJ: Prentice Hall.

Griffith, K. H., and Hebl, M. R. (2002). The disclosure dilemma for gay men and lesbians: "Coming out" at work. *J. Appl. Psychol.* 87, 1191–1199. doi: 10.1037/0021-9010.87.6.1191

Guba, E. G. (1981). Criteria for assessing the trustworthiness of naturalistic inquiries. *Educ. Commun. Technol. J.* 29, 75–91.

Hennink, M., Hutter, I., and Bailey, A. (2011). *Qualitative Research Methods*. London, UK: Sage Publications.

ILGA (2016). *The ILGA-RIWI 2016 Global Attitudes Survey on LGBTI People in Partnership with LOGO*. Available at: http://ilga.org/global-survey-attitudes-lgbti-riwi-logo/

ILGA (2017). *Sexual Orientation Laws in the World – Overview*. Available at: http://ilga.org/downloads/2017/ILGA_WorldMap_ENGLISH_Overview_2017.pdf

Jansen, W. S., Otten, S., Van der Zee, K., and Jans, L. (2014). Inclusion: conceptualization and measurement. *Eur. J. Soc. Psychol.* 44, 370–385. doi: 10.1002/ejsp.2011

Jansen, W. S., Vos, M. W., Otten, S., Podsiadlowski, A., and Van der Zee, K. I. (2016). Colorblind or colorful? how diversity approaches affect cultural majority and minority employees. *J. Appl. Soc. Psychol.* 46, 81–93. doi: 10.1111/jasp.12332

Janssens, M., and Zanoni, P. (2008). "What makes an organization inclusive? Organizational practices favoring the relational inclusion of ethnic minorities in operative jobs. *Paper presented at the IACM 21st Annual Conference on Social Science Research Network*, Chicago, IL. doi: 10.2139/ssrn.1298591

Jones, K. P., and King, E. B. (2014). Managing concealable stigmas at work: a review and multilevel model. *J. Manag.* 40, 1466–1494. doi: 10.1177/0149206313515518

Kernis, M. H., and Goldman, B. M. (2006). "A multicomponent conceptualization of authenticity: theory and research," in *Advances in Experimental Social Psychology*, ed. M. P. Zanna (San Diego, CA: Elsevier Academic Press), 283–357.

King, E. B., Mohr, J. J., Peddie, C. I., Jones, K. P., and Kendra, M. (2017). Predictors of identity management: an exploratory experience-sampling study of lesbian, gay, and bisexual workers. *J. Manag.* 43, 476–502. doi: 10.1177/0149206314539350

Lloren, A., and Parini, L. (2016). How LGBT-supportive workplace policies shape the experience of lesbian, gay men, and bisexual employees. *Sex. Res. Soc. Policy* 14, 289–299. doi: 10.1007/s13178-016-0253-x

McFadden, C. (2015). Lesbian, gay, bisexual, and transgender careers and human resource development: a systematic literature review. *Hum. Res. Dev. Rev.* 14, 125–162. doi: 10.1177/1534484314549456

Médecins Sans Frontières (2017). *Annual Report MSF-OCA 2017*. Available at: https://www.artsenzondergrenzen.nl/jaarverslag

Médecins Sans Frontières (2018). *The MSF Charter*. Available at: https://www.msf.org/who-we-are

Mor Barak, M. E., and Cherin, D. (1998). A tool to expand organizational understanding of workforce diversity. *Adm. Soc. Work* 22, 47–64. doi: 10.1300/J147v22n01_04

Nembhard, I. M., and Edmondson, A. C. (2006). Making it safe: the effects of leader inclusiveness and professional status on psychological safety and improvement efforts in health care teams. *J. Organ. Behav.* 27, 941–966. doi: 10.1002/job.413

Ng, E. S., and Rumens, N. (2017). Diversity and inclusion for LGBT workers: current issues and new horizons for research. *Can. J. Adm. Sci.* 34, 109–120. doi: 10.1002/CJAS.1443

Nishii, L. H. (2013). The benefits of climate for inclusion for gender-diverse groups. *Acad. Manag. J.* 56, 1754–1774. doi: 10.5465/amj.2009.0823

Orne, J. (2011). 'You will always have to "out" yourself': reconsidering coming out through strategic outness. *Sexualities* 14, 681–703. doi: 10.1177/1363460711420462

Otten, S., and Jansen, W. S. (2015). "Predictors and consequences of exclusion and inclusion at the culturally diverse workplace," in *Towards Inclusive Organizations. Determinants of successful diversity management at work*, eds S. Otten, K. I. Van der Zee, and M. B. Brewer (Hove: Psychology Press), 67–86.

Ozeren, E. (2014). Sexual orientation discrimination in the workplace: a systematic review of literature. *Proc. Soc. Behav. Sci.* 109, 1203–1215. doi: 10.1016/j.sbspro.2013.12.613

Pachankis, J. (2007). The psychological implications of concealing a stigma: a cognitive-affective-behavioral model. *Psychol. Bull.* 133, 328–345. doi: 10.1037/0033-2909.133.2.328

Patton, M. Q. (2001). *Qualitative Research and Evaluation Methods*. Thousand Oaks, CA: Sage Publications.

PEW Research Center (2013). *The Global Divide on Homosexuality: Greater Acceptance in More Secular and Affluent Countries*. Available at: http://www.pewglobal.org/2013/06/04/the-global-divide-on-homosexuality/

Priola, V., Lasio, D., De Simeone, S., and Serri, F. (2014). The sound of silence: lesbian, gay, bisexual and transgender discrimination in 'inclusive organizations.' *Br. J. Manag.* 25, 488–502. doi: 10.1111/1467-8551.12043

Ragins, B. R. (2004). Sexual orientation in the workplace: the unique work and career experiences of gay, lesbian and bisexual workers. *Res. Pers. Hum. Res. Manag.* 23, 37–122. doi: 10.1016/S0742-7301(04)23002-X

Ragins, B. R. (2008). Disclosure disconnects: antecedents and consequences of disclosing invisible stigmas across life domains. *Acad. Manag. Rev.* 33, 194–215. doi: 10.2307/20159383

Ragins, B. R., and Cornwell, J. M. (2001). Pink triangles: antecedents and consequences of disclosing invisible stigmas across life domains. *J. Appl. Psychol.* 86, 1244–1261. doi: 10.1037//0021-9010.86.6.1244

Ragins, B. R., Singh, R., and Cornwell, J. M. (2007). Making the invisible visible: fear and disclosure of sexual orientation at work. *J. Appl. Psychol.* 92, 1103–1118. doi: 10.1037/0021-9010.92.4.1103

Roberson, Q. M. (2006). Disentangling the meanings of diversity and inclusion in organizations. *Group Organ. Manag.* 31, 212–236. doi: 10.1177/1059601104273064

Saldaña, J. (2009). *The Coding Manual for Qualitative Researchers*. London: Sage Publications.

Settles, I. H. (2004). When multiple identities interfere: the role of identity centrality. *Pers. Soc. Psychol. Bull.* 30, 487–500. doi: 10.1177/0146167203261885

Shenton, A. K. (2004). Strategies for ensuring trustworthiness in qualitative research projects. *Edu. Inform.* 22, 63–75. doi: 10.3233/EFI-2004-22201

Shore, L. M., Randel, A. E., Chung, B. G., Dean, M. A., Holcombe Ehrhart, K., and Singh, G. (2011). Inclusion and diversity in work groups: a review and model for future research. *J. Manag.* 37, 1262–1289. doi: 10.1177/0149206310385943

Spiegel, T., Wittek, R., and Steverink, N. (2016). What are the pathways linking the disclosure of a degenerative eye condition in the workplace and wellbeing? a mixed methods approach. *Int. J. Dis. Manag.* 11, 1–12. doi: 10.1017/idm.2016.2

Sue, D. W. (2010). *Microaggressions in Everyday Life: Race, Gender, and Sexual Orientation*. Hoboken, NJ: Wiley.

Turner, J. C., Hogg, M. A., Oakes, P. J., Reicher, S. D., and Wetherell, M. S. (1987). *Rediscovering the Social Group: A Self-Categorization Theory*. Oxford: Blackwell.

Visser, M., Mills, M., Heyse, L., and Wittek, R. P. M. (2016). Work-life balance among humanitarian aid workers. *Nonprofit Volunt. Sect. Q.* 45, 1191–1213. doi: 10.1177/0899764016634890

Wax, A., Coletti, K. K., and Ogaz, J. W. (2018). The benefit of full disclosure: a meta-analysis of the implications of coming out at work. *Organ. Psychol. Rev.* 8, 3–30. doi: 10.1177/2041386617734582

Webster, J. R., Adams, G. A., Maranto, C. L., Sawyer, K., and Thoroughgood, C. (2017). Workplace contextual supports for LGBT employees: a review, meta-analysis, and agenda for future research. *Hum. Res. Manag.* 57, 1–18. doi: 10.1002/hrm.21873

Conflict of Interest Statement: The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

frontiers in Psychology

ORIGINAL RESEARCH
published: 26 March 2019
doi: 10.3389/fpsyg.2019.00628

Construction at Work: Multiple Identities Scaffold Professional Identity Development in Academia

Sarah V. Bentley[1], Kim Peters[1], S. Alexander Haslam[1] and Katharine H. Greenaway[2]*

[1] School of Psychology, The University of Queensland, Brisbane, QLD, Australia, [2] Melbourne School of Psychological Sciences, The University of Melbourne, Melbourne, VIC, Australia

Identity construction – the process of creating and building a new future self – is an integral part of a person's professional career development. However, at present we have little understanding of the psychological mechanisms that underpin this process. Likewise, we have little understanding of the barriers that obstruct it, and which thus may contribute to inequality in career outcomes. Using a social identity lens, and particularly the Social Identity Model of Identity Change (SIMIC), we explore the process of academic identity construction among doctoral students. Through thematic analysis of semi-structured interviews with 22 Ph.D. candidates, we observe that the identity construction process relies on a person's perception of a navigable pathway between their current self and their future self. Importantly, participants who were able to access multiple identity resources were more likely to perceive a navigable pathway to a future professional self (e.g., as an academic), unless they perceived these identities to be incompatible with those held by leading members of the profession (e.g., their supervisors). This research suggests that the identities that people are able to access as they progress in their careers may play an important role in their ongoing professional identity construction and career success.

Keywords: social identity, identity construction, professions, academia, education

OPEN ACCESS

Edited by:
Christopher T. Begeny, University of Exeter, United Kingdom

Reviewed by:
Ilka H. Gleibs, The London School of Economics and Political Science, United Kingdom
Michela Cortini, Università degli Studi G. d'Annunzio Chieti e Pescara, Italy

****Correspondence:***
Sarah V. Bentley
s.bentley@uq.edu.au

Specialty section:
This article was submitted to Organizational Psychology, a section of the journal Frontiers in Psychology

Received: *12 October 2018*
Accepted: *06 March 2019*
Published: *26 March 2019*

Citation:
Bentley SV, Peters K, Haslam SA and Greenaway KH (2019) Construction at Work: Multiple Identities Scaffold Professional Identity Development in Academia. Front. Psychol. 10:628. doi: 10.3389/fpsyg.2019.00628

INTRODUCTION

> *Seeing a successful woman that still has her identity as part of her persona in research. It's something that I haven't seen, and it frightens me. Frightens me to be two persons. That's not the way it should be.*
>
> Female Ph.D. candidate, Engineering

Career pathways can be seen as a progression of role changes: who one was in the past; who one is now; and most importantly, who one will become in the future (Obodaru, 2012). From this perspective, it is clear that careers are characterized by the ongoing relinquishment of old identities (who one was) and construction of new ones (who one is going to be). This process of identity construction is far from simple because it not only involves the acquisition of observable knowledge and skills (the "content" of a job role), but also the internalization of a range of (often implicit) behaviors, values and understandings that are embedded within the future identity (Katz and Kahn, 1978; Ibarra, 1999; Dukerich, 2001). For this reason, this process of future self-construction may have less to do with pragmatic "doing" concerns, and more to do with an experiential sense of who one

wants to be, or more importantly, *who one thinks one is able to become* (Ibarra and Barbulescu, 2010).

There is evidence that people's ability to construct a future professional identity matters. Specifically, people who have a clear sense of their future professional identity report higher levels of career motivation and proactive career behavior (Markus and Nurius, 1986; Ibarra, 1999). All else being equal, then, people's professional identity construction is likely to be an important factor in their career outcomes. And by implication, barriers to professional identity construction may account for unequal career outcomes. The quote above from a female engineering candidate vividly illustrates a break-down in the identity construction process, as she describes the seemingly irreconcilable nature of who she thinks she is and who she believes she must become in order to succeed. In particular, she claims that if she is to succeed she needs to shed her identity as a woman. Understanding how these fissures contribute to what has become known as the leaky pipeline (White, 2004; Clark Blickenstaff, 2005) may provide a new dimension to understanding workplace inequality.

In this paper, we aim to explore people's experiences of professional identity construction in order to better understand the factors that may facilitate or hinder it. We focus particularly on the importance of multiple social identities in the identity construction process. There are two reasons for this. First, a growing body of work on the social identity model of identity change (SIMIC; Iyer et al., 2009; Jetten and Pachana, 2012) has shown that people who are able to access multiple social identities are better able to cope with a range of life transitions. We ask whether the same social identity processes that underpin lived experiences of identity transition also underpin the yet-to-be-lived process of future identity construction. Second, there is evidence that people's perceptions of incompatibility between their social identities (e.g., relating to gender or race) and those that characterize prototypical members of the profession can reduce their sense that the career path is feasible and undermine their motivation to pursue it (e.g., Cheryan and Plaut, 2010; Peters et al., 2015). We will now review the literature that speaks to the role of social identity in identity change and its potential relevance to identity construction.

Multiple Identities and Identity Construction

The evolution of a person's career is a process that involves identity transition, whether in the course of the educational journey, job promotion, or in the process of moving from one professional domain to another (noting that the average person changes career five times in their life time; Barrett, 2017). Each time a person transitions from one role to another this requires a re-construction of the self – I was a waiter but I am now a restaurant manager, I was a nurse but I am now a doctor, I was a student but I am now an academic. So how does this identity construction process happen, and what are the barriers to its success?

In exploring questions of identity in the workplace, researchers have taken a wide range of approaches, from examining the sense of self a person derives from who they are as an individual with unique capabilities, to that which they derive from their relationships at work or their membership of some larger collective, like a work team or organization (see Miscenko and Day, 2016, for a detailed review). However, regardless of the level at which the identity has been construed, the majority of this work has focused on static identity processes rather than dynamic ones associated with identity change, transition and construction (Ashforth et al., 2008). There are some exceptions to this rule, including some work on relational identification (Sluss and Ashforth, 2008), role modeling (Kelman, 1961) and possible identities (e.g., Ibarra, 1999). Although these exceptions have generated some useful insights, in this paper we take a different approach. In particular, we focus specifically on the role of people's multiple social identities in identity construction because a growing body of work has revealed that how a person responds to change is affected by their ability to access these social identity resources.

This work into the SIMIC (Iyer et al., 2009) was developed out of the social identity perspective. Originating from the work of Henri Tajfel, this perspective describes how a person's sense of themselves – their self-concept – can be informed and strengthened through identifications with others (Tajfel and Turner, 1979), and argues that this process of identification is structured through a sense of shared group membership. Self-categorization theory, a socio-cognitive account of the mechanics of social identity salience and social identification, describes how a person's selfhood is in fact continually constructed and reconstructed according to the context in which they find themselves (Turner et al., 1987; Oakes and Haslam, 1994). These constructions of the self-occur as people navigate their daily lives. For example, a mother dropping her child at kindergarten will likely define herself differently in that instance to the way that she defines herself 30 min later when she enters her law office to begin her day's work. These changing self-definitions have a direct impact on how people think, feel and behave (Turner, 1982; Turner et al., 1994). In the years since Tajfel's and Turner's initial exposition of social identity theory, a wealth of research has explored not only the contextual mechanics of identification, but also the importance of positive identification for healthy functioning and motivation in a broad range of domains (Jolanda et al., 2009; Jetten et al., 2012, 2015, 2017; Greenaway et al., 2015; Bentley et al., 2017; Haslam et al., 2018).

But of particular importance for identity construction, social identity research has been extended to the SIMIC model to speak to the way in which the groups that people belong to can also predict positive outcomes when undergoing identity transitions (Haslam et al., 2008; Haslam and Ellemers, 2011; Best et al., 2014; Dingle et al., 2015). The SIMIC describes how people who are able to access more identity resources in the form of multiple social groups are better able to navigate identity changing events like parenthood, education, illness, or retirement (Iyer et al., 2009; Jetten and Pachana, 2012; Steffens et al., 2016; Tabuteau-Harrison et al., 2016; Praharso et al., 2017; Ng et al., 2018). Two reasons have been advanced for why having multiple identities can facilitate the change process (Jetten et al., 2009). The first is that having multiple identities increases the likelihood

that some identities will be maintained over the course of the change, thereby providing a sense of *identity continuity*. The second is that having multiple identities – by virtue of providing people with a lived experience of the rich dimensionality of one's sense of self – provides a stronger and broader platform for the development of *new social identities*.

Although the phenomenon of identity construction differs from the kinds of transitions that the SIMIC has thus far been applied to (i.e., a lived experience of identity change, such as parenthood, retirement or illness, rather than a yet to-be-lived identity change possibility) there is reason for thinking that it may matter for identity construction too. In particular, if multiple groups can facilitate a sense of continuity from the past to the present, they may also act as a bridge to the future. And if these groups help people to develop new identities they may also facilitate the identity construction process. For instance, it may be that people's ability to access multiple identities (e.g., as a scientist, supervisor, mentor, analyst, team member) in the context of their profession – both in terms of the number of groups that they belong to and the number of ways they can understand who they are and what they do – affects the ease with which they are able to construct a future identity (e.g., as organizational leader). However, as we discuss next, it is possible that not all identities are equally able to facilitate identity construction.

Barriers to Identity Construction

The SIMIC argues that people are better able to successfully navigate change if they have multiple identity resources (providing a person with access to a range of support and self-definitions) and these provide some bridging continuity into the future (Haslam et al., 2019). Importantly, bridging continuity can relate to the compatibility between pre-transition and post-transition identities, which can manifest in terms of perceived similarity. As suggested in the quote at the beginning of this piece, one important basis for this perceived similarity and continuity are demographic characteristics like ethnicity, gender, politics, cultural background, or shared values (Platow and van Knippenberg, 2001; Steffens et al., 2013). That is, it was this students' tendency to see herself as a woman that interfered with her ability to see herself as getting ahead in her profession because she believed that the women who had achieved this professional outcome had only done so by shedding her gender identity. Further evidence for this possibility comes from research demonstrating how people's social identities play an important role in their role modeling of leading members of a profession (Morgenroth et al., 2015). For instance, there is evidence that women who identify highly with their gender are particularly likely to have female role models (Lockwood, 2006) and that people generally find high-achieving "elite" individuals, with whom they share few identities, demotivating (Hoyt, 2013).

Data would suggest that inequalities – or perceived incompatibilities – amongst socio-demographic group categorizations are still significantly impacting professional outcomes. And today, researchers continue to struggle when tackling issues of minority group access to majority group roles, such as a lack of women in STEM subjects, or a dearth of female CEOs within the tech industries (Wright et al., 1997; Oakley, 2000; Bosma et al., 2011; Cheryan et al., 2011; Stout et al., 2011). This suggests that we have yet to locate all the leaks in the career pipeline. An understanding of the psychological underpinnings of the identity construction process (and in particular, the role of multiple, compatible identities) may shed light on these early fissures and suggest new interventions for addressing continued unequal outcomes.

The Study Context

We explore the role of multiple identities in identity construction among Ph.D. candidates. The pinnacle of the educational journey, the receipt of a Doctor of Philosophy degree represents the last stages in educational achievement, in which a candidate works with one or two principal advisors to create a body of work that represents their own significant and novel contribution to knowledge. Looking at identity construction within the academic post-doctoral process provides an ideal domain from which to explore these questions. In a relatively short period of time Ph.D. candidates are required to shift their identity from student to academic, from apprentice to master, and ultimately to construct their own bespoke academic identity upon which their future career depends. And this stage in the education journey is one of the least structured, relying almost exclusively on the relationship between the candidate and their advisory team.

To add further complexity to the process, in recent years, the nature of the doctoral training process has become somewhat contentious. An exponential increase in numbers of candidates being awarded Ph.D.s, and a decrease in the number of academic positions for which they trained means that the process of identity construction for Ph.D. candidates has become increasingly problematic (Larson et al., 2014). And while the increasing globalization and diversity of the student body is arguably a sign that more options have become available to more students, the lack of opportunities suggests that in reality academic career pathways are becoming more competitive, less certain, and ultimately *less* available (Warner and Palfreyman, 2001; Hermans and Dimaggio, 2007; Banks, 2008). For instance, while the last two decades have seen an exponential growth in Ph.D.s being awarded globally, in some countries as few as 5% of Ph.D. recipients will progress into a career in academia (Mangematin, 2000; Economist, 2010). Troublingly, there is evidence that women and other underrepresented groups are less likely to negotiate this transition than the members of dominant groups. Anders (2004) for instance, demonstrates how women self-select out of professional academic pathways due to concerns over their ability to successfully manage both academic and parenting identities. And Hill et al. (1999) discuss how identity disconnections within the mentoring process can be a significant contributing factor when it comes to the *lack* of ethnic minorities in academia.

Together, these factors mean that issues of identity construction – who do you want to be? – as well as identity uncertainty – but who can you really become? (Warner and Palfreyman, 2001; Banks, 2008) are likely to be highly salient for Ph.D. students. In line with the rationale set out above, in this research we investigated the mechanisms of professional identity construction within the Ph.D. training

process through the lens of the SIMIC model. Given our interest in the identity construction process, and particularly how a professional identity can be constructed or obstructed, we focused on a demographically varied group of students, and especially those who were underrepresented in terms of gender, age, ethnicity, and stage of candidature. We used qualitative thematic analysis of semi-structured interview data to explore candidates' narratives of identity and identity construction.

MATERIALS AND METHODS

Sample

Twenty-two participants (2 men, 20 women) were interviewed, all individually. This data was collected as part of a larger study into Ph.D. experiences that also included interviews with Ph.D. supervisors (n = 34). Our present analysis focused only on data from students because, having successfully navigated the academic career path, supervisors are poorly positioned to provide insight into identity construction failure. Participants were recruited from a range of disciplines at the same Australian university via the university's monthly e-newsletter which is distributed to all students. The sample was diverse in terms of discipline and stage of study, but included a disproportionate number of women (91% compared to 52% of the Ph.D. population at the university). Purposive diversity sampling was used in the second round of recruitment in an attempt to achieve a more balanced gender distribution but with very limited success. There are likely to be a range of reasons for this (many of which are germane to the issues that the research was exploring), and this is an issue we return to in the Discussion. The study received ethical approval from the university's School of Psychology ethics committee.

Procedure

The semi-structured interview questions were devised by the research team to explore Ph.D. experiences broadly, and were informed by the literature on role modeling and social identity in social and organizational contexts (e.g., see Ellemers et al., 1999; Haslam and Ellemers, 2011). Interview questions were piloted by volunteer students in the department in order to hone the questions and to provide an opportunity for the research team to practice conducting interviews (see **Appendix**). Interviews were undertaken by four research students under the direction of the first two authors, and were conducted at the university in various meeting rooms, according to the location of the interviewee. The interviewers received extensive training and feedback with the interview protocol before they conducted their interviews and the authors conducted quality control throughout. We did not detect any substantive differences in the kind of data that were generated by the interviews on the basis of our reading of the transcripts and listening to the audio-recordings. Interviews lasted on average 50 min and were recorded, and then transcribed. The study was described to potential interviewees as an investigation into the Ph.D. student–supervisor relationship.

Amongst other things, the interview schedule was designed to elicit (a) interviewees' perspectives on their own identities in the context of their Ph.D., (b) their thoughts on the prototypicality of their chosen identity within the academic context, (c) the compatibility of that identity with other identities, and (d) their supervisor's identity.

Interviews were transcribed using indicators for conversational tempo and emphasis. To increase the clarity of our exposition, we omit these indicators from the quotes presented in text, but they are available to the interested reader in the supplement. Our analysis followed the guidelines for thematic analysis detailed by Braun and Clarke (2006). First, the transcribed interviews were read by the first and second authors, who used a deductive perspective to identify themes that related to identity construction. The second wave of analysis deployed an inductive stance to investigate factors related to the processes under investigation in a more exploratory way. This involved close re-readings of the transcripts and attempts to capture all relevant themes. Once complete, the authors collaborated to distil the initial large thematic output into fitting categories or "headlines" (e.g., as recommended by Braun and Clarke, 2013; Haslam and McGarty, 2014). Once this stage was complete, the transcripts were re-read to ensure the summary results that emerged from this process were faithful to the original data.

RESULTS

Sample Overview

The 22 participants came from a broad cross-section of disciplines, ranging from engineering to public health to anthropology, and covered all stages of the Ph.D. process from Year 1 through to Year 3[1]. In Australia, Ph.D. students have minimal coursework requirements, and are expected to complete their Ph.D. within 3 years. The vast majority (91%) of interviewees were women, and 50% were domestic students. Their supervisory teams ranged in number from 1 to 4 members, and the preponderance of supervisors were male. Full descriptive data are presented in **Table 1**.

Ph.D. Students' Identity Resources

We observed a great deal of variation in candidates' responses to the questions of how they described their profession to others, and what other terms were appropriate for describing what they do. This variation is presented in **Table 2**, along with candidates' responses to the question of whether they considered their Ph.D. to be an apprenticeship or a job. Generally, we found that the Ph.D. candidates could be distinguished according to whether or not they were able to access multiple identities, and whether these identities related to academia (e.g., student, researcher, scientist) or other vocations (e.g., engineer, clinician, physiotherapist). Importantly, there was evidence that multiple identities – especially when these mapped onto multiple domains – were associated with a clearer sense that the Ph.D. provided a pathway to a future profession. As we will discuss

[1]We found no evidence that the emergent themes had any relationship to the year of Ph.D.

TABLE 1 | Sample characteristics.

Interviewee	Discipline	Ph.D. year	Gender	Domestic/ International	Sup. team
1	Engineering	2	F	I	M, M, M
2	Speech Pathology	2	F	D	F
3	Human Geography	3	F	I	M, F, M
4	Fisheries	2	F	D	M, M, M
5	Environmental Management	3	F	D	M, M, M
6	Public health	3	F	I	F, M, M
7	Communication	3	F	I	F, M
8	Pharmacy	2	F	D	F, M, F, F
9	Civil engineering	1	M	I	M
10	Civil engineering	1	M	I	M, M, M, M
11	Chemical engineering	2	F	D	M, M, M
12	Physiotherapy	3	F	I	F, M
13	Chemical engineering	1	F	D	F, M, M
14	Occupational therapy	2	F	D	F, F
15	Medicine	1	F	I	M, M, M
16	Education	3	F	D	M, ?
17	Humanities and social science	3	F	I	F, F, M
18	Anthropology	2	F	D	M, M, M
19	Physics	3	F	D	M, F, M
20	Engineering	1	F	I	M, F, F
21	Medicine	2	F	D	F, F
22	Veterinary Science	3	F	D	M, F, F

in more detail below, Ph.D. candidates who relied on a single academic identity expressed more confusion and frustration about who they were and where they were headed than candidates who reported multiple, mixed identities. Revealingly, the former group of candidates were more likely to consider their Ph.D. to be an apprenticeship, which is both more limited (with one professional outcome) and less agentic (serving under a master) than a job.

Single Identities

For those candidates who only reported a single Ph.D. student identity, there was often frustration associated with that identity category. This was articulated in terms of the inadequacy of the title "Ph.D. Student" in representing the day-to-day reality of the role, whether in terms of seniority or job clarity. For example, I11 [F, Chemical engineering], described the unsatisfactory nature of the very word *student* when trying to describe her role:

> I11: *Actually, not really because I can't find a really good expression – because you know, when I say Ph.D. student, student means a person who has courses but I'm a . . . research student. It seems that there is a, there is a lack of word or expression. I can't say Ph.D. I can't say I'm an RHD student because most of the people, they don't know RHD and RHD doesn't have a very prestigious weighting. On the other hand, um student it means, it seems to me undergraduate. So no, I think it's not the best way.*

While in most cases single identities fell in the academic domain, there was one student whose only identity was vocational. Speaking to the particular challenges of a single identity as Ph.D. student, this candidate did not express the same level of identity frustration. For her, the Ph.D. process provided a direct pathway to her future self:

> I04: *I think to get where I want to be career wise I can't not have a Ph.D., but I also think it's just a good experience to do that whole project and have that ownership of the project as well.*

Multiple Identities

Many candidates reported having multiple identities. Some referred to themselves using a variety of academic identities, and others used a mixture of academic identities as well as applied vocational identities. The articulation of multiple identities often manifested in candidates' discussions of how they dealt with the uncertainties of being a Ph.D. student, and they tended to describe how these multiple identity resources buffered them against the difficulties associated with this uncertainty. A female Ph.D. candidate working in Speech Pathology described her own contextual understanding of her identities in this way:

> I02: *Like if I am meeting someone that I haven't seen them for a quite some time, and if they ask me what I am doing these days, then I would say I am working clinically part time and also doing some post graduate study . . . and then the conversation would kind of progress.*

Ph.D. candidates who had access to multiple identities from academic and vocational domains had a much stronger and more positive sense of how their Ph.D. identity was contributing to their chosen career pathway. These candidates generally reported on the functional and complementary nature of the Ph.D. identity. A female medical student, for instance, who came into her Ph.D. after a period of working in an applied physiotherapy setting, described how the inclusion of a Ph.D. identity had served to strengthen her original therapist identity:

> I21: *I don't think my Ph.D. has like interrupted that at all and in fact I think it strengthened me in my identity as a physio because it's enabled me to engage like directly with the core of the profession, which is like finding out more and problem solving and doing, and having an impact.*

However, even for Ph.D. candidates whose multiple identities were all in the academic domain there was evidence of more personal agency, as well as a clearer sense of professional career development. This is revealed by the fact that five out of the six candidates who defined themselves with multiple academic identities described their Ph.D. as a job, as did ten of the eleven who defined themselves as having multiple mixed identities. This

TABLE 2 | Identity availability, content and Ph.D. status as job or apprenticeship.

Identity availability	*"What do you call yourself when meeting new people. . ."*	*"Is your Ph.D. a job or an apprenticeship?"*
Single student identity	Student	*Apprenticeship*
	Ph.D. student	*Apprenticeship in a psychological sense, but job in a regimen sense*
	Ph.D. student	*Both apprenticeship in terms of learning about publishing, but a job also*
	Student	*It's a provisional driving license*
Single career identity	Marine scientist	*Job and research question*
Multiple academic identities	Statistician, data scientist, data analyst	*Learning and training*
	Student, numerical researcher	*Apprenticeship*
	Researcher, academic, Ph.D. student	*Job, apprenticeship and answering research question*
	Scientist, Ph.D. student	*Answering a specific research question. . . becoming a master of something not just an apprentice*
	Student, research scholar	*Job*
	Ph.D. student, academic researcher, hybrid career	*More than a job because I am so invested in the outcome*
Multiple academic and career identities	Speech pathologist, Ph.D. student, researcher	*You do kind of have to think of a Ph.D. as a job*
	Pharmacist, Health economist	*Apprenticeship (to become health economist)*
	Civil engineer, lecturer, Ph.D. researcher	*Job*
	Ph.D. student, scientist, physicist	*Job*
	Clinician, researcher, tutor	*Job*
	Occupational therapist, Ph.D. student	*I see it as a job*
	Teacher, student, academic, researcher	*Unpaid job (in order to get to an academic career)*
	Research manager, anthropologist	*Job*
	Ph.D. student, lecturer, engineer	*Job*
	Physiotherapist, Ph.D. researcher	*Job*
	Student, marine biologist	*Job*

conceptualization of the Ph.D. process was associated with a sense that the Ph.D. served an intrinsic purpose and was accompanied by high levels of Ph.D. and career motivation.

> I20 [F, Engineering]: *I think, even before I started, I had in mind that it's like this kind of work, it's my job. It's not just showing up to lectures, doing assignments, it's like my work. It's 8 till 5 and or more (laughs), it's my responsibility so before I even started I knew that it was going to be like a job for me.*

Scaffolding Identity Construction

The analysis above suggests that SIMIC, and its claim that multiple identities are an important resource in times of identity change, may shed light on processes of identity construction. Specifically, as candidates were able to bring more identities to bare on the task of understanding their Ph.D. they were better able to articulate not only who they were, but also who their Ph.D. would help them to become in the future (see **Table 3**). We identified two main ways in which multiple identities were able to scaffold the construction of a sense of self in the present and into the future: identity management and identity certainty. The former captures the observation that students who had multiple academic identities could draw on them in creative ways in order to deal with the uncertainty associated with the Ph.D. identity and present themselves in positive and readily understandable ways to others. The latter captures the observation that Ph.D. candidates who had multiple mixed identities manifested much higher levels of certainty about who they were are were going to be; they also were more likely to identify the complementary and mutually reinforcing nature of their multiple identities as they looked to the future. In contrast, students who only were able to draw on a single student identity expressed high levels uncertainty and difficulties in negotiating discussions with others that related to their Ph.D. and in understanding what their Ph.D. was for.

Professional Models as Bridges From Present to Future Self

According to SIMIC, one reason that multiple identity resources can help people to cope with identity change is that they can provide continuity that connects who one was, who one is now, and who one will be in the future. Research into people's connections with those who act as models for a profession suggests that these individuals, by providing a concrete representation of a future professional identity, can also contribute to a sense of continuity between present and future selves (e.g., Ibarra, 1999; Morgenroth et al., 2015; Peters et al., 2015). In this section, we report analysis that explored whether there was any connection between Ph.D. candidates' ability to access multiple identity resources and their connections with salient professional models (i.e., their Ph.D. supervisors). We make two main observations: (1) candidates with multiple identity resources were more likely to see connections between their supervisors and who they wanted to become, and (2)

TABLE 3 | Illustrative quotes relating to the outcomes of identity resources.

Illustrative quotes ("What do you call yourself")
Theme 1: *Identity uncertainty*
Quote 1: Well I can't find anything but, uhh as you ask right now, something look like, uh Ph.D. student who (.) actually RHD student should say we are research (pause) scholar maybe. . .yeah maybe. I'm not sure!
Quote 2: I just say Ph.D. student. . .Actually, I'm a registered doctor in China, but here not a lot of people know that and I try not to tell them. . .yeah, but here I won't show that identity because it's not recognized here. . . So yeah. I cannot figure out I have a lot of identities yet. So maybe Ph.D. is my only identity. I don't want this. I want to find out answers. So, it's quite overwhelming.
Theme 2: *Identity management*
Quote 1: Um, I think it really depends on the situation. (long pause). On legal matters, uh (pause) I would say that I'm a researcher. And (.) like daily life interaction I would say that I'm a student.
Quote 3: I prefer Marine Biologist in that sense, just because of the connotation that tends to come along with student.
Quote 3: . . . But I tend to favor scientist because it's a broad term that people understand you know. You say to someone, particularly in normal populous, you say researcher and they go, "oh what do you do, what is that?" You say a scientist and they automatically think lab coats and stuff.
Theme 2: *Identity certainty*
Quote 1: I'm a mining engineer soon to be lecturer and professor
Quote 2: I normally tell them I'm doing a Ph.D. That I am doing research into bamboo structural element and also with relatable fire safety, and yeah it's basically what I say. . .Depending on the situation, I could also say that I am a civil engineer or I could also say that I am a lecturer.
Quote 3: I usually describe myself as a research manager but also as an anthropologist. And so – because to me they (pause) make us stronger. You know I share knowledge across that boundary. . .

incompatibility in candidates' identities and those of their supervisors and the profession more generally interfered with their ability to construct a future professional identity.

Identity Connections

We observed that students' identity resources were associated with the kind of connection they reported having with their supervisors. In particular, looking across interviewees' responses to the questions of whether their supervisor represented their profession, helped them to know how to get ahead and was a personal role model, three major ways of relating to the supervisor emerged (**Table 4** provides an overview of these themes): (1) as a *Doing model,* which described a supervisor as having particular skills and behaviors; (2) as a *Guidance model*, which described a supervisor able to provide personal guidance and support; and (3) as a *Being model,* which described a supervisor as someone who embodied a future self, or desired aspects of a future self.

Importantly, candidates with single student identities tended to describe the *Doing* style of role modeling. For these Ph.D. candidates, their descriptions were impersonal and somewhat passive, containing no reference to themselves as participants in the modeling process, and only describing supervisors as targets of impartial observation – "[someone who] *sets examples and tells you how you should be doing things*," [I09, Civil Engineering].

For candidates with multiple academic identities, they articulated supervisors as guiding and supporting them through the Ph.D. process – "*Someone who can be a guiding hand. Someone who can tell you when you are about to make a mistake and how to fix it*" [I05]. However, candidates who defined themselves in terms of multiple mixed identities tended to describe a *Being* model of supervision, articulating how the supervisor represented a future version of the self – "*down the track in a place that I see myself potentially being in the future*" [I02].

The interviews suggest that a wider range of self-aspects as well as higher levels of proactivity in identity construction may explain why multiple identity resources may have facilitated the establishment of a strong connection with their supervisor as an example of who they could be. Specifically, these candidates talked of agentically *selecting* the aspects of their supervisors which they thought were most aligned with their future identity needs. One candidate [I21, F, Materials Engineering] described how she was able to connect different elements of herself to the different yet complementary aspects of her supervisors:

> I21: *Um, I think, like I think aspects of both of them. They're very different. They're like incredibly different people. Um, and they're not, and I wouldn't want to emulate like either one of them in their entirety, um just because I think also think they're fundamentally different from me. Like, where all three of us are, like entirely different people. But there's aspects of both of them, um and they're different aspects that I think (.) act as like, "Okay that part of, that part of me I want to be more like (.) her. And that part of me I want to be more like that, and I think that's something I would like to emulate."*

Another candidate explained how she constructed her own identity by "borrowing" different aspects of her supervisors:

> I07 [F Communication]: *But other than that, we need to find (.) our (.) own (.) like uh quality that you really want and then we can borrow from this, this, this, this (gesturing borrowing from something) and then something we need to create–it on. Our identity (.)–build our own identity. So, I don't think that I lack of (laughs) role models around me. . .Yes. But I can pick up from–from many and some I need to construct myself.*

TABLE 4 | Illustrative quotes relating to different forms of identity construction.

Illustrative quotes
Theme 1: *Doing* model
I06: Someone we can observe and learn.
I09: Wouldn't use role model for workplace, would use mentor. A mentor sets examples and tells you how you should be doing things.
I03: this person is a genuinely good person. (Pause) Doing good stuff and do no harm . . . profession and personal life
Theme 3: *Guidance* model
I05: Someone you can look up to. Someone who can be a guiding hand. Someone who can tell you when you are about to make a mistake and how to fix it.
I13: Someone who lives by their word and who shares those values. They then provide a road map for you to follow.
I21: Um, I think it's their responsibility to be like you know almost like a guide and like they have to, you know they have a lot of experience, they've done this, um, for long time. Um, they're the ones that have like (.) um you know, the knowledge and they've done a Ph.D. before so they know exactly what you know, it's all about. I think they, it's their responsibility to guide you through the process and like look out for things that you may not necessarily be aware of and like, point them out to you, um and to you know, um, be, be a link.
Theme 2: *Being* model
I04: I guess someone that you look up to, that you kind of think is a bit impressive in their respective field, or their personal life, or something that's just a bit like, yeah I want to be like that. . .role modeling is a bit like patterning. . .
I02: Someone who does exemplify by their characteristics that I value like things that I want to be like and (.) and further in down the track in a place that I see myself potentially being in the future and then someone who sees me as well.
I07: Role model is something that we can learn about. Person has the qualities that I want to be like.

Identity Incompatibility

In line with a social identity theorizing, we observed that candidates' perceptions that there were important incompatibilities between their identities and those of their supervisors could present a barrier. In particular, an experience of identity discontinuity (e.g., in the form of, gender or cultural difference) between the candidate and their supervisor – as representative of a future academic identity, could inhibit this process. What follows presents a sample of some of the issues of identity dissonance evident in our sample. It is worth noting that whether these potential disablers of the identity construction process had negative effects was multiply determined, and factors such as the overall set-up of the supervisory team as well as a Ph.D. candidate's experiences of her or his overall learning environment could act as buffers.

Barriers to the identity construction process were often reported to result from differences related to gender, culture, value or experience. For example, a female engineering candidate described her struggle with the limited range of gender identities within academia:

> I01: *The women I know are in the academia they are um (pause)– a lot of them turn– turn to like a more of a male um personality. They become very harsh and dominant. And–And in order to like sort of um be successful you have to turn into– and I was going that way when I was a TA. I turned myself in to this rough, like very (.) um strong woman uh with the same (.) words that a male would have and this– that's not me.*

This particular candidate went on to talk about the outcomes of this sense of identity disconnection:

> I01: *All of that is hidden and it's not part of– and I've– and we're not one– we're not one person at work and one person– we're a whole person and we should be able to bring that uh naturally. We don't– we should be ourselves and that's not happening in academia specifically in the– in the engineering.*

Speaking to the issue of cultural identity discontinuity, one female international candidate described the beginning of her Ph.D. in Australia as an "*existential crisis*," [I17, F, Health and Social Science] that was embodied in her "*fraught*" relationship with her supervisors. She described not fully understanding Australian ways of being and she used the example of not knowing how to appear in different social situations, such as an interview. . . "*So, even things that like (.) like I said, I'm not even aware of (.) might be important.*" This candidate described how, at the start of her Ph.D. she tried to be "*more personable*" with her supervisors ("*. . .because I thought that was what Australian lecturers were like*") but that didn't work for her, and so she then tried to keep "*things strictly professional.*" This is seen in the following extract, in which she reflected on the way in which cultural differences are experienced in day-to-day interactions:

> I17: *And even more importantly I don't have a strong network within the school because, I mean, like it or not, it's an all-boys or girls club. So [pause] it's not just international students or Australian students or whatever, but it's really how you connect with your faculty other than your supervisors. And [supervisor] "D" was very clear about this. He said, you know like, like, someone asked him, another student asked him, (.) "how do people get grants?" and (.) he joked and he said "well basically I just open my door and walk down my corridor and whoever happens to be there [laughs] gets named on the grant." So, I don't appear at school (-) and most Ph.D. students don't appear at school very often. So, we don't have that network, we don't have that rapport. And I think it's also cultural, because I (.) I don't see them, I don't see other academics as peers, I see them as authority figures. I see them as teachers. So, I'm not about to (.) like slap some guy on the back and be like "hey how have*

you been? How was your day?" It, it's just not me. You know I, I maintain a, a, a, a healthy professional working relationship with my sup- all my supervisors.

DISCUSSION

In this paper, we aimed to understand how Ph.D. candidates went about constructing a future professional identity, and the role of multiple identities and identity compatibility in their construction attempts. While there are a growing number of students around the world who are taking advantage of the opportunity to undertake a Ph.D., the number of academic jobs on offer to them has largely stagnated (Mangematin, 2000). Of particular concern, women and members of minority groups are less likely to feature among the fortunate few who successfully transition from their Ph.D. to academia (Anders, 2004; Robinson-Neal, 2009).

To shed light on the processes of identity construction and its role in unequal professional outcomes, we drew on the SIMIC, which argues that the process of identity change is affected by having access to multiple identities. Although the identity construction context differs in important ways from those typically examined by SIMIC, our analysis suggests that multiple identities may be an important resource here too. In particular, we found that those Ph.D. candidates who were able to access multiple identities – whether in the form of distinct professional groups or multiple perspectives on their identities within the Ph.D. context – reported greater levels of certainty about who they were, who they wanted to be, and how their Ph.D. was helping them to get there. The benefits of multiple identities appeared to be particularly marked when they crossed professional domains (i.e., academia and another vocation). This could reflect the possibility that multiple mixed identities contribute to a richer and more multi-faceted sense of self; it is also possible that Ph.D. candidates who are able to access non-academic identities are particularly well placed to understand how the Ph.D. contributes to concrete professional goals and outcomes. Consistent with the latter possibility, these Ph.D. candidates were particularly likely to see their Ph.D. as a job, rather than an apprenticeship.

We also found that multiple identities appeared to provide a basis for seeing the Ph.D. supervisor (likely to be the most salient exemplar of the academic profession) as a model of who one could become in the future. There was some suggestion that this was because students with a richer and more multi-faceted sense of self were better able to identify and select aspects of their supervisors that they wished to emulate and become. We also found that Ph.D. candidates' perceptions that who they were was not compatible with the identities of their supervisor, obstructed their identity construction attempts. These findings align with previous work that claims that role models may have beneficial career outcomes by providing people with a bridge to a future self (e.g., Morgenroth et al., 2015), and extend them by suggesting that multiple identities may help people to find and use role models as they travel along their career paths. They also suggest that to the extent that underrepresented or minority groups have fewer identity resources (e.g., because they have moved countries) or experience greater identity incompatibility with their supervisors (e.g., as women in science) this may contribute to greater difficulties in constructing a future identity that will help them to advance in the profession. In this way, this analysis points to a novel leak in the academic career pipeline.

Implications

Whilst the experience of identity incompatibility was not rare among our sample, its particular form varied widely from one individual to another. In other words, it was not possible to identify which particular constellation of minority identities would form the basis for identity dissonance, as this was very much manifest in the eye of the beholder (Morgenroth et al., 2015). If this pattern were found to hold among Ph.D. students more generally, it has clear implications for the kinds of interventions that educational institutions should consider if they wish to support identity construction. In particular, the typical role model intervention – which involves wheeling out a highly successful member of a minority group for a brief presentation – is unlikely to work. This is not only because it is difficult to select the person who is most likely to be relevant to the identity incompatibility experienced by Ph.D. candidates, but it is also because the process of modeling needs to function on many levels – what to do, how to get there, and who to be.

Indeed, our research suggests that it is only by embedding students in diverse networks of professions (both inside and outside of universities), and peers, and by encouraging them to build and maintain their important groups both inside and outside of their Ph.D., that universities are most likely to support candidates in their attempts to construct the future career identities that underpin thriving and later success. That is, as universities continue to reshape the Ph.D. from unstructured apprenticeship to a more structured program that targets a range of competencies, they would do well to increase the opportunities for students to accrue more Ph.D.-related identities.

Limitations

At this point, it is important to acknowledge some major limitations of this work that temper our analysis and, especially, the conclusions that we reach. Our sample was not representative, and as we note earlier, had an over-representation of women, and in all likelihood, international students. It appears that those who are likely to experience identity incompatibility (under-represented groups) may have been more likely to self-select into the study, and to tell their story. Indeed, many of the participants in the course of their interview expressed a desire to tell their story in order to help other Ph.D. students who may find their experience a challenging one.

CONCLUSION

The importance of this research is two-fold. First, by investigating the mechanics of identity construction, we can begin to better define and so understand the outcomes of this process, particularly with a view to understanding continued inequalities

in professional outcomes. Second, once a social identity model of identity construction has been fully developed and tested, we can use this knowledge within applied settings to implement more effective processes and procedures to ensure that any barriers to the identity construction process are not only articulated but also addressed.

AUTHOR CONTRIBUTIONS

SB wrote the manuscript and conducted the main thematic analysis. KP, SH, and KG provided editorial guidance. KP provided an independent secondary level of analysis. SB and KP performed the analytic process and collaborated with SH and KG on the analytical findings.

FUNDING

This work was supported by a grant from the Australian Research Council (DE160100761) awarded to the SH and a grant from the Australian Research Council (FL110100199) awarded to the KG.

REFERENCES

Anders, S. (2004). Why the academic pipeline leaks: fewer men than women perceive barriers to becoming professors. *Sex Roles* 51, 511–521. doi: 10.1007/s11199-004-5461-9

Ashforth, B. E., Harrison, S. H., and Corley, K. G. (2008). Identification in organizations: an examination of four fundamental questions. *J. Manag.* 34, 325–374. doi: 10.1177/0149206308316059

Banks, J. A. (2008). Diversity, group identity, and citizenship education in a global age. *Educ. Res.* 37, 129–139. doi: 10.3102/0013189X08317501

Barrett, H. (2017). *Plan for Five Careers in a Lifetime. Financial Times*. Available at: https://www.ft.com/content/0151d2fe-868a-11e7-8bb1-5ba57d47eff7

Bentley, S. V., Greenaway, K. H., and Haslam, S. A. (2017). Cognition in context: social inclusion attenuates the psychological boundary between self and other. *J. Exp. Soc. Psychol.* 73, 42–49. doi: 10.1016/j.jesp.2017.06.008

Best, D. I., Lubman, D. I., Savic, M., Wilson, A., Dingle, G., Alexander Haslam, S., et al. (2014). Social and transitional identity: exploring social networks and their significance in a therapeutic community setting. *Ther. Commun.* 35, 10–20. doi: 10.1108/TC-04-2013-0007

Bosma, N., Hessels, J., Schutjens, V., Praag, M. V., and Verheul, I. (2011). Entrepreneurship and role models. *J. Econ. Psychol.* 33, 410–424. doi: 10.1016/j.joep.2011.03.004

Braun, V., and Clarke, V. (2006). Using thematic analysis in psychology. *Qualit. Res. Psychol.* 3, 77–101. doi: 10.1191/1478088706qp063oa

Braun, V., and Clarke, V. (2013). *Successful Qualitative Research : A Practical Guide for Beginners*. London: Sage.

Cheryan, S., and Plaut, V. (2010). Explaining underrepresentation: a theory of precluded interest. *Sex Roles* 63, 475–488. doi: 10.1007/s11199-010-9835-x

Cheryan, S., Siy, J. O., Vichayapai, M., Drury, B. J., and Kim, S. (2011). Do female and male role models who embody STEM stereotypes hinder women's anticipated success in STEM? *Soc. Psychol. Personal. Sci.* 2, 656–664. doi: 10.1177/1948550611405218

Clark Blickenstaff, J. (2005). Women and science careers: leaky pipeline or gender filter? *Gender Educ.* 17, 369–386. doi: 10.1080/09540250500145072

Dingle, G. A., Stark, C., Cruwys, T., and Best, D. (2015). Breaking good: breaking ties with social groups may be good for recovery from substance misuse. *Br. J. Soc. Psychol.* 54, 236–254. doi: 10.1111/bjso.12081

Dukerich, J. (2001). Review role transitions in organizational life: an identity-based perspective, perspective, by blake E. Ashforth. *Acad. Manag. Rev.* 26, 670–672.

Economist, T. (2010). *Why Doing a Ph.D. is Often a Waste of Time: The Disposable Academic*. Available at: https://www.economist.com/christmas-specials/2010/12/16/the-disposable-academic

Ellemers, N., Kortekaas, P., and Ouwerkerk, J. W. (1999). Self-categorisation, commitment to the group and group self-esteem as related but distinct aspects of social identity. *Eur. J. Soc. Psychol.* 29, 371–389. doi: 10.1002/(SICI)1099-0992

Greenaway, K. H., Wright, R. G., Willingham, J., Reynolds, K. J., and Haslam, S. A. (2015). Shared identity is key to effective communication. *Pers. Soc. Psychol. Bull.* 41, 171–182. doi: 10.1177/0146167214559709

Haslam, C., Holme, A., Haslam, S. A., Iyer, A., Jetten, J., and Williams, W. H. (2008). Maintaining group memberships: social identity continuity predicts well-being after stroke. *Neuropsychol. Rehabil.* 18, 671–691. doi: 10.1080/09602010701643449

Haslam, C., Jetten, J., Cruwys, T., Dingle, G., and Haslam, A. (2018). *The New Psychology of Health : Unlocking the Social Cure*. Florence: Routledge. doi: 10.4324/9781315648569

Haslam, C., Steffens, N. K., Branscombe, N. R., Haslam, S. A., Cruwys, T., Lam, B. C. P., et al. (2019). The importance of social groups for retirement adjustment: evidence, application, and policy implications of the social identity model of identity change: retirement adjustment and social identity change. *Soc. Issues Policy Rev.* 13, 93–124. doi: 10.1111/sipr.12049

Haslam, S. A., and Ellemers, N. (2011). *Identity Processes in Organizations*. New York, NY: Springer, 715–744. doi: 10.1007/978-1-4419-7988-9_30

Haslam, S. A., and McGarty, C. (2014). *Research Methods and Statistics in Psychology* (Second edition). London: SAGE.

Hermans, H. J. M., and Dimaggio, G. (2007). Self, identity, and globalization in times of uncertainty: a dialogical analysis. *Rev. Gen. Psychol.* 11, 31–61. doi: 10.1037/1089-2680.11.1.31

Hill, R. D., Castillo, L. G., Ngu, L. Q., and Pepion, K. (1999). Mentoring ethnic minority students for careers in academia: the WICHE doctoral scholars program. *Couns. Psychol.* 27, 827–845. doi: 10.1177/0011000099276007

Hoyt, C. L. (2013). Inspirational or self-deflating: the role of self-efficacy in elite role model effectiveness. *Soc. Psychol. Pers. Sci.* 4, 290–298. doi: 10.1177/1948550612455066

Ibarra, H. (1999). Provisional selves: experimenting with image and identity in professional adaptation. *Adm. Sci. Q.* 44, 764–791.

Ibarra, H., and Barbulescu, R. (2010). Identity as narrative: prevalence, effectiveness, and consequences of narrative identity work in macro work role transitions. *Acad. Manage. Rev.* 35, 135–154.

Iyer, A., Jetten, J., Tsivrikos, D., Postmes, T., and Haslam, S. A. (2009). The more (and the more compatible) the merrier: multiple group memberships and identity compatibility as predictors of adjustment after life transitions. *Br. J. Soc. Psychol.* 48, 707–733. doi: 10.1348/014466608X397628

Jetten, J., Branscombe, N., Haslam, S., Haslam, C., Cruwys, T., Jones, J., et al. (2015). Having a lot of a good thing: multiple important group memberships as a source of self-esteem. *PLoS One* 10:e0124609. doi: 10.1371/journal.pone.0124609

Jetten, J., Haslam, C., and Haslam, S. A. (2012). *The Social Cure: Identity, Health and Well-Being Hove England*. New York: Psychology Press.

Jetten, J., Haslam, S. A., Cruwys, T., Greenaway, K. H., Haslam, C., and Steffens, N. K. (2017). Advancing the social identity approach to health and well-being: progressing the social cure research agenda. *Eur. J. Soc. Psychol.* 47, 789–802. doi: 10.1002/ejsp.2333

Jetten, J., Haslam, S. A., Iyer, A., and Haslam, C. (2009). "Consequences of Giving or Receiving Help in the Context of Groups," in *The Psychology of Prosocial Behavior*, eds S. Sturmer and M. Snyder (Oxford: Wiley-Blackwell), 139–156.

Jetten, J., and Pachana, N. A. (2012). *Not Wanting to Grow old: A Social Identity Model of Identity Change (SIMIC) Analysis of Driving Cessation Among Older Adults*. New York, NY: Psychology Press.

Jolanda, J., Catherine, H., Haslam, S. A., and Nyla, R. B. (2009). The social cure. *Sci. Am. Mind* 20:26. doi: 10.1038/scientificamericanmind0909-26

Katz, D., and Kahn, R. L. (1978). *The Social Psychology of Organizations* (2d ed.). New York: Wiley.

Kelman, H. (1961). Processes of opinion change. *Public Opin. Q.* 25, 57–78. doi: 10.1086/266996

Larson, R. C., Ghaffarzadegan, N., and Xue, Y. (2014). Too many Ph.D. graduates or too few academic job openings: the basic reproductive number R0 in academia. *Syst. Res. Behav. Sci.* 31, 745–750. doi: 10.1002/sres.2210

Lockwood, P. (2006). "Someone like me can be successful": do college students need same-gender role models. *Psychol. Women Q.* 30, 36–46. doi: 10.1111/j.1471-6402.2006.00260.x

Mangematin, V. (2000). Ph.D. job market: professional trajectories and incentives during the Ph.D. *Res. Policy* 29, 741–756. doi: 10.1016/S0048-7333(99)00047-5

Markus, H., and Nurius, P. (1986). Possible selves. *Am. Psychol.* 41, 954–969. doi: 10.1037/0003-066X.41.9.954

Miscenko, D., and Day, D. V. (2016). Identity and identification at work. *Organ. Psychol. Rev.* 6, 215–247. doi: 10.1177/2041386615584009

Morgenroth, T., Ryan, M. K., and Peters, K. (2015). The motivational theory of role modeling: how role models influence role aspirants. goals. *Rev. Gen. Psychol.* 19, 465–483. doi: 10.1037/gpr0000059

Ng, N. W. K., Haslam, S. A., Haslam, C., and Cruwys, T. (2018). How can you make friends if you don't know who you are? A qualitative examination of international students' experience informed by the social identity model of identity change. *J. Commun. Appl. Soc. Psychol.* 28, 169–187. doi: 10.1002/casp.2349

Oakes, P. J., and Haslam, S. A. (1994). *Stereotyping and Social Reality*. Oxford: Wiley-Blackwell.

Oakley, J. (2000). Gender-based barriers to senior management positions: understanding the scarcity of female CEOs. *J. Busin. Ethics* 27, 321–334. doi: 10.1023/A:1006226129868

Obodaru, O. (2012). The self not taken: how alternative selves develop and how they influence our professional lives.(Report). *Acad. Manag. Rev.* 37, 34–57. doi: 10.5465/amr.2009.0358

Peters, K., Ryan, M. K., and Haslam, S. A. (2015). Marines, medics, and machismo: lack of fit with masculine occupational stereotypes discourages men's participation. *Br. J. Psychol.* 106, 635–655. doi: 10.1111/bjop.12106

Platow, M. J., and van Knippenberg, D. (2001). A social identity analysis of leadership endorsement: the effects of leader ingroup prototypicality and distributive intergroup fairness. *Pers. Soc. Psychol. Bull.* 27, 1508–1519. doi: 10.1177/01461672012711011

Praharso, N. F., Tear, M. J., and Cruwys, T. (2017). Stressful life transitions and wellbeing: a comparison of the stress buffering hypothesis and the social identity model of identity change. *Psychiatry Res.* 247, 265–275. doi: 10.1016/j.psychres.2016.11.039

Robinson-Neal, A. (2009). Garcia, J. E., and Hoelscher, K. J. (2008). Managing diversity flashpoints in higher education. *Int. J. Multicult. Educ.* 11.

Sluss, D., and Ashforth, B. (2008). How relational and organizational identification converge: processes and conditions. *Organ. Sci.* 19, 807–823. doi: 10.1287/orsc.1070.0349

Steffens, N. K., Cruwys, T., Haslam, C., Jetten, J., and Haslam, S. A. (2016). Social group memberships in retirement are associated with reduced risk of premature death: evidence from a longitudinal cohort study. *BMJ Open* 6:e010164. doi: 10.1136/bmjopen-2015-010164

Steffens, N. K., Haslam, S. A., Ryan, M. K., and Kessler, T. (2013). Leader performance and prototypicality: their inter-relationship and impact on leaders' identity entrepreneurship. *Eur. J. Soc. Psychol.* 43, 606–613. doi: 10.1002/ejsp.1985

Stout, J. G., Dasgupta, N., Hunsinger, M., and McManus, M. A. (2011). STEMing the tide: using ingroup experts to inoculate women's self-concept in science, technology, engineering, and mathematics (STEM). *J. Pers. Soc. Psychol.* 100, 255–270. doi: 10.1037/a0021385

Tabuteau-Harrison, S. L., Haslam, C., and Mewse, A. J. (2016). Adjusting to living with multiple sclerosis: the role of social groups. *Neuropsychol. Rehabil.* 26, 36–59. doi: 10.1080/09602011.2014.993403

Tajfel, H., and Turner, J. C. (1979). "An integrative theory of intergroup conflict," in *The Social Psychology of Intergroup Relations*, eds W. G. Austin and S. Worchel (Monterey, CA: Brooks/Cole Pub. Co.), 33–47.

Turner, J. C. (1982). *Social Identity and Intergroup Relations*. Cambridge: Cambridge University Press.

Turner, J. C., Hogg, M. A., Oakes, P. J., Reicher, S. D., and Wetherell, M. S. (1987). *Rediscovering the Social Group: A Self-Categorization Theory*. New York, NY: Basil Blackwell.

Turner, J. C., Oakes, P. J., Haslam, S. A., and McGarty, C. (1994). Self and collective: cognition and social context. *Pers. Soc. Psychol. Bull.* 20, 454–463. doi: 10.1177/0146167294205002

Warner, D., and Palfreyman, D. (2001). *The State of UK Higher Education: Managing Change and Diversity: Buckingham England: Society for Research into Higher Education*. Philadelphia, PA: Open University Press.

White, K. (2004). The leaking pipeline: women postgraduate and early career researchers in Australia. *Tertiary Educ. Manag.* 10, 227–241. doi: 10.1080/13583883.2004.9967129

Wright, S., Wong, A., and Newill, C. (1997). The impact of role models on medical students. *J. Gen. Intern. Med.* 12, 53–56. doi: 10.1046/j.1525-1497.1997.12109.x

Conflict of Interest Statement: The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

APPENDIX

Interview Transcription

The constructs addressed in this paper are (a) interviewees' perspectives on their own identities in the context of their Ph.D., (b) their thoughts on the proto-typicality of their chosen identity within the academic context, (c) the compatibility of that identity with other identities, and (d) their supervisor's identity. The data relating to these constructs was drawn from various sections of the interview, and these sections are outlined below, and highlighted in yellow.

Interview Schedule for Ph.D. Students

Please note that the schedule below does not need to be read out verbatim, but should serve as a guide and prompt to your own conversational style.

You do not need to ask every single question if you feel that some of the topics have already been covered during the conversation's flow. Take notes to help you keep track.

Required:

1. Interview schedule
2. Information sheet
3. Consent form
4. Reflection notes form
5. ipad for recording
6. Pen to take notes

Introduction

Hi, I'm [name], a student in the School of Psychology, and I am working with Sarah Bentley and Kim Peters on a project that aims to explore people's understandings of academic professions and the Ph.D. supervision relationship. This interview will take about 50 minutes, and with your permission I will use my ipad to audio-record it for later transcription.

Here is the information sheet, which will provide you with further information about this study.

Please read this through carefully, and sign the consent form if you are happy to take part today.

[Hand over information and consent sheets, and ask the interviewee to complete them. You will then need to sign the consent form as the witness].

Do you have any questions before we start?

Background Information

To start with, I'd like to find out a little more about you and your supervisory relationships.

1. So what discipline do you work in? What year of you Ph.D. are you in, and what milestones have passed?

[The next question is to just get things warmed up, and to encourage the interviewee to talk generally about why they are doing what they are doing. Try and be as minimal as possible with these prompts to allow the interviewee to talk freely rather than you steering them]

1. So why are you doing a Ph.D.?
2. . . . and what does it mean to you?
3. Do you see the Ph.D. a job? An apprenticeship? Or are you trying to answer a specific research question?
4. Can you tell me how and why your research question came about?
5. Tell me about your supervisory relationships. . .
    a. What is the supervisory set-up (number of supervisors, supervisory ratio, e.g., 50/50, 20/80 etc.)
    b. How did you choose your supervisor/s?

I'd like to hear a little about the day-to-day structure of your supervisory set up:

a. How often do you meet?
b. With whom (i.e., one supervisor or all both, in the case of multiple supervision)?
c. On a regularized or *ad hoc* basis?
d. Who manages the agenda, and who leads the meetings?
e. Are there lab group meetings, and if so do you go to them?
f. Do you have interactions with other Ph.D. students?

Your Professional Identity

Now I'm interested in finding out about your identity or sense of who you are at work. People who work in universities use various different terms to describe their profession or role, including researcher, academic, scientist, economist, geographer, student and so on

[(a): Interviewees' perspectives on their own identities in the context of their Ph.D.]

When you meet new people and they ask what you do, what do you tell them?

1. Is this the best way of describing what your profession or work is about? If not, what term would be more appropriate?
2. Looking back, when did you start to think of yourself as being a [interviewee's term/s]? Five years ago did you think this is what you would be doing? Is it how you imagined it would be?
3. Can you see yourself continuing to be a [interviewee's term/s] in the future? What impact, if any, will completing your Ph.D. have? If you think your profession will change, what will it be then?

[(b) their thoughts on the proto-typicality of their chosen identity within the academic context]

1. Can you tell me what it means to be a [interviewee's term/s]. That is, what are the goals, values, characteristics and behaviors that you associate with the ideal [interviewee's term/s]?
2. Looking back over your career* so far [*for a younger interviewee this maybe be "educational pathway" rather than career], how has your understanding of what it means to be a [interviewee's term] changed?
3. What has affected your understanding of what it means to be a [interviewee's term]?

[If the interviewee is finding it hard to articulate any of the above, try to find out why this is: "Do other Ph.D. students also find it hard to identify their profession and its goals and values?"]

[(c) the compatibility of that identity with other identities]

1. Do the goals and values that you mentioned before match your own personal goals, values and characteristics?
2. Do you feel you fit in in [interviewee's term/s]?
3. Do you feel that being a [interviewee's term/s] is compatible with the rest of your life and the people in it? Does it fit with how you see yourself as a person?

Your Profession and Your Supervisor

In this section I am going to you a few questions about your own Ph.D. supervisor. In the first instance, I'm interested in your thoughts about the relationship between your supervisor and your identity as a [interviewee's term].

[Remember, if there are multiple supervisors, adopt the questions below to cater for this]

[(d) their supervisor's identity]

1. Do you think your supervisor is a typical [interviewee's term/s]? That is, does your supervisor exemplify the values, characteristics and behaviors of the ideal [interviewee's term] that you mentioned earlier?
   a. If yes, in what ways? If not, why not?
2. Does your supervisor help you understand what you need to do to advance in your career in the way you want to? [For those students who are looking for a career outside of academia, does their supervisor know this, and has the supervisor encouraged them to consider academia?]

I am going to shift the focus of the interview a bit now to ask about role modeling. However, before we talk about your experiences of role modes, I want to find out what this term means to you in a very general sense.

[Identity navigation]

1. What do you think a role model is? If you were to say that someone was a personal role model for you, what would you mean?
2. On the basis of that definition, would you say that your Ph.D. supervisor is a role model for you?
   a. If yes, why? If no, why not?
3. Is there anyone else who is a role model for you currently in your work?
   a. If yes, who is this person and why are they a role model?
4. Do you ever feel that you lack role models in any aspects of your work?
   a. If yes, what were you looking for?
5. You said that your supervisor [is/is not] a role model for you. Do you think that this matters in anyway for your Ph.D. and career development? In other words, would anything be different if you had a supervisor who [was not/was] a role model for you?

The Supervisory Dynamic

In this final part of the interview, I am interested in your thoughts about the importance of the Ph.D. supervisory relationship and the different responsibilities of students and supervisors.

[Reflection on Identity navigation]

1. Research suggests that the Ph.D. supervisor/student relationship is of central importance when it comes to the learning and career outcomes of the student.
   a. Why do you think this is?
   b. How does this map onto your own experience?
2. Thinking about your experience as a Ph.D. student, do you think that a supervisor is responsible for the success or failure of their students?
3. What *specifically* do you think a supervisor is responsible for in the context of the relationship, and what is the responsibility of the student?

[If not mentioned, you can ask about responsibility for learning, teaching, designing research questions, getting publishable findings, showing initiative, passion, keeping on schedule etc.]

1. In what specific ways does your supervisor meet/not meet his or her responsibilities as a supervisor?
2. If you were supervising a student, would you do things differently?
3. Do you think you are a good Ph.D. student?
4. . . .why do you think that? (For instance feedback from supervisor? Given or sought?)
5. Do you think your supervisor/s thinks the same?
6. Do you envisage working with your supervisor beyond your Ph.D.?

Thank you so much for your time.

In our research we are interested in in the different kinds of supervisory relationships that occur in different disciplines and how they impact on the success or otherwise of the Ph.D. student's career. Is there anything else you would like to talk about with regard to this question?

frontiers in Psychology

ORIGINAL RESEARCH
published: 27 March 2019
doi: 10.3389/fpsyg.2019.00575

Looking Beyond Our Similarities: How Perceived (In)Visible Dissimilarity Relates to Feelings of Inclusion at Work

Onur Şahin[1], Jojanneke van der Toorn[1,2], Wiebren S. Jansen[1], Edwin J. Boezeman[2] and Naomi Ellemers[1]*

[1] Department of Social, Health and Organizational Psychology, Utrecht University, Utrecht, Netherlands, [2] Department of Social and Organizational Psychology, Institute of Psychology, Leiden University, Leiden, Netherlands

We investigated how the perception of being dissimilar to others at work relates to employees' felt inclusion, distinguishing between surface-level and deep-level dissimilarity. In addition, we tested the indirect relationships between surface-level and deep-level dissimilarity and work-related outcomes, through social inclusion. Furthermore, we tested the moderating role of a climate for inclusion in the relationship between perceived dissimilarity and felt inclusion. We analyzed survey data from 887 employees of a public service organization. An ANOVA showed that felt inclusion was lower for individuals who perceived themselves as deep-level dissimilar compared to individuals who perceived themselves as similar, while felt inclusion did not differ among individuals who perceived themselves as surface-level similar or dissimilar. Furthermore, a moderated mediation analysis showed a negative conditional indirect relationship between deep-level dissimilarity and work-related outcomes through felt inclusion. Interestingly, while the moderation showed that a positive climate for inclusion buffered the negative relationship between deep-level dissimilarity and felt inclusion, it also positively related to feelings of inclusion among all employees, regardless of their perceived (dis)similarity. This research significantly improves our understanding of how perceived dissimilarity affects employees by distinguishing between surface-level and deep-level dissimilarity and by demonstrating the importance of a climate for inclusion.

Keywords: dissimilarity, inclusion, climate for inclusion, surface-level, deep-level

OPEN ACCESS

Edited by:
Christopher T. Begeny, University of Exeter, United Kingdom

Reviewed by:
Kimberly T. Schneider, Illinois State University, United States
Kathryn L. Boucher, University of Indianapolis, United States

****Correspondence:***
Onur Şahin
o.sahin@uu.nl

Specialty section:
This article was submitted to Organizational Psychology, a section of the journal Frontiers in Psychology

Received: *14 September 2018*
Accepted: *01 March 2019*
Published: *27 March 2019*

Citation:
Şahin O, van der Toorn J, Jansen WS, Boezeman EJ and Ellemers N (2019) Looking Beyond Our Similarities: How Perceived (In)Visible Dissimilarity Relates to Feelings of Inclusion at Work. Front. Psychol. 10:575. doi: 10.3389/fpsyg.2019.00575

INTRODUCTION

The sharp increase in workforce diversity during the last decades presents important challenges for organizations and employees to overcome. A well-established finding is that dissimilarity between individuals can impede mutual trust and understanding, and challenge social integration in the workplace, which have been associated with (team) performance losses and increased employee turnover (Chattopadhyay, 1999; Garrison and Wakefield, 2010; Guillaume et al., 2012). Dissimilarity between workers has been related to surface-level (relatively visible or readily detected) attributes such as gender, age, and ethnicity, or to deep-level (less visible or underlying) attributes such as beliefs and values (Phillips and Loyd, 2006; Jackson and Joshi, 2011;

Guillaume et al., 2012; Mor Barak et al., 2016). In the current research, we will not examine the objective classification of specific attributes. Instead, we will address employees' subjective perceptions of their surface-level and deep-level dissimilarity to other people at work. We will also not focus on a specific comparison group (e.g., a specific target group such as direct colleagues, supervisors or customers), but rather are interested in employees' general perception of being dissimilar to most others at work.

Even though prior work suggests that surface-level and deep-level dissimilarity are both negatively related to work outcomes, the ways in which they impact employees are likely to differ. For example, surface-level dissimilarity has been shown to have a negative effect on social integration only under low team interdependence, while deep-level dissimilarity had a stronger negative effect on social integration under high interdependence than under low interdependence (Guillaume et al., 2012). This suggests that the two types of dissimilarity can have different effects, and/or that their effects depend on different moderating factors. Yet, the correlates and implications of these different types of dissimilarity have not been systematically established. Hence, we do not yet know whether surface-level or deep-level dissimilarity is more predictive of employees' sense of inclusion and its downstream work-related consequences. It is also unknown whether they operate independently, buffer, or reinforce one another. Furthermore, while previous research has indicated that an inclusive work climate buffers the negative effects of surface-level dissimilarity on inclusion (Jansen et al., 2017), it is unclear whether the negative effects of deep-level dissimilarity can be mitigated in similar ways. Answering these questions is highly important considering that employees likely differ from others at work in terms of both surface-level and deep-level dimensions. Hence, this study contributes to existing knowledge by investigating the separate and joint influences of surface-level and deep-level dissimilarity on social inclusion, as well as the moderating role of the work climate in these relationships.

Dissimilarity at Work

As indicated above, dissimilarity has been found to negatively affect a variety of work outcomes (Hobman et al., 2004; Liao et al., 2008; Guillaume et al., 2012). Hobman et al. (2004), for example, found that employees who perceived themselves to have a different demographic profile than their colleagues (i.e., in terms of visible and informational characteristics) were less involved in their workgroup. Liao et al. (2008), furthermore, found perceived deep-level dissimilarity on the basis of personality to be associated with worse job attitudes, less helping behavior, greater work withdrawal, and greater voluntary turnover.

There are several mechanisms through which dissimilarity is thought to affect employees. One mechanism concerns ingroup bias on the part of numerical majority members, leading them to discriminate against and otherwise mistreat those who are dissimilar to them (Van Laer and Janssens, 2011; Williams and Dempsey, 2014; Drydakis, 2015; Waldring et al., 2015; Midtbøen, 2016; Mishel, 2016; Van den Berg et al., 2017; Yavorsky, 2017). Another mechanism, observed among numerical minority members, relates to their increased monitoring of the self and the environment; Employees representing a numerical minority tend to be more engaged in monitoring their performance and the workplace for cues about who belongs and who does not. Their preoccupation with social acceptance cues diverts cognitive resources away from task performance and has important work-related consequences (Murphy et al., 2007; Guillaume et al., 2014; Master et al., 2016; see also Ståhl et al., 2012). Even cues that are not intended to exclude people, such as all-White conference speakers or pictures of male leaders in the company canteen, might undermine performance and lower feelings of inclusion among those not represented by these cues (Latu et al., 2013; Cheryan et al., 2014; Murphy et al., 2018). Furthermore, through the mechanism of similarity-attraction (Byrne, 1997), minority members may self-segregate into minority subgroups. This process is stronger in people who are more aware of their minority status (Schmader and Sedikides, 2018) and, by further detaching them from others at work, adds to the disadvantages that dissimilar people face through the mechanisms discussed above.

Of the previous work studying the relationship between dissimilarity and work outcomes, some studies used objective measures of dissimilarity (e.g., quantifying the degree of dissimilarity based on the demographic composition of work teams, Jansen et al., 2017) while others used subjective measures (e.g., asking participants whether they feel dissimilar to other team members; Hobman et al., 2004). Because we are interested in the experiences of employees, and because several studies indicated perceived dissimilarity to have stronger effects than actual dissimilarity (Turban et al., 1988; Strauss et al., 2001), the current research utilizes a subjective measure of dissimilarity.

In the current study, we use the terms "surface-level" and "deep-level" to capture the full range of attributes that could lead to perceived dissimilarity in the work context, because these were used to study dissimilarity in previous research (e.g., Guillaume et al., 2012). These attributes can include age, ethnicity, gender, beliefs, values, or sexual orientation. We acknowledge it is not self-evident whether an attribute is surface-level or deep-level, or both. This can depend on many factors, such as the extent to which the attributes are expressed in overt behavior or verbally acknowledged. Furthermore, the degree to which people perceive themselves to be surface-level and/or deep-level dissimilar to others can be indicated by multiple attributes they have as well as the intersection of these attributes. For example, employees who are bisexual could perceive themselves as surface-level and/or deep-level dissimilar to their heterosexual colleagues, which may, for example, depend on whether they have a same-sex or opposite-sex partner. Transgender employees might perceive themselves to be deep-level dissimilar in terms of their gender identity, while their perception of surface-level dissimilarity may depend on the particulars of their gender expression. Both surface-level and deep-level dissimilarity were shown to have a negative relationship with important work-related outcomes, such as employee performance and turnover (Guillaume et al., 2012), work group involvement (Hobman et al., 2004) and helping behavior (Liang et al., 2015).

Even though the relationship between dissimilarity and work-related outcomes is widely studied, very little research has focused on the effects of dissimilarity on employees' sense of social inclusion at work. The construct of social inclusion refers to individuals' perception that they belong and can be their authentic selves in a particular context (Jansen et al., 2014), such as the workplace. Understanding the relationship between dissimilarity and inclusion at work is important, since inclusion has been related to several outcomes that may have far-reaching implications for both employees and organizations, such as well-being and performance (Sønderlund et al., 2017; Chen and Tang, 2018). One study that did examine the relationship between gender dissimilarity and felt inclusion is the research by Jansen et al. (2017), which demonstrated a lower sense of belonging and authenticity among those who diverged more (versus less) from the rest of the work team in terms of gender. This prior work is limited, however, in the sense that it addressed actual dissimilarity rather than subjectively perceived differences, and only focused on a single surface-level characteristic, namely gender. With the current research, we aim to contribute to the organizational diversity literature by examining the separate and interactive effects of perceptions of surface-level and deep-level dissimilarity on employees' feelings of inclusion. Because previous research demonstrated felt social inclusion to relate to important work outcomes (e.g., Derks et al., 2007; Jansen et al., 2017; Chen and Tang, 2018), we will not only address social inclusion, but additionally investigate its relationships with job satisfaction, work-related stress, turnover intentions, career commitment and career advancement motivation in the organization.

Whether surface-level and deep-level dissimilarity differentially affect employees and whether they reinforce one another is not only of theoretical importance but also of practical relevance because surface-level and deep-level dissimilarity are not necessarily overlapping or independent. Employees may both look different than others at work (e.g., in terms of skin color suggesting a different ethnicity) and hold different values to them, but it is also possible that they look very similar yet hold different values or that they look very different yet hold the same values. Hence, it is important to disentangle their separate and joint effects.

Based on the research summarized above, we anticipate that – in principle – both types of perceived dissimilarity will be negatively related to feelings of inclusion. As no previous work has addressed the separate and combined effects of surface-level and deep-level dissimilarity on social inclusion or examined possible differences in their predictive strength, we have no specific hypotheses regarding their relative and interactive effects. These will be investigated in an exploratory fashion.

Feeling included is theorized to satisfy two fundamental human needs, the need to belong and the need to be authentic. Accordingly, inclusion has been found to be vital for employee motivation, performance, and wellbeing (Jansen et al., 2014). More specifically, inclusion was shown to be a key predictor of work satisfaction. This may not be surprising, given that inclusion at work also implies, for example, taking part in informal events or being part of information networks (Waters and Bortree, 2012). Conversely, when employees feel excluded at work, negative effects are likely to occur. Exclusion may increase stress levels (Ryan et al., 2005; Beekman et al., 2016), and is arguably a reason for employees to leave the organization. That is, employees whose fundamental inclusion needs are frustrated may be less likely to stay in their current situation. Preliminary evidence of this relationship comes from research showing that dissimilarity positively relates to turnover intentions, but this relationship is weaker if the organizational climate is supportive of diversity (Gonzalez and Denisi, 2009), likely because such a climate facilitates a sense of inclusion. For these reasons, we hypothesize that feelings of inclusion will mediate the relationship between perceived dissimilarity on the one hand and job satisfaction, work-related stress and turnover intentions on the other.

Recent qualitative research on the career ambitions of women in traditionally masculine environments (i.e., making it likely that they feel dissimilar to their colleagues at work) indicated that women who reported decreased belonging and authenticity, indicating a lack of perceived inclusion, also expressed little ambition to move up the organizational ladder (Sealy and Harman, 2017). Furthermore, stigmatized groups who do feel devalued at work were found to have lowered motivation to perform and grow in the organization (Derks et al., 2007). To further explore the relationship between inclusion and career ambition, we also included the career advancement motivation in the organization as a relevant work outcome in our research. In addition, we address the implications of perceived dissimilarity and felt inclusion for the degree to which participants are committed to their career. This is based on recent findings indicating a link between inclusion and organizational commitment (Harrison et al., 1998; Chen and Tang, 2018).

In summary, we derive the following hypotheses:

- H1a: Perceived surface-level and deep-level dissimilarity negatively relate to felt inclusion.
- H1b: Perceived surface-level and deep-level dissimilarity negatively relate to key work-related outcomes, namely job satisfaction, work-related stress, turnover intentions, career commitment, and career advancement motivation.
- H2: Felt inclusion mediates the relationships between perceived dissimilarity and work-related outcomes.

Climate for Inclusion

Even though a gloomy picture indicating the negative effects of dissimilarity emerges from prior research, there are also studies suggesting that dissimilarity is not necessarily detrimental to employees. Some previous work has indicated that diverse teams enjoy more beneficial work outcomes when they perceive their organizational climate as inclusive (Nishii, 2013; Bodla et al., 2016; Li et al., 2017). An inclusive climate ensures fair and unbiased treatment of employees, is open toward and values differences between employees, and includes all employees in decision making (Nishii, 2013). There is some indication that the benefits of such an organizational climate may also apply to feelings of social inclusion. Jansen et al. (2017) found that perceiving the work environment to be open toward and appreciative of differences (i.e., as a "diversity climate") was

positively associated with felt inclusion for all employees, but more strongly so for those who were highly dissimilar to most others. In fact, perceiving a positive diversity climate buffered the negative effect of gender dissimilarity on feelings of inclusion, such that dissimilarity was only related to reduced inclusion when employees perceived a negative diversity climate. These findings can likely be generalized to a climate for inclusion since the latter subsumes the diversity climate notion of openness toward and appreciation of differences. Accordingly, we expect that a positive climate for inclusion will, similarly, shield employees from the negative effects of perceived dissimilarity on inclusion.

H3a: Perceived climate for inclusion moderates the relationship between perceived dissimilarity and felt inclusion, such that the negative relationship between perceived dissimilarity and felt inclusion is weaker the more inclusive the climate is perceived to be.

H3b: Perceived climate for inclusion positively relates to felt inclusion.

MATERIALS AND METHODS

Participants

This study was carried out in accordance with the recommendations of the Psychology Research Ethics Committee (PREC) at Leiden University. All participants gave informed consent in accordance with the Declaration of Helsinki. The protocol was approved by the PREC. All employees of a governmental organization in the Netherlands, approximately 4000 people, were invited to participate in our online study. Of these people, 1326 employees opened and started the questionnaire. Our study sample consisted of the 887 employees who completed the questionnaire (40.34% male, 58.53% female, 1.13% chose not to answer this question, 0.23% missing, M_{age} = 45.61, SD_{age} = 11.80). Participants had been working at the organization for 12.47 years on average (SD = 10.55) and worked 32.50 hours a week on average (SD = 5.02). Furthermore, 10.50% of participants held a senior position (0.11% missing), 4.63% were trainees (2.59% missing), and 82.64% neither held a senior position nor was a trainee. The sample was relatively highly educated, with 41.66% having completed university education, 37.74% having completed higher professional education, 16.57% having completed middle vocational education, 1.27% having completed lower vocational education and 2.76% having completed secondary education (2.03% missing).

Procedure and Measures

The organization's employees received an email with a link to our on-line survey. After providing informed consent, participants first completed a demographics form, which asked them to indicate their sex, age, educational level, tenure, number of hours work per week and whether they are a senior or trainee. These questions were followed by measures of perceived dissimilarity, perceived climate for inclusion, felt inclusion, job satisfaction, work-related stress, turnover intention, career commitment, and career advancement motivation.[1]

Perceived Dissimilarity

Perceived dissimilarity was measured using two items, which were adapted from the work of Hobman et al. (2004). To assess surface-level dissimilarity, participants were asked whether they perceived themselves to be *visibly* dissimilar to others at work: "In terms of visible characteristics (e.g., age, sex, ethnicity), I am different than most others at work." To assess perceived deep-level diversity, they were asked whether they perceived themselves to be *invisibly* different to others at work: "In terms of invisible characteristics (e.g., beliefs, preferences), I am different than most others at work." The answer options provided were "*yes*" and "*no*," resulting in the possibilities of being dissimilar in both deep-level and surface-level terms, being dissimilar in either deep-level or surface-level terms and lastly being similar to most others.[2]

Perceived Climate for Inclusion

The extent to which participants perceived the climate to be inclusive was measured using a 12-item scale that was developed to capture how people think about, talk about and treat others who are dissimilar to most others. This questionnaire was developed as a screener of climate for inclusion. Participants were asked to indicate how "people who are visibly or invisibly dissimilar than most others" are being treated at work. They did so on a bipolar scale by indicating the extent to which they agreed more with the statement on the left side or with the statement on the right side. The scores ranged from 1 (agreeing most with the left statement) to 7 (agreeing most with the right statement) with a higher score indicating a more inclusive climate. Examples of items are: "They are being disadvantaged at work when making decisions about tasks, salary, etc. – They are being taken into account when making decisions about tasks, salary, etc.," "They are being seen as an inconvenience – They are being seen as an asset," and "They are being treated worse than others – They are being treated as people that are valuable" (α = 0.96).

Felt Inclusion

The extent to which participants felt included at work was measured with the Perceived Group Inclusion Scale (PGIS; Jansen et al., 2014). This 16-item scale consists of two subscales (belonging and authenticity), which in turn each comprised two components. Belonging comprised group membership (e.g., "People at work give me the feeling that I am part of this group.") and group affection (e.g., "People at work like me").

[1]One of the objectives of this study was to validate our measure of the perceived climate for inclusion. Our survey thereto included additional measures that assessed the perceived diversity climate (Hobman et al., 2004), the perceived inclusivity of the organizational culture (Ashikali and Groeneveld, 2015), interpersonal justice (Colquitt, 2001), and social desirability (Rudmin, 1999).

[2]Contrary to Hobman's approach (2004), we chose to use a single dichotomous item for each type because we wanted to clearly distinguish between employees who perceive themselves as dissimilar and employees who perceive themselves as similar to most others at work. This way, there would be no doubt that the participants intended to categorize themselves as dissimilar or similar. The implications of this choice are further discussed in the Section "Limitations and Future Research."

Authenticity comprised room for authenticity (e.g., "People at work allow me to be who I am.") and value in authenticity (e.g., "People at work encourage me to be who I am."). Each component consists of four items. An exploratory factor analysis (EFA) with oblique (Oblimin) rotation indicated that all items loaded highly on a single factor with all factor loadings exceeding 0.80 (see **Supplementary Table A** for factor loadings of the one-factor solution). In line with the theoretical components, the parallel analysis (PA) confirmed that four factors with significant Eigenvalues could be distinguished (see **Supplementary Table B** for the factor loadings on four factors). In the current study, we used inclusion as a single variable because the four factors (group membership, group affection, room for authenticity, and value in authenticity) are the theoretical subdimensions of inclusion (Jansen et al., 2014). The response options ranged from 1 (*completely disagree*) to 7 (*completely agree*) with a higher score indicating that participants felt more included ($\alpha = 0.97$).

Job Satisfaction

The extent to which participants were satisfied with their job was assessed with the three items used by Mitchell et al. (2001): "All in all, I am satisfied with my job," "In general, I enjoy my job" and "I am very satisfied with my job." The last item was slightly adapted, as it originally referred to workplace satisfaction instead of job satisfaction. The response options ranged from 1 (*completely disagree*) to 7 (*completely agree*). A higher score indicated more job satisfaction ($\alpha = 0.92$).

Work-Related Stress

We measured participants' work-related stress with a scale developed by Hadzibajramovic et al. (2015). Participants indicated how they felt at the end of a work day, using the following six items: "calm," "rested," "relaxed," "tense," "stressed," and "pressured." The response options ranged from 1 (*not at all*) to 6 (*very much*). The last three items were reverse-coded, such that a lower score on the scale indicated more stress ($\alpha = 0.92$).

Turnover Intentions

The turnover intentions of participants were measured with a scale developed by Van Velthoven and Meijman (1994), consisting of four questions that the participants could answer with "yes" or "no." Example items are: "I am planning to change jobs in the coming year," and "I sometimes think about looking for a job outside this organization." The answers were coded 0 (*yes*) or 1 (*no*) and the mean score of the four items was taken as the dependent variable. A lower score corresponded to a higher intention to leave ($\alpha = 0.76$).

Career Commitment

The degree to which participants were committed to their career was assessed with a modified version of a scale developed by Ellemers et al. (1998). The scale consisted of six statements, with scores ranging from 1 (*not at all*) to 7 (*very much*). Example items are: "My career plays a central role in my life" and "I think I should have a successful career." A higher score corresponded to a stronger commitment to one's career ($\alpha = 0.86$).

Career Advancement Motivation Within Organization

We measured participants' career advancement motivation using a self-developed scale consisting of five statements, with scores ranging from 1 (*not at all*) to 6 (*very much*). This measure records the willingness of employees to invest in the career at, and on behalf of, the organization. The items are: "I am motivated to exploit all the career opportunities that I will get at this organization," "I am willing to invest effort to further my development in this organization," "I am willing to do my best to advance my career in this organization," "I would like to continue my career in this organization," and "It is my wish to develop my career in this organization." A higher score corresponded to a greater career advancement motivation ($\alpha = 0.87$).

RESULTS

Analyses were conducted using R software 3.5.1 (R Core Team, 2018), using the *Hmisc* (*v4.1-1;* Harrell, 2018), *car* (*v3.0-2;* Fox and Weisberg, 2011), *sjstats* (*v0,17.0;* Lüdecke, 2018), and *lavaan* (*v0.6-3;* Rosseel, 2012) packages. The full code is available at https://osf.io/exrwd/. The descriptive statistics and zero-order correlations for all variables are displayed in **Table 1**. A total of 551 (62.12%) participants indicated that they perceived themselves to be similar to their colleagues, 111 (12.51%) perceived themselves as only surface-level dissimilar, 147 (16.57%) perceived themselves as only deep-level dissimilar and 67 (7.55%) perceived themselves as both surface-level and deep-level dissimilar (1.24% missing).

Preliminary Analyses

Mardia's test showed that the assumption of multivariate normality was violated. As a consequence, we used robust test statistics in our CFA and SEM analyses.

To assess whether our measures could be distinguished statistically, we conducted a series of factor analyses.[3] First, we performed a PA, which yielded nine significant factors. Subsequently, we entered all our Likert-scale measures in an EFA in which we constrained the number of extracted factors to nine (based on the aforementioned PA) and used principal axis factoring with Oblimin rotation. Almost all items loaded on the respective factors of their scales, with

[3]For employees who perceive themselves as dissimilar, both the measure of climate for inclusion and the measure of felt inclusion tap into how employees who are dissimilar are treated at work. In contrast, for employees who perceive themselves as similar, there is a difference between the two measures, as felt inclusion does not tap into the treatment of someone who is dissimilar. This might raise the question whether climate for inclusion and felt inclusion are different constructs for those who perceive themselves as dissimilar. To answer this question, we tested whether there was a distinction between perceived climate for inclusion and felt inclusion for both employees who perceived themselves as similar or dissimilar (surface-level and/or deep-level). We first performed a PA to determine the number of significant factors, which resulted in four factors. Afterward, we conducted two EFAs, using principal axis factoring with Oblimin rotation and only retained factor loadings that exceeded 0.30. The results were similar for participants who perceived themselves as similar and dissimilar, in that all items of perceived climate for inclusion loaded on a single factor and the items of felt inclusion loaded on the three remaining factors (see **Supplementary Tables C, D**). This is in line with Jansen et al. (2014) who found that items for the subdimensions authenticity and belonging loaded on separate factors.

TABLE 1 | Descriptive Statistics and Intercorrelations.

	M	*SD*	1	2	3	4	5	6	7	8
1. Surface-level dissimilarity	0.20	0.40	–							
2. Deep-level dissimilarity	0.24	0.43	0.16***	–						
3. Perceived climate for inclusion	4.49	1.00	−0.10**	−0.23***	-					
4. Felt inclusion	5.26	1.09	−0.08*	−0.25***	0.56***	–				
5. Job satisfaction	5.67	1.06	0.00	−0.16***	0.32***	0.55***	–			
6. Work-related stress	4.01	0.94	−0.04	−0.13***	0.26***	0.37***	0.40***	–		
7. Turnover intention	0.64	0.34	0.00	−0.11**	0.12***	0.22***	0.43***	0.28***	–	
8. Career commitment	4.85	1.07	0.10**	−0.04	0.10**	0.11**	0.16***	−0.04	−0.05	–
9. Career advancement motivation	4.46	0.87	0.08*	−0.03	0.19***	0.33***	0.37***	0.12***	0.12***	0.58***

*Dissimilarity was coded as 0 and 1, meaning that the mean scores reflect the percentage of people that perceived themselves as such. *p < 0.05, **p < 0.01, ***p < 0.001.*

minimal cross-loadings of items from the measures of turnover intentions, career commitment, and career advancement motivation (see **Supplementary Table E**).

Next, a confirmatory factor analysis (CFA) was conducted to obtain a statistical indication of the validity of our measurement model. Again, we tested the model with nine factors, as suggested by the PA. We defined the model such that all items loaded on their respective factors. Because the assumption of multivariate normality was violated, we used Satorra–Bentler test statistics and robust standard errors. The results of the CFA showed that the measurement model did not reach good fit, $\chi^2 = 5126.64$, $p < 0.001$, $df = 1238$, $\chi^2/df = 4.14$, RMSEA = 0.07, CFI = 0.89, TLI = 0.88. Based on the cross-loadings in the EFA, we deleted two items from the measures, after which our CFA did indicate good fit, $\chi^2 = 4490.84$, $p < 0.001$, $df = 1139$, $\chi^2/df = 3.94$, RMSEA = 0.07, CFI = 0.90, TLI = 0.90. Accordingly, we used all measures as separate outcome variables. The deleted items were omitted from all analyses.

Hypothesis Testing

In order to test the first part of our first hypothesis (H1a), we conducted a 2 (deep-level dissimilarity: yes vs. no) × 2 (surface-level dissimilarity: yes vs. no) between-subjects ANOVA, with inclusion as the dependent variable.[4] The descriptive statistics can be found in **Supplementary Table F** of the supplement. We obtained a main effect of deep-level dissimilarity, $F(1, 872) = 46.08$, $p < 0.001$, $\eta_p^2 = 0.05$, which indicated that participants who perceived themselves to be deep-level dissimilar to most others at work scored lower on felt inclusion ($M = 4.79$, $SD = 1.31$) compared to those who perceived themselves to be deep-level similar ($M = 5.42$, $SD = 0.95$). We obtained no main effect of perceived surface-level dissimilarity on inclusion, $F(1, 872) = 2.99$, $p = 0.084$. Furthermore, we obtained no interaction between deep-level dissimilarity and surface-level dissimilarity, $F(1, 872) = 1.22$, $p = 0.269$, suggesting that the influence of perceived deep-level dissimilarity on felt inclusion was not dependent on whether participants perceived themselves to be surface-level dissimilar to most others at work.[5] These results partially support our hypothesis (H1a), as only deep-level dissimilarity was related to felt inclusion. The analyses of simple effects using Tukey's HSD procedure indicated that participants who perceived themselves as only deep-level dissimilar scored lower on inclusion ($M = 4.89$, $SD = 1.05$) than those who perceived themselves as similar in both ways ($M = 5.43$, $SD = 0.95$), $t(872) = 5.52$, $p < 0.001$, and also scored lower than those who perceived only surface-level dissimilarity ($M = 5.37$, $SD = 0.99$), $t(872) = 3.63$, $p = 0.002$. Furthermore, participants who perceived themselves as only surface-level dissimilar did not differ in inclusion from those who perceived similarity in both ways, $t(872) = 0.54$, $p = 0.949$. Participants who perceived both deep-level and surface-level dissimilarity scored lower on inclusion ($M = 4.62$, $SD = 1.74$) than those who perceived themselves as similar in both terms, $t(872) = 5.94$, $p < 0.001$, and those who perceived themselves as only surface-level dissimilar, $t(872) = 4.60$, $p < 0.001$. Lastly, there was no difference between participants who perceived themselves as only deep-level dissimilar and those who perceived themselves as both deep-level and surface-level dissimilar, $t(872) = 1.74$, $p = 0.306$.

To test our remaining hypotheses, we initially treated the five dependent variables independently. This means we first tested Hypothesis 1b using a MANOVA. In order to test Hypotheses 2, 3a, and 3b, we conducted mediation, moderation and moderated mediation analyses using PROCESS (Hayes, 2013). The results of these analyses are presented in the **Supplementary Materials**. For simplicity of presentation, per the suggestion of the editor, here we present results from two structural equation models that capture the five dependent variables in a single latent variable "work-related outcomes." For these models we used the *lavaan* package in R. To fit parsimonious models, we created item parcels as indicators for all work-related variables except for job satisfaction, because job satisfaction consisted of only three items. Parcels have shown to produce more reliable latent variables than individual items and are particularly useful when the measurement model is not of direct interest (Little et al., 2013), as is the case for us. The models we constructed did not

[4]This analysis was repeated after removal of outliers (+3 SD), yielding similar results. Furthermore, in the **Supplementary Materials**, we report an ANCOVA, which we conducted to test the main and interactive effects of deep-level and surface-level dissimilarity on inclusion, while controlling for sex, age, education level, tenure, senior position and junior position, yielding similar results.

[5]We also examined whether perceived (in)visible dissimilarity differentially influenced felt belonging and felt authenticity, the two subdimensions of inclusion. These analyses can be found in the **Supplementary Materials**.

reach good fit, but this is less of a concern for us given that our primary goal was to test our hypotheses using our theoretical structural equation models. Furthermore, as the assumption of multivariate normality was violated, we used robust estimation methods ("MLM" option in *lavaan*) for all analyses.

The first model tested Hypothesis 1b – namely, that dissimilarity would predict work-related outcomes – using a 2 (deep-level dissimilarity: yes vs. no) × 2 (surface-level dissimilarity: yes vs. no) between-subjects ANOVA with the latent variable work-related outcomes as our dependent variable, $\chi^2 = 455.23$, $p < 0.001$, $df = 69$, $\chi^2/df = 6.60$, RMSEA = 0.09, CFI = 0.90, TLI = 0.88. We obtained a main effect of deep-level dissimilarity, $b = -0.09$, $SE = 0.04$, $p = 0.017$, 95% CI [−0.16; −0.02], which indicated that participants who perceived themselves to be deep-level dissimilar to most others at work scored lower on the work-related outcomes than those who perceived themselves to be deep-level similar. We obtained no main effect of perceived surface-level dissimilarity on work-related outcomes, $b = 0.03$, $SE = 0.03$, $p = 0.201$, 95% CI [−0.02; 0.09].[6] Furthermore, we obtained no interaction between deep-level dissimilarity and surface-level dissimilarity, $b = -0.05$, $SE = 0.05$, $p = 0.337$, 95% CI [−0.15; 0.05], suggesting that the influence of deep-level dissimilarity on work-related outcomes does not depend on the degree of surface-level dissimilarity. This partially supports our hypothesis (H1b), as only deep-level dissimilarity was related to work-related outcomes.[7] In order to exploratively assess the simple effects, we used the Bonferroni correction, thus resulting in an adjusted critical value of 0.008. Using this alpha as a criterion, no simple effects reached significance. These analyses can be found in the **Supplementary Materials**.

The second model tested Hypotheses 2, 3a, and 3b – namely that felt inclusion would mediate the relationship between dissimilarity and work-related outcomes, that a climate for inclusion would moderate the relationship between perceived dissimilarity and felt inclusion and that a climate for inclusion would positively relate to felt inclusion. We used this model with the latent dependent variable "work-related outcomes" (which was indicated by the five dependent variables), one mediator (felt inclusion), one moderator (climate for inclusion), and two independent variables (deep-level and surface-level dissimilarity), $\chi^2 = 990.09$, $p < 0.001$, $df = 130$, $\chi^2/df = 7.62$, RMSEA = 0.10, CFI = 0.82, TLI = 0.78.[8] See **Figure 1** for a conceptual overview of the current model and **Supplementary Tables I, J** for the statistics.

Supporting Hypothesis 2, the results indicated that felt inclusion mediated the relationship between perceived deep-level dissimilarity and the work-related outcomes, as shown by the significant indirect relationship, $a_1 b_1 = -0.22$, $p = 0.001$. Perceived surface-level dissimilarity did not have an indirect relationship with work-related outcomes, $a_2 b_1 = 0.02$, $p = 0.827$.

[6]The regular MANOVA presented in the **Supplementary Materials**, with job satisfaction, work-related stress, turnover intentions, career commitment, and career advancement motivation within the organization as separate dependent variables showed that deep-level dissimilarity predicted the first three work-related outcomes, but not career commitment and career advancement motivation. In contrast, surface-level dissimilarity only predicted career commitment and career advancement motivation. Interestingly, participants who perceived surface-level dissimilarity (vs. similarity) scored higher on these outcomes than.

[7]This analysis was repeated after removal of outliers (+3 SD), yielding similar results.

[8]The moderated mediation analyses using PROCESS, where a separate moderated mediation was tested for each of the five dependent variables, are described in the **Supplementary Materials**.

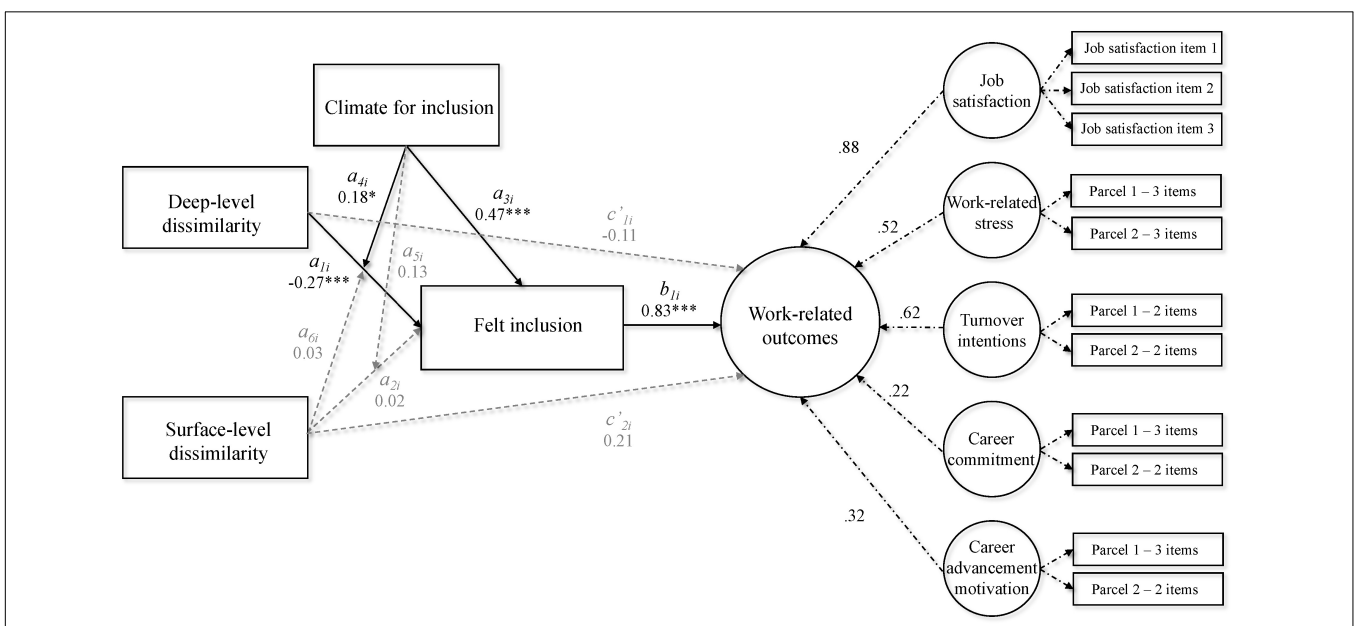

FIGURE 1 | Conceptual overview of the structural equation model with standardized factor loadings and unstandardized parameter estimates. ***$p < 0.001$, *$p < 0.05$.

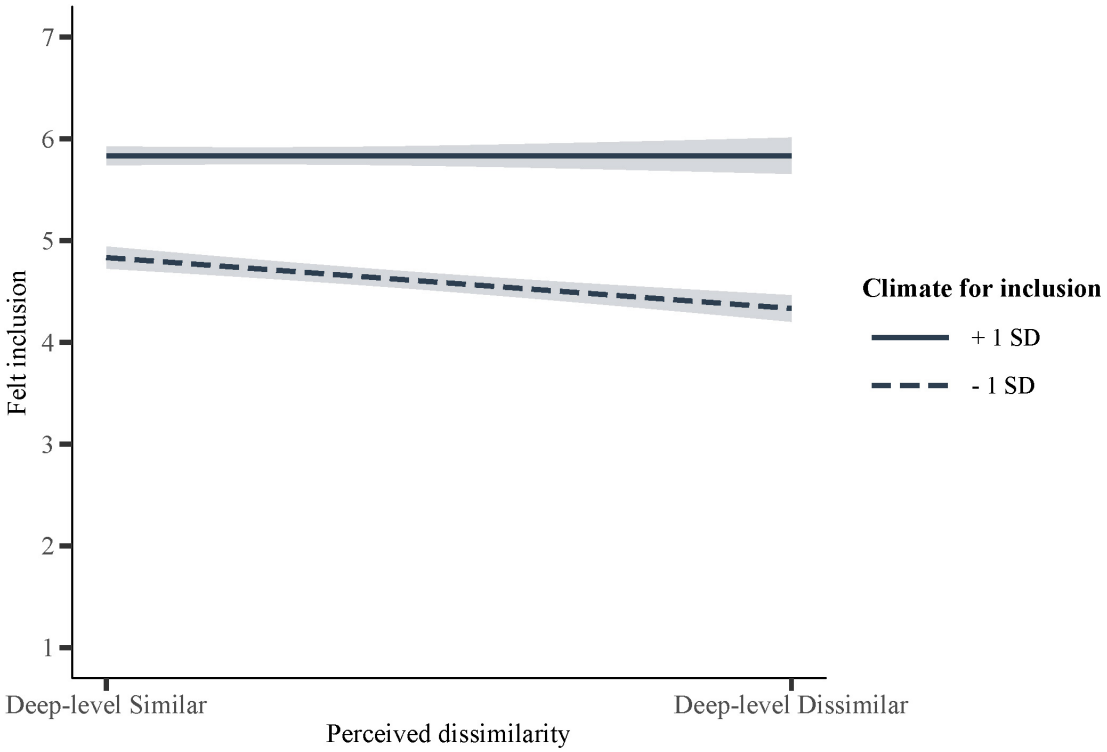

FIGURE 2 | The moderation effect by climate for inclusion on the relationship between deep-level dissimilarity and felt inclusion.

Results furthermore indicated that an inclusive climate can buffer the negative effects of deep-level dissimilarity, $a_4 = 0.18$, $p = 0.019$, which supports Hypothesis 3a. That is, participants who perceived themselves as deep-level dissimilar to most others at work felt less included compared to those who perceived themselves as deep-level similar when they perceived a negative (-1 *SD*; see **Figure 2**), $a_4 = -0.45$, $p < 0.001$, or average (mean), $a_4 = -0.27$, $p < 0.001$, climate for inclusion. When they perceived a positive climate for inclusion ($+1$ *SD*), however, participants who perceived themselves as deep-level dissimilar felt equally included as those who perceived themselves as deep-level similar, $a_4 = -0.09$, $p = 0.369$. In addition, the more positive participants perceived the climate for inclusion to be, the more included they felt. Importantly, while the latter effect was stronger among participants who perceived themselves as deep-level dissimilar, it was also present among participants who perceived themselves as similar to most others at work, reflecting the direct main effect of climate for inclusion on felt inclusion, $a_3 = 0.47$, $p < 0.001$. Supporting Hypothesis 3b, this suggests that a climate for inclusion is beneficial to all employees. Furthermore, because a positive climate for inclusion ($+1$ *SD*) buffered the negative relationship between deep-level dissimilarity and felt inclusion, it also neutralized the adverse indirect relationship between perceived deep-level dissimilarity and work-related outcomes, $a_1b_1 = -0.08$, $p = 0.375$.[9]

[9]This analysis was repeated after removal of outliers (+3 SD), yielding similar results.

DISCUSSION

Previous research demonstrated a relationship between employee dissimilarity, organizational climate, and inclusion at work. We replicate and extend these findings in two important ways. First, we provide a first examination of the independent and joint effects of surface-level and deep-level dissimilarity on social inclusion, thus extending previous work that has only considered the effect of surface-level dissimilarity (Jansen et al., 2017). We found that perceived deep-level (but not surface-level) dissimilarity is negatively related to felt inclusion. Since no interaction between the two types of dissimilarity was obtained, the relationship between deep-level dissimilarity and felt inclusion does not appear to depend on surface-level dissimilarity. Second, we extend the findings obtained by Jansen et al. (2017) to other work-related outcomes than absenteeism by demonstrating that felt inclusion acts as a mediator between deep-level dissimilarity and participants' job satisfaction, work-related stress, and turnover intentions. Furthermore, we showed that the negative relationship between perceived deep-level dissimilarity and felt inclusion was buffered by a perceived positive climate for inclusion in a similar way as Jansen et al. (2017) found to be the case for objective gender dissimilarity.

Our finding that only deep-level dissimilarity was related to feelings of inclusion is interesting, considering that most organizational diversity programs (e.g., from 1980–2002 in the United States; Dobbin et al., 2011) tend to focus on surface-level diversity only. Our findings suggest that by also focusing on

deep-level dissimilarity in diversity programs, there is a potential for improvement of inclusion in organizations. This finding is also in line with earlier research. For example, Phillips and Loyd (2006) found that people who are only deep-level dissimilar, and not surface-level dissimilar, were less likely to express their deviance because they expected the social disapproval of others over it. The expectation of social disapproval is possibly related to lower feelings of inclusion among those who are deep-level dissimilar.

Furthermore, we found that a positive climate for inclusion is beneficial for the felt inclusion of employees, and consequently for their job satisfaction, work-related stress, turnover intentions, career commitment, and career advancement motivation in the organization. Importantly, a climate for inclusion was found to not only benefit the employees that perceived themselves to be "dissimilar" to most others, but also the ones that perceived themselves to be "similar." These findings suggest that both minority and majority group members are better off in an organizational climate where people who are dissimilar are being valued and accepted as they are. Majority group members may be positively affected by such a work climate because it affords them the freedom to be different as well. If they wish to deviate from the norm, they would likely still be accepted. Hence, a climate for inclusion enhances feelings of inclusion in the organization – for everyone.

While most of our hypotheses were supported, we also obtained some unexpected results. We expected surface-level dissimilarity to be negatively related to social inclusion, which was indeed reflected in the significant zero-order correlation between surface-level dissimilarity and inclusion ($r = -0.08$, $p = 0.015$). However, this effect disappeared when deep-level dissimilarity was simultaneously taken into account, suggesting that surface-level dissimilarity may only affect inclusion at work to the extent that it is accompanied by a sense of deep-level dissimilarity. Another explanation for the lack of a relationship between surface-level dissimilarity and inclusion is our measurement method, which did not assess the degree of perceived dissimilarity. It is possible that the degree of perceived dissimilarity was lower for those who perceived themselves as surface-level versus deep-level dissimilar. This will be discussed in the limitations section below. A second unexpected finding (reported in our **Supplementary Materials**) was that surface-level dissimilarity was positively, rather than negatively, related to career commitment and career advancement motivation in the organization. A possible explanation could be that those who perceived themselves to be surface-level dissimilar to others at work are compensating for their dissimilarity through increased motivation and commitment. Indeed, previous research shows that impending discrimination can lead people to distance themselves from stereotypes in order to avoid or overcome the maltreatment (Kaiser and Miller, 2001). If the participants who reported surface-level dissimilarity differed from others on a characteristic that is stereotyped to imply lower career advancement motivation and lower career commitment (e.g., being female; Williams and Dempsey, 2014), then their increased motivation and commitment may have been a form of overcompensation. Another possibility is that these participants are not more motivated or committed in order to compensate for a stereotyped group image, but in order to level the playing field because being equally motivated and committed as majority employees would not help them get ahead.

Practical Implications

In this research we observed that feelings of inclusion are an important factor in the negative relationship between deep-level dissimilarity and work outcomes. This suggests that in order to limit or buffer the negative effects of dissimilarity, organizations might focus on improving employees' sense of inclusion. Doing so would likely benefit both individual outcomes (e.g., the well-being of employees) as organizational outcomes (e.g., lower turnover intentions and higher commitment of their employees). This study can potentially inspire organizations to develop and implement more effective diversity policies by focusing on the inclusion of all employees – including those who are not visibly different from others. Notwithstanding these conclusions, it is important to note that the effect sizes in our study are relatively small. While perceived dissimilarity and felt inclusion seem to be important factors in the workplace, the modest effect sizes show that a stronger sense of inclusion is not a miracle cure for work-related issues. Nonetheless, according to our results, a climate for inclusion is something worth striving toward if one wants to improve the well-being and performance of employees.

A first step in improving the organizational climate for inclusion entails a shift from a one-sided focus on surface-level differences between employees to also integrating deep-level differences in their diversity management strategies. For example, in addition to implementing policies that focus on those who are surface-level dissimilar to the majority of employees, such as special programs for women or ethnic minorities, organizations could also consider ways to make those who are deep-level dissimilar (those with different personalities, preferences, or perspectives) feel included. For instance, organizations could benefit from actively inviting minority perspectives, communicating the worth of all employees, or establishing employee networks for groups that may be less visibly different from the norm (e.g., for LGBT + employees).

Specifically, in prior work three dimensions have been outlined that need to be considered by organizations striving toward a climate for inclusion (Nishii and Rich, 2013). The first dimension, which lays the groundwork for the two other dimensions, focuses on establishing a "level playing field." Making practices to combat unfair and biased actions visible to all employees will send a signal about intolerance of discrimination in the organization. Second, organizations should have an integration strategy that facilitates inclusion of all individuals in the workplace. As evident from our results, dissimilarity is negatively related to inclusion. An integration strategy is necessary in order to ensure that employees do not feel pressured to assimilate into the dominant culture, as there are many indications that being one's authentic self fosters one's well-being

and performance (Thomaes et al., 2017; Schmader and Sedikides, 2018), while hiding or constraining one's identity undermines these outcomes (Hewlin, 2003; Ellemers and Barreto, 2006). Third, decision-making should be inclusive. This ensures that perspectives from employees who have not traditionally been involved in the decision-making are also heard and incorporated in the process. Sharing and integrating knowledge of everyone not only gives a voice to all employees, but also results in more creativity (Men et al., 2017).

Limitations and Future Research

There are several potential limitations of this study that could be resolved in future research. A first issue regards our assessment of perceived dissimilarity. We utilized a top-down method of defining surface-level and deep-level dissimilarity by asking participants whether they felt visibly or invisibly dissimilar, while providing some examples of the two dimensions. This has the limitation that we cannot be sure that participants agreed with our typology (e.g., that gender and ethnicity could be considered surface-level characteristics), and which specific characteristic participants had in mind when they indicated feeling dissimilar. For example, we do not know whether participants felt different from others in terms of their personality traits, their values, or their sexual orientation.

Furthermore, we chose to use a single dichotomous item for each type of dissimilarity because we wanted to clearly distinguish between employees who perceive themselves as dissimilar and employees who perceive themselves as similar to most others at work. This way, there would be no doubt that the participants intended to categorize themselves as dissimilar or similar. The disadvantage of using dichotomous items, however, is that we do not know what the degree of perceived dissimilarity is. This information could be important, as it may be that inclusion might be affected only by a certain degree of dissimilarity.

The disadvantage of using single items is that single-item measures have lower reliability and validity compared to multi-item scales (Diamantopoulos et al., 2012). Another disadvantage of using single items is that we only have an indication of dissimilarity in a general sense, namely dissimilarity compared to most others at work. However, this doesn't allow us to differentiate the extent to which they feel dissimilar in subcontexts, such as relative to one's team members, supervisors or support staff. It is possible that the strength of the relationship between dissimilarity and inclusion differs per context. For instance, it may be possible that this relationship is stronger within one's team than in the office in general, as interdependence may be stronger in the former than the latter context.

Future studies addressing perceived dissimilarity at work could use multi-item and continuous measures of dissimilarity in order to understand the influence of the degree of dissimilarity and the significance of dissimilarity in different contexts. For the purposes of the current study, knowing whether participants perceived themselves as surface-level and/or deep-level dissimilar from others was the most important. We also note that using single items, as we have done, is not necessarily worse than using multi-item scales (Gardner et al., 1998).

Future research could, furthermore, use a bottom-up method of defining dissimilarity in order to examine more in-depth exactly what it is that makes employees feel dissimilar. Participants could indicate in what exact ways they feel dissimilar and whether they categorize these under surface- or deep-level dissimilarity. This would allow a more fine-grained analysis as to how dissimilarity on the basis of specific characteristics affects social inclusion and what patterns can be discerned. For instance, it would be interesting to investigate whether dissimilarity in characteristics indicating a stigmatized status (e.g., skin color, gender, or wearing the hijab) would be as negatively related to felt inclusion as dissimilarity in characteristics indicating non-stigmatized status. This is an interesting issue to explore in future research. Furthermore, there is some indication that gender and ethnicity might differentially affect the two subdimensions of social inclusion, authenticity, and belonging. Namely, women in engineering experience pressure to play down their female identity (Faulkner, 2011), whereas African American students experience social exclusion (Strayhorn, 2008). Hence, the first may experience a lowered sense of inclusion through lowered authenticity and the latter through lowered belonging. It is also important to keep in mind that people may feel dissimilar in multiple ways at the same time (e.g., as a Black woman in a workplace in which White men are the majority), which might open ways to multiple disadvantages for one person. More research is needed to understand how dissimilarity in intersectional terms affects people, as it is not only theoretically relevant, but also reflects the reality in which people belong to multiple categories at the same time (Cole, 2009).

Although our CFA indicated good fit of the measurement model, our SEM models did not reach good fit. This means that we did not specify all the important relationships that the data suggests. We decided not to increase model fit by adding residual correlations or covariances between our latent variables based on the modification indices, since doing so does not add anything to the theoretical model that we wanted to test. However, it does mean that we do not yet fully understand the relationships between job satisfaction, work-related stress, turnover intentions, career commitment, and career advancement motivation within the organization. As this was not the scope of the current paper, we did not investigate this, but it is important to do so more systematically in future research.

Furthermore, as is the convention in organizational surveys, participants received the demographic questions first, including whether they perceived themselves as dissimilar to their colleagues. This could have made their dissimilarity salient and may have influenced their answers to the questions that followed. However, one could argue that this reflects the reality of situations in which people are addressed in terms of their demographic characteristics, and tend to be chronically aware of their minority status (Kim-Ju and Liem, 2003).

Lastly, research is needed to uncover what organizations can do to create and maintain a climate for inclusion at work. Even though previous research has described the characteristics of a climate for inclusion (e.g., Nishii and Rich, 2013), which policies organizations can implement to develop such a climate, or to prevent it from deteriorating over time, has not yet been

examined. As the current study highlights the importance of a climate for inclusion for people who perceive themselves as deep-level dissimilar, longitudinal studies that focus on conditions that foster the development of such a climate can offer an important next step toward creating more inclusive workplaces.

CONCLUSION

In summary, the research reported in this contribution demonstrates that subjective perceptions of dissimilarity and the extant climate for inclusion relate to employees' feelings of inclusion in important ways. Our results, furthermore, suggest that deep-level dissimilarity is an important factor in the processes that are at work in diverse groups, even more so than surface-level dissimilarity. More research is needed to pinpoint which surface-level or deep-level characteristics in particular are at play in this process and to understand how a climate for inclusion can be realized in order to create and maintain inclusive workplaces.

DATA AVAILABILITY

The informed consent stated that the data of participants would not be shared with third parties. Therefore, our data cannot be made publicly available. Requests for access to the dataset should be directed to NE, n.ellemers@uu.nl.

AUTHOR CONTRIBUTIONS

OŞ conducted the analyses. OŞ, JvdT, WJ, and NE wrote the drafts of the manuscript. EB read the drafts of the manuscript and provided feedback. JvdT, WJ, EB, and NE developed the study. NE secured access to the organization and obtained permission to conduct this study. EB obtained approval from the ethical committee and collected the data.

FUNDING

This research was supported by the NWO Spinoza prize awarded to the NE, NWO (Netherlands Organisation for Scientific Research) grant number 01.80.104.00.

ACKNOWLEDGMENTS

The authors would like to thank Martine Kloet for her assistance in processing the data.

SUPPLEMENTARY MATERIAL

The Supplementary Material for this article can be found online at: https://www.frontiersin.org/articles/10.3389/fpsyg.2019.00575/full#supplementary-material

REFERENCES

Ashikali, T., and Groeneveld, S. (2015). Diversity management in public organizations and its effect on employees' affective commitment: the role of transformational leadership and the inclusiveness of the organizational culture. *Rev. Public Pers. Admin.* 35, 146–168. doi: 10.1177/0734371X13511088

Beekman, J. B., Stock, M. L., and Marcus, T. (2016). Need to belong, not rejection sensitivity, moderates cortisol response, self-reported stress, and negative affect following social exclusion. *J. Soc. Psychol.* 156, 131–138.

Bodla, A. A., Tang, N., Jiang, W., and Tian, L. (2016). Diversity and creativity in cross-national teams: the role of team knowledge sharing and inclusive climate. *J. Manag. Organ.* 24, 711–729. doi: 10.1017/jmo.2016.34

Byrne, D. (1997). An overview (and underview) of research and theory within the attraction paradigm. *J. Soc. Pers. Relat.* 14, 417–431. doi: 10.1177/0265407597143008

Chattopadhyay, P. (1999). Beyond direct and symmetrical effects: the influence of demographic dissimilarity on organizational citizenship behavior. *Acad. Manag. J.* 42, 273–287.

Chen, C., and Tang, N. (2018). Does perceived inclusion matter in the workplace? *J. Manag. Psychol.* 33, 43–57. doi: 10.1108/JMP-02-2017-0078

Cheryan, S., Ziegler, S. A., Plaut, V. C., and Meltzoff, A. N. (2014). Designing classrooms to maximize student achievement. *Policy Insights Behav. Brain Sci.* 1, 4–12. doi: 10.1177/2372732214548677

Cole, E. R. (2009). Intersectionality and research in psychology. *Am. Psychol.* 64, 170–180. doi: 10.1037/a0014564

Colquitt, J. A. (2001). On the dimensionality of organizational justice: a construct validation of a measure. *J. Appl. Psychol.* 86, 386–400 doi: 10.1037//0021-9010.86.3.386

Derks, B., Van Laar, C., and Ellemers, N. (2007). The beneficial effects of social identity protection on the performance motivation of members of devalued groups. *Soc. Issues Policy Rev.* 1, 217–256. doi: 10.1111/j.1751-2409.2007.00008.x

Diamantopoulos, A., Sarstedt, M., Fuchs, C., Wilczynski, P., and Kaiser, S. (2012). Guidelines for choosing between multi-item and single-item scales for construct measurement: a predictive validity perspective. *J. Acad. Mark. Sci.* 40, 434–449.

Dobbin, F., Kim, S., and Kalev, A. (2011). You can't always get what you need: organizational determinants of diversity programs. *Am. Sociol. Rev.* 76, 386–411. doi: 10.1177/0003122411409704

Drydakis, N. (2015). Sexual orientation discrimination in the United Kingdom's labour market: a field experiment. *Hum. Relat.* 68, 1769–1796. doi: 10.1177/0018726715569855

Ellemers, N., and Barreto, M. (2006). Social identity and self-presentation at work: how attempts to hide a stigmatised identity affect emotional well-being, social inclusion and performance. *Netherlands J. Psychol.* 62, 51–57. doi: 10.1007/BF03061051

Ellemers, N., De Gilder, D., and Van Den Heuvel, H. (1998). Career-oriented versus team-oriented commitment and behavior at work. *J. Appl. Psychol.* 83, 717–730. doi: 10.1037/0021-9010.83.5.717

Faulkner, W. (2011). Gender (in)authenticity, belonging and identity work in engineering. *Brussels Econ. Rev.* 54, 277–293.

Fox, J., and Weisberg, S. (2011). *An R Companion to Applied Regression*. Thousand Oaks CA: Sage.

Gardner, D. G., Cummings, L. L., Dunham, R. B., and Pierce, J. L. (1998). Single-item versus multiple-item measurement scales: an empirical comparison. *Educ. Psychol. Meas.* 58, 898–915.

Garrison, G., and Wakefield, R. L. (2010). Globally distributed teams: the effect of diversity on trust, cohesion and individual performance. *ACM SIGMIS Database* 41, 27–48. doi: 10.1145/1851175.1851178

Gonzalez, J. A., and Denisi, A. S. (2009). Cross-level effects of demography and diversity climate on organizational attachment and firm effectiveness. *J. Organ. Behav.* 30, 21–40.

Guillaume, Y. R. F., Brodbeck, F. C., and Riketta, M. (2012). Surface- and deep-level dissimilarity effects on social integration and individual effectiveness related outcomes in work groups: a meta-analytic integration.

J. Occup. Organ. Psychol. 85, 80–115. doi: 10.1111/j.2044-8325.2010.02005.x

Guillaume, Y. R. F., Dawson, J. F., Priola, V., Sacramento, C. A., Woods, S. A., Higson, H. E., et al. (2014). Managing diversity in organizations: an integrative model and agenda for future research. *Eur. J. Work Organ. Psychol.* 23, 783–802. doi: 10.1080/1359432X.2013.805485

Hadzibajramovic, E., Ahlborg, G., Grimby-Ekman, A., and Lundgren-Nilsson, Å (2015). Internal construct validity of the stress-energy questionnaire in a working population, a cohort study. *BMC Public Health* 15:180. doi: 10.1186/s12889-015-1524-9

Harrell, F. E. (2018). *Hmisc: Harrell Miscellaneous. R Package Version 4.1-1*. Available at: https://CRAN.R-project.org/package=Hmisc.

Harrison, D., Price, K., and Bell, M. (1998). Beyond relational demography: time and the effects of surface- and deep-level diversity on work group cohesion. *Acad. Manag. J.* 41, 96–107.

Hayes, A. F. (2013). *Introduction to Mediation, Moderation, and Conditional Process Analysis: A Regression-Based Approach*. New York, NY: The Guilford Press.

Hewlin, P. F. (2003). And the award for best actor goes to...: facades of conformity in organizational settings. *Acad. Manag. Rev.* 28, 633–642. doi: 10.5465/AMR.2003.10899442

Hobman, E. V., Bordia, P., and Gallois, C. (2004). Perceived dissimilarity and work group involvement: the moderating effects of group openness to diversity. *Group Organ. Manag.* 29, 560–587. doi: 10.1177/1059601103254269

Jackson, S. E., and Joshi, A. (2011). "Work team diversity," in *APA Handbooks in Psychology. APA Handbook of Industrial and Organizational Psychology, Building and Developing the Organization*, Vol. 1, ed. S. Zedeck (Washington, DC: American Psychological Association), 651–686.

Jansen, W. S., Otten, S., and Van der Zee, K. I. (2017). Being different at work: how gender dissimilarity relates to social inclusion and absenteeism. *Group Process. Intergr. Relat.* 20, 879–893. doi: 10.1177/1368430215625783

Jansen, W. S., Otten, S., van der Zee, K. I., and Jans, L. (2014). Inclusion: conceptualization and measurement. *Eur. J. Soc. Psychol.* 44, 370–385. doi: 10.1002/ejsp.2011

Kaiser, C. R., and Miller, C. T. (2001). Reacting to impending discrimination: compensation for prejudice and attributions to discrimination. *Pers. Soc. Psychol. Bull.* 27, 1357–1367. doi: 10.1177/01461672012710011

Kim-Ju, G. M., and Liem, R. (2003). Ethnic self-awareness as a function of ethnic group status, group composition, and ethnic identity orientation. *Cult. Div. Ethnic Minor. Psychol.* 9:289.

Latu, I. M., Mast, M. S., Lammers, J., and Bombari, D. (2013). Successful female leaders empower women's behavior in leadership tasks. *J. Exp. Soc. Psychol.* 49, 444–448. doi: 10.1016/j.jesp.2013.01.003

Li, C. R., Lin, C. J., Tien, Y. H., and Chen, C. M. (2017). A multilevel model of team cultural diversity and creativity: the role of climate for inclusion. *J. Creat. Behav.* 51, 163–179. doi: 10.1002/jocb.93

Liang, H. Y., Shih, H. A., and Chiang, Y. H. (2015). Team diversity and team helping behavior: the mediating roles of team cooperation and team cohesion. *Eur. Manag. J.* 33, 48–59. doi: 10.1016/j.emj.2014.07.002

Liao, H., Chuang, A., and Joshi, A. (2008). Perceived deep-level dissimilarity: personality antecedents and impact on overall job attitude, helping, work withdrawal, and turnover. *Organ. Behav. Hum. Decis. Process.* 106, 106–124. doi: 10.1016/j.obhdp.2008.01.002

Little, T. D., Rhemtulla, M., Gibson, K., and Schoemann, A. M. (2013). Why the items versus parcels controversy needn't be one. *Psychol. Methods* 18:285. doi: 10.1037/a0033266

Lüdecke, D. (2018). *Sjstats: Statistical Functions for Regression Models (Version 0.17.0)*. Available at: https://CRAN.R-project.org/package=sjstats. doi: 10.5281/zenodo.1284472.

Master, A., Cheryan, S., and Meltzoff, A. N. (2016). Computing whether she belongs: stereotypes undermine girls' interest and sense of belonging in computer science. *J. Educ. Psychol.* 108, 424–437. doi: 10.1037/edu0000061

Men, C., Fong, P. S. W., Luo, J., Zhong, J., and Huo, W. (2017). When and how knowledge sharing benefits team creativity: the importance of cognitive team diversity. *J. Manag. Organ.* 1–18. doi: 10.1017/jmo.2017.47

Midtbøen, A. H. (2016). Discrimination of the second generation: evidence from a field experiment in norway. *J. Int. Migr. Integr.* 17, 253–272. doi: 10.1007/s12134-014-0406-9

Mishel, E. (2016). Discrimination against queer women in the U.S. workforce: a resume audit study. *Socius* 2, 1–13. doi: 10.1177/2378023115621316

Mitchell, T. R., Holtom, B. C., Lee, T. W., Sablynski, C. J., and Erez, M. (2001). Why people stay: using job embeddedness to predict voluntary turnover. *Acad. Manag. J.* 44, 1102–1121.

Mor Barak, M. E., Lizano, E. L., Kim, A., Duan, L., Rhee, M.-K., Hsiao, H.-Y., et al. (2016). The promise of diversity management for climate of inclusion: a state-of-the-art review and meta-analysis. *Hum. Serv. Organ.* 40, 305–333. doi: 10.1080/23303131.2016.1138915

Murphy, M. C., Kroeper, K. M., and Ozier, E. M. (2018). Prejudiced places: how contexts shape inequality and how policy can change them. *Policy Insights Behav. Brain Sci.* 5, 66–74. doi: 10.1177/2372732217748671

Murphy, M. C., Steele, C. M., and Gross, J. J. (2007). Signaling threat. *Psychol. Sci.* 18, 879–885. doi: 10.1111/j.1467-9280.2007.01995.x

Nishii, L. H. (2013). The benefits of climate for inclusion for gender-diverse groups. *Acad. Manag. J.* 56, 1754–1774. doi: 10.5465/amj.2009.0823

Nishii, L. H., and Rich, R. E. (2013). *Creating Inclusive Climates in Diverse Organizations. in Diversity at Work: the Practice of Inclusion*. San Francisco: John Wiley & Sons, Inc., 330–363.

Phillips, K. W., and Loyd, D. L. (2006). When surface and deep-level diversity collide: the effects on dissenting group members. *Organ. Behav. Hum. Decis. Process.* 99, 143–160. doi: 10.1016/j.obhdp.2005.12.001

R Core Team (2018). *R: A Language and Environment for Statistical Computing*. Vienna: R Foundation for Statistical Computing. Available at: https://www.r-project.org/

Rosseel, Y. (2012). lavaan: an R package for structural equation modeling. *J. Stat. Softw.* 48, 1–36. doi: 10.18637/jss.v048.i02

Rudmin, F. W. (1999). Norwegian short-form of the marlowe-crowne social desirability scale. *Scand. J. Psychol.* 40, 229–233. doi: 10.1111/1467-9450.00121

Ryan, R. M., LaGuardia, J. G., and Rawsthorne, L. J. (2005). Self-complexity and the authenticity of self-aspects: effects on well being and resilience to stressful events. *North Am. J. Psychol.* 7, 431–448.

Schmader, T., and Sedikides, C. (2018). State authenticity as fit to environment: the implications of social identity for fit, authenticity, and self-segregation. *Pers. Soc. Psychol. Rev.* 22, 228–259. doi: 10.1177/1088868317734080

Sealy, R., and Harman, C. (2017). "Women's leadership ambition in early careers," in *Handbook of Research on Gender and Leadership*, ed. S. R. Madsen (Cheltenham: Edward Elgar Publishing), 180–192.

Sønderlund, A. L., Morton, T. A., and Ryan, M. K. (2017). Multiple group membership and well-being: is there always strength in numbers? *Front. Psychol.* 8:1–20. doi: 10.3389/fpsyg.2017.01038

Ståhl, T., Van Laar, C., Ellemers, N., and Derks, B. (2012). Searching for acceptance: prejudice expectations direct attention towards social acceptance cues when under a promotion focus. *Group Process. Intergr. Relat.* 15, 523–538. doi: 10.1177/1368430211435485

Strauss, J. P., Barrick, M. R., and Connerley, M. L. (2001). An investigation of personality similarity eVects (relational and perceived) on peer and supervisor ratings and the role of familiarity and liking. *J. Occupat. Organ. Psychol.* 74, 637–657.

Strayhorn, T. L. (2008). Fittin' in: do diverse interactions with peers affect sense of belonging for black men at predominantly white institutions? *J. Stud. Affairs Res. Pract.* 45, 501–527. doi: 10.2202/1949-6605.2009

Thomaes, S., Sedikides, C., Van den Bos, N., Hutteman, R., and Reijntjes, A. (2017). Happy to be "me?" authenticity, psychological need satisfaction, and subjective well-being in adolescence. *Child Dev.* 88, 1045–1056. doi: 10.1111/cdev.12867

Turban, D. B., Jones, A. E., Nora, H., Svyantek, F., Sarabia, E., and Alexander, J. (1988). Supervisor-subordinate similarity: types, effects, and mechanisms. *J. Appl. Psychol.* 73, 228–234.

Van den Berg, C., Blommaert, L., Bijleveld, C., and Ruiter, S. (2017). Veroordeeld tot (g)een baan. *Tijdschrift Voor Criminologie* 59, 113–135. doi: 10.5553/TvC/0165182X2017059102007

Van Laer, K., and Janssens, M. (2011). Ethnic minority professionals' experiences with subtle discrimination in the workplace. *Hum. Relat.* 64, 1203–1227. doi: 10.1177/0018726711409263

Van Velthoven, M., and Meijman, T. (1994). *Vragenlijst Beleving en Beoordeling van de Arbeid*. Amsterdam: NIA.

Waldring, I., Crul, M., and Ghorashi, H. (2015). Discrimination of second-generation professionals in leadership positions. *Soc. Inclus.* 3:38. doi: 10.17645/si.v3i4.227

Waters, R. D., and Bortree, D. S. (2012). Improving volunteer retention efforts in public library systems: how communication and inclusion impact female and male volunteers differently. *Int. J. Nonprofit Volunt. Sect. Mark.* 17, 92–107.

Williams, J. C., and Dempsey, R. (2014). *What Works for Women at Work: Four Patterns Working Women Need to Know*. New York, NY: NYU Press.

Yavorsky, J. E. (2017). *Inequality in Hiring: Gendered and Classed Discrimination in the Labor Market*. Available at: https://etd.ohiolink.edu/pg_10?0::NO:10:P10_ACCESSION_NUM:osu1492542664842056.

Conflict of Interest Statement: The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

frontiers in Psychology

ORIGINAL RESEARCH
published: 18 April 2019
doi: 10.3389/fpsyg.2019.00688

Endorsing and Reinforcing Gender and Age Stereotypes: The Negative Effect on Self-Rated Leadership Potential for Women and Older Workers

Fatima Tresh, Ben Steeden, Georgina Randsley de Moura, Ana C. Leite, Hannah J. Swift and Abigail Player*

School of Psychology, University of Kent, Canterbury, United Kingdom

Previous research has examined the impact of stereotypes on outcomes such as career progression and hiring decisions. We present a novel approach to examine the role of stereotypes in predicting self-rated leadership potential across gender and age groups. This research sheds light on the impact of leadership-incongruent and detrimental stereotypes about one's gender and age, for women and older workers, on self-ratings of leadership potential. Across three studies (total $N = 640$), correlational and experimental evidence shows differential effects of stereotypes about women (vs. men) and older (vs. younger) people on self-ratings of their own leadership potential. Results suggest that both gender and age stereotypes affect older workers more than their younger counterparts (Study 1). Specifically, effects on self-rated leadership potential at the intersectional level show that endorsement of stereotypes has opposite effects on older women to younger men (Study 1). Furthermore, stereotyped workplace cultures impacted women's and older worker's perceptions of job fit (Studies 2 and 3), also extending to job appeal for older workers (Study 3). Results are discussed in terms of career implications for both women and older workers, with a particular focus on older women, whose intersecting identities are leadership stereotype-incongruent.

Keywords: gender, age, stereotypes, organizational culture, leadership potential

OPEN ACCESS

Edited by:
Thekla Morgenroth,
University of Exeter, United Kingdom

Reviewed by:
Michelle Stratemeyer,
The University of Melbourne, Australia
Louise Pendry,
University of Exeter, United Kingdom

****Correspondence:***
Fatima Tresh
ft88@kent.ac.uk

Specialty section:
This article was submitted to Organizational Psychology, a section of the journal Frontiers in Psychology

Received: *14 September 2018*
Accepted: *12 March 2019*
Published: *18 April 2019*

Citation:
Tresh F, Steeden B, Randsley de Moura G, Leite AC, Swift HJ and Player A (2019) Endorsing and Reinforcing Gender and Age Stereotypes: The Negative Effect on Self-Rated Leadership Potential for Women and Older Workers. Front. Psychol. 10:688. doi: 10.3389/fpsyg.2019.00688

INTRODUCTION

In order to maintain competitive advantage, organizations must identify and nurture people with high-potential to drive innovation (Salau et al., 2018), and ultimately succeed leaders (Stadler, 2011). To do this successfully, organizations should be able to identify those with the most leadership potential objectively, free from bias and subjectivity. However, observation of talent pools and leadership teams indicate that there are sociodemographic restrictions to identification of leadership potential. That is, younger men are disproportionately represented in leadership positions relative to their older and/or female counterparts (World Economic Forum, 2015; Business in the Community, 2016). We take a novel approach to the study of leadership potential by examining the psychological barriers that members of disadvantaged and stigmatized groups

in the workplace may face in leadership attainment, because leadership stereotypes favor men and younger workers. Specifically, we investigate the relationship between stereotype endorsement and stereotype reinforcement on how men (vs. women) and younger (vs. older) workers judge their own leadership potential. We focus on gender and age as both have been found to impact assessments of others' leadership potential (Hirschfeld and Thomas, 2011; Tresh et al., 2018; Player et al., in press).

To address gender and age inequalities in the workplace, which are exacerbated by an aging workforce and increased representation of women in the workplace (Business in the Community, 2017; Catalyst, 2018), organizations need to diversify their leadership teams. Diversity in leadership teams has been linked with improved financial performance (McKinsey Company, 2015) and innovation (Bantel and Jackson, 1989). The challenges for disadvantaged gender and stigmatized age groups in talent identification cannot be due to objective differences in desired attributes, given that women and older workers perform objectively as well as their younger and male leadership counterparts (Eagly et al., 1995; Posthuma and Campion, 2009). A more plausible explanation is psychological biases against these groups in the form of subjective and unfavorable evaluations. Recent research has shown that gender is a boundary condition to the preference for potential (over past performance) in candidates for leadership positions (Player et al., in press). Specifically, we found that men are selected for leadership positions based on their future potential, whereas women are selected based on past performance (Player et al., in press). Furthermore, women are held to higher standards than men in order to be perceived as having leadership potential in the eyes of men who are making a promotion decision (Tresh et al., 2017).

The current studies examine the impact of (a) stereotype endorsement (Study 1) and (b) stereotype reinforcement (Studies 2 and 3), on how men vs. women and younger workers vs. older workers (e.g., Beck and Williams, 2016), rate their own potential to lead. Societal and workplace stereotypes have provided substantial evidence for biased evaluations against women (e.g., Eagly and Karau, 2002) and older workers (e.g., Abrams et al., 2016; Swift et al., 2017) with respect to their leadership suitability and performance. Our approach provides a useful perspective for understanding the negative effects stereotypes might have for attaining equal outcomes in terms of career choices and progression. The present research contributes to the growing body of literature challenging widely held prejudicial beliefs that workplace stereotypes of disadvantaged and stigmatized groups in the workplace are due to objective differences in traits and skills or individuals' sub-optimal career choices (e.g., Tam, 1997; Polavieja, 2012).

LEADERSHIP POTENTIAL

"Leadership potential" is reserved by organizational evaluators for individuals who indicate likely effectiveness in future roles, usually with much broader responsibilities and at higher levels in the hierarchy (Silzer and Church, 2009). Early research on leadership potential has focused on the traits and skills which most accurately predict leadership success in the long-term (Hirschfeld et al., 2008; Silzer and Church, 2009; Dries and Pepermans, 2012). More recently, research has begun to consider the subjective nature of leadership potential (e.g., Peters and Haslam, 2018), and the challenges with identifying specific traits or skills (Tresh et al., 2018).

A small but consistent body of research has demonstrated a preference for leadership potential in leadership selection, such that candidates with leadership potential are preferred over candidates with more leadership achievement (e.g., Tormala et al., 2012; Sun et al., 2015). These findings seem to reflect organizational practice- a psychological preference for potential mirrors organizations' desire to identify leadership potential (Schwartz et al., 2017). It makes sense then to understand what affects evaluations of leadership potential, especially given that an understanding of potential impacts outcomes such as ambition and performance (Steffens et al., 2018).

Existing research into leadership potential has focused primarily on evaluator-candidate dyadic relationships, namely how an evaluator perceives the candidate's leadership potential (e.g., Heslin, 2009; Dries and Pepermans, 2012; Peters and Haslam, 2018). Our research presented here takes a new perspective by investigating *self-rated* leadership potential (i.e., the amount of leadership potential people attribute to themselves). Recent research conducted by Steffens et al. (2018) examined the consequences of receiving feedback about one's own leadership potential. Specifically, Steffens et al. (2018) showed that those who are told that they have low leadership potential show less ambition to become leaders and perform less well in subsequent tasks compared to those who are told that they have high leadership potential. As leadership ambition and performance are attributes used to identify leadership potential (Robinson et al., 2009; Silzer and Church, 2009; Dries and Pepermans, 2012), this can undoubtedly affect leadership attainment by increasing or reducing confidence in one's own leadership abilities. Little is known about the social-psychological antecedents of self-rated leadership potential and the extent to which this could be influenced by stereotypes about the social groups that individuals belong to. To address this gap in the literature, our research examines the effects of endorsing and reinforcing gender and age stereotypes on self-rated leadership potential. We expect that men and younger people will be advantaged by endorsing the leadership-congruent stereotypes about their own gender and age, and will rate themselves as having more leadership potential as a result of endorsing them. In contrast, we expect that women and older people will be disadvantaged by reinforced stereotyped workplace cultures to the extent that it impacts their job appeal, self-rated job fit, and self-rated leadership potential.

WORKPLACE STEREOTYPES AND LEADERSHIP

There is no evidence that the underrepresentation of women in leadership roles is caused by women having insufficient skillsets to assume leadership positions (Gipson et al., 2017). Instead, research has highlighted the role of psychological biases, namely

gender stereotypes, in perpetuating a gender bias in leadership (Hoyt, 2010). Much of this research is focused on how gender stereotypes lead to discriminatory practices against women, but less on how women themselves may be impacted by societal gender stereotypes.

The "think manager – think male" paradigm evidences the tendency to consolidate the representation of leadership with gender roles of men, because stereotypes of men and of leaders both reflect agency (e.g., independence, assertiveness, confidence). On the other hand, women are generally attributed "communal" traits typically not associated with leadership (e.g., kind, caring, cooperative) as described by role congruity theory (Eagly and Karau, 2002). Research has shown that these gender stereotypes influence children's behavior from an early age. For example, boys' perceptions of gender stereotypes are associated with their beliefs about the abilities of boys and girls, and predict self-rated competence (Kurtz-Costes et al., 2008). Moreover, girls' implicit gender stereotypes are predicted by their mothers' implicit gender stereotypes about children (Endendijk et al., 2013).

Studies in leadership selection have found that agentic and typically masculine attributes are preferred over communal and typically feminine attributes in recruitment decisions, advantaging male candidates (Sczesny, 2004). This effect is strengthened when the leadership role requires masculine-typed traits (Von Stockhausen et al., 2013). Furthermore, such biases can be held by women as well as men, with both women and men perceiving successful managers as holding attributes more associated with men than with women (Schein, 1973, 1975). Nonetheless, this finding highlights that women perceive successful managers as having stereotypically male attributes, but not necessarily that men are more suitable for leadership positions than women. Evidence shows that men can hold stronger gender biases than women (for a review see Atewologun et al., 2018), which echoes research in social psychology on high-status compared to low-status groups demonstrating stronger in-group biases (Bettencourt et al., 2001). Gender stereotypes give men a higher advantage in terms of leadership attainment, which might explain why men are more likely to endorse gender stereotypes than women (Mast, 2005).

Role congruity theory offers a model applicable to other sociodemographic groups as well as gender, such as age (Krings et al., 2011). Evidence has shown that older workers are equally, if not more productive and competent in the workplace (McCann and Giles, 2002; Posthuma and Campion, 2009). Nonetheless, research has highlighted that age stereotypes often result in bias toward hiring candidates who are perceived to possess stereotypically "younger" over "older" traits, and that this is replicated even when recruiting for higher-status roles (Abrams et al., 2016).

Age stereotypes are positioned along the warmth-competence dimensions, according to the stereotype content model (Fiske et al., 1999, 2002), with older people attributed greater "warmth" and less "competence." Pervasive age stereotypes in the workplace suggest that older workers have lower performance, ability, technical competence, motivation, and productivity (Broadbridge, 2001; Cuddy and Fiske, 2002; Posthuma and Campion, 2009). Warmth stereotypes generally position older workers more positively, describing them as loyal and interpersonally skilled (Warr and Pennington, 1993). However, a preference for competence-related traits in leadership selection advantages younger candidates compared to older candidates with objectively equal resumés (Perry et al., 2017). In addition, older age stereotype characteristics, such as carefulness and politeness, can disadvantage older people in hiring decisions. Whereas, younger age stereotypes such as creativity, adaptability, flexibility, and greater willingness to learn new things can be preferred (Abrams et al., 2016). As for gender stereotypes, age stereotypes are likely to elicit the similar in-group bias for higher-status members (younger workers) than their marginalized counterparts (older workers) because age stereotypes about competence give younger workers a higher advantage in terms of leadership attainment (Finkelstein et al., 1995; Gordon and Arvey, 2004).

ENDORSING INGROUP STEREOTYPES

Although high-status groups are more likely to endorse advantageous group stereotypes (Finkelstein et al., 1995; Gordon and Arvey, 2004), theory and research highlight that gender and age stereotypes are internalized and can have a profound effect on people's self-definitions and behaviors. Theories such as gender schema theory (Bem, 1981) and the expectancy value model (Eccles et al., 1983) argue that gender stereotypes are culturally propagated, through mechanisms such as the socializing influence of parents, and internalized from childhood. For example, when female managers endorse gender stereotypes, they self-stereotype as strong in feminine skills and weak in masculine skills (Eiksson et al., 2017). This also applies to other contexts. For example, salient math-gender stereotypes about women's under-performance in math have been shown to reduce women's intentions to have a career in math, explained partly by internalized beliefs about their math competence (Song et al., 2017).

Stereotype embodiment theory (Levy, 2009) suggests that age stereotypes, which are learnt when people are young, can lead to similar self-stereotyping in older people. Culturally pervasive negative age stereotypes can become internalized throughout the life course and become increasingly salient and self-relevant as individuals age. Endorsement of negative age stereotypes that denote older people as physically and cognitively less capable than younger people has been found to impact negatively on older people's cognitive functioning, physical health (Wurm et al., 2007) and willingness to engage in physical activity (Emile et al., 2014). Furthermore, the Risks of Ageism Model (RAM) highlights how these stereotyping processes play out in employment contexts to disadvantage older workers (Swift et al., 2017). For instance, lack of perceived "fit" with the organization, lack of respect, and appreciation of older workers, are important factors that influence older workers intentions to

exit the labor market. However, research has yet to show whether younger workers indeed perceive more leadership potential in themselves than older workers do, and whether this is explained by younger worker's greater likelihood of endorsing age stereotypes.

We address these gaps in the literature to examine the relationship between gender and age stereotype endorsement and self-rated leadership potential. We expect that greater endorsement of stereotypes by higher-status groups, in this case men and younger workers, will provide an explanation for higher self-rated leadership potential amongst these categories compared to women and older workers. Specifically:

Hypothesis 1: *There will be a relationship between gender and self-rated leadership potential, such that men* (*vs. women*) *will have higher self-rated leadership potential.*

Hypothesis 2: *We expect that the relationship between gender and self-rated leadership potential will be mediated by the endorsement of gender stereotypes.*

Hypothesis 3: *There will be a relationship between age and self-rated leadership potential, such that younger people* (*vs. older people*) *will have higher self-rated leadership potential.*

Hypothesis 4: *We expect that the relationship between age and self-rated leadership potential will be mediated by the endorsement of age stereotypes.*

REINFORCING INGROUP STEREOTYPES

Evidence suggests that a context in which negative gender and age stereotypes are salient can have an immediate effect on women and older people's behavior. Experimental data shows that women are less willing to contribute ideas to a group when the area of expertise is incongruent with traditional gender roles or communal traits, regardless of other group members' behavior (Coffman, 2014). The salience of traditional gender roles and traits for women has also been shown to weaken some women's attitudes and increase their susceptibility to persuasion (Eaton et al., 2017). Similarly, when age stereotypes that denote older people as incompetent are made salient, older people approach tasks requiring high competence differently, becoming more cautious in eyewitness memory tasks (Thomas et al., 2018) and less confident in their driving ability despite consistent objective performance (Chapman et al., 2014). These findings are consistent with the stereotype embodiment theory and stereotype threat theory, such that increased anxiety about confirming negative in-group stereotypes in stereotyped domains leads to reduced performance (Steele, 1992, 1997). As such, contextual cues encourage age-stereotype-congruent beliefs and behaviors (Levy, 2009; Swift et al., 2017). However, research on the effects of negative age stereotypes have focused primarily on health and cognition, with less research exploring the effects on organizational outcomes.

Gender stereotypes are likely made salient during leadership evaluations because the evaluator will assess the *perceived* congruence between the individual (and their group) and the *perceived* requirements of the role (Eagly and Karau, 2002). However, there are other contextual factors that may affect the salience of gender stereotypes in leadership evaluations. One of these factors is organizational culture. The tendency for evaluators to assess the *perceived* congruence between the individual (and their group) and the *perceived* organizational culture (Sarris and Kirby, 2005) partly explains why women are more likely to be leaders in industries which value communal traits such as education and healthcare, and support functions such as human resources (e.g., Bowles et al., 2005; Gipson et al., 2017). This is also evidenced by a wider gender gap in leadership attainment in masculine-typed organizational cultures (Elesser and Lever, 2011); contexts that are more likely to elicit stereotype threat in women (Kray and Shirako, 2011). Research has shown that lack of fit for women affects access to networks and mentors, career capital necessary for leadership attainment (Simpson, 2000). Also, it is not yet known whether organizational cultures that reinforce gender stereotypes have spill-over effects on women's self-rated leadership potential. Previous research has found that women are particularly devalued when they occupy male-dominated leadership roles (Eagly et al., 1992). Therefore, we expect that female participants will perceive particularly low appeal, job fit and leadership potential in themselves when presented with masculine-typed organizational cultures. Given that stereotypes about men are congruent with leadership, we do not expect organizational culture (masculine or feminine) to have an effect on men's self-rated leadership potential.

Hypothesis 5: *Gender and stereotype reinforcement* (*labeled organizational culture*) *will interact to predict job appeal, self-rated job fit, and self-rated leadership potential. Specifically, female participants will self-rate significantly less job appeal, job fit, and leadership potential in a masculine stereotyped culture than in a feminine stereotyped culture. Organizational culture will have no effect on male participants' job appeal, self-rated job fit, or self-rated leadership potential.*

As with gender, contextual factors likely affect the salience of age stereotypes in leadership evaluations. An evaluator will likely assess the *perceived* congruence between the older candidate (and their group) with the *perceived* requirements of the role, as well as their *perceived* fit with the organizational culture (Swift et al., 2017). This explains why organizational culture influences preferences for younger (vs. older) candidates. For example, older candidates are preferred in times of stability (Spisak et al., 2014) and in traditional, stable companies (Diekman and Hirnisey, 2007). Perceptions of job fit and job appeal also predict older people's intentions to exit the workforce (Swift et al., 2017). As such, we would expect organizational culture to have the same impact on job appeal and self-rated job fit, as demonstrated in the literature, for older participants as we do for female participants. We would expect this to extend to self-rated leadership potential.

Hypothesis 6: *Age and stereotype reinforcement* (*manipulated as organizational culture*) *will interact to predict job appeal, self-rated job fit, and self-rated leadership potential. Specifically, older people will self-rate significantly less job appeal, job fit, and leadership potential in a younger stereotyped culture than in an older stereotyped culture. Organizational culture will have no effect on younger people's job appeal, self-rated job fit or self-rated leadership potential.*

OVERVIEW OF RESEARCH

This research applies a well-established literature on stereotypes to the understanding of leadership potential and how it is subjectively perceived by individuals.

In Study 1, we explore the relationship between stereotype endorsement and self-rated leadership potential. We then examine the effects of stereotype reinforcement (i.e., in the form of organizational culture) on self-rated job appeal, job fit, and leadership potential in Studies 2 and 3. All studies were pre-registered via the Open Science Framework (https://osf.io/83rf2/, https://osf.io/rqhpm/, https://osf.io/j6rm5/). All studies have ethical approval, following the authors' institutional psychology ethics process.

STUDY ONE

In Study 1, we test our Hypotheses 1–2 (gender) and 3–4 (age), and analyze the mediation effects of stereotype endorsement on individuals' self-rated leadership potential.

Method

Participants and Design

Participants were recruited via the online crowdsourcing platform Prolific. We recruited 276 participants initially; 19 participants either failed the attention check, provided identifiable information or timed-out after 20 min so their data was not included in the analysis. Total participant numbers comprised 128 men, 124 women, and 2 participants who did not identify as either male or female[1]. Participants were recruited in one of two age categories: 126 participants were in the 18–30 category ($M = 25.54$, $SD = 3.16$) and 126 participants were in the age 50 and older category ($M = 55.80$, $SD = 4.98$)[2]. The total number of participants included in the analysis was 252. All participants were in full- or part-time employment in the UK. Participants received a payment of £0.50 and the average completion time was 354.77 s ($SD = 139.90$).

Study 1 adopted a correlational design. We measured the relationships between participant gender, endorsement of agentic and communal (gender) stereotypes, and self-rated leadership potential. We also measured the relationships between participant age, endorsement of competence and warmth (age) stereotypes and self-rated leadership potential.

Procedure and Materials

Participants were invited to take part in an online survey on Qualtrics (survey software) to understand self-perceptions. They were informed that data would be treated confidentially, would be anonymized for publication, and that participation was voluntary and could be withdrawn at any time. Email contact details for two of the researchers were also supplied, and participants gave their informed consent by clicking to take part in the study. Participants then completed the measures as defined below. Participants were finally presented with a full debrief of the study, and reminded of the researchers' contact details.

Measures

All questions were scored on a seven-point scale (1 = *very much disagree*, 7 = *very much agree*).

Gender Stereotype Endorsement

Endorsement of gender stereotypes was measured using 14 items asking participants *"please indicate the extent to which you agree with the following statements… Female workers are more communal/ supportive/ competitive/ kinship-oriented/ warmer/ kind/ assertive/ nicer/ stronger/ self-sufficient/ independent/ cooperative/ capable/ confident than male workers."* Gender stereotype descriptors were sourced from the existing literature (e.g., Eagly and Karau, 2002; Ridgeway, 2011). Items indicating agentic traits were reverse-coded, these included: competitive, assertive, stronger, self-sufficient, independent, and confident.

A mean score was used as the index of endorsement of seven agentic stereotypes ($\alpha = 0.89$) and seven communal stereotypes ($\alpha = 0.89$), with higher scores indicating greater endorsement of gender stereotypes. For example, higher scores on agentic stereotypes indicated attitudes that men are more agentic than women. Higher scores on communal stereotypes indicated attitudes that women are more communal than men.

Age Stereotype Endorsement

Endorsement of age stereotypes was measured using 20 items adapted from the "Work-related age-based stereotypes scale" (Marcus et al., 2016) asking participants *"please indicate the extent to which you agree with the following statements… Older workers are more intellectually competent/ achieve more/ physically capable/ better performers/ productive/ skilled/ perform worse/ suitable for training/ possess greater potential/ learn faster/ more flexible/ able to learn new things/ waste time training/ waste time and money training/ warm-hearted/ warmer personalities/ likable/ cold/ kind/ friendly than younger workers."* Items indicating competent or adaptable traits were reverse-coded, as were "negative warm" traits, these included: intellectually competent, achieve more, physically capable, better performers, productive, skilled, suitable for training, possess greater potential, learn faster, more flexible able to learn new things and cold.

The scale measured three dimensions: competence ($N = 7$, $\alpha = 0.73$), warmth ($N = 6$, $\alpha = 0.86$), and adaptability ($N = 7$, $\alpha = 0.68$). Given that no hypotheses were made about adaptability stereotypes and given that this scale had low reliability we did not include this subscale in the analyses reported below[3]. Competence had a low reliability and therefore the scale was reduced to 6 items, omitting the item on physical capability.

A final mean score was used as the index of endorsement of competence stereotypes ($\alpha = 0.81$) and warmth stereotypes ($\alpha = 0.86$), with higher scores indicating greater endorsement of age stereotypes. For example, a high score on competence

[1]Two participants indicated "other gender" however, given the gender intergroup nature of the study and the lack of representation of non-binary categories, we did not include these two participants in the analyses reported below.

[2]Three participants fell outside of the range of the two age categories and were not included in the analysis reported below.

[3]Results for the 'adaptability' dimension of the adapted 'work-related age-based stereotypes scale' are available upon request.

stereotypes reflected attitudes that younger people are more competent than older people. A high score on warmth stereotypes indicated attitudes that older people are warmer than younger people.

Self-Rated Leadership Potential

Ratings of one's own leadership potential was measured using 7 items (three items adapted from Tresh et al., 2018, and four items adapted from Mueller et al., 2010) asking participants *"please indicate the extent to which you think you personally have the following… leadership potential/ the potential to become a successful leader/ the capability to be a leader/ the potential to become an effective leader/ the potential to develop leadership skills/ the potential to advance to a leadership position/ the potential to be a leader who is a role model for my co-workers."* A mean score was used as the index of leadership potential ($\alpha = 0.97$), with higher scores indicating higher self-rated leadership potential[4].

TABLE 1 | Study 1: means, standard deviations and correlation matrix for specified variables.

	M(SD)	1	2	3	4	5	6	7
1. Gender			−0.02	−0.23**	0.06	0.03	−0.02	−0.03
2. Age				−0.05	−0.00	−0.29**	0.27**	−0.13*
3. Agentic stereotypes	4.38 (0.87)				−0.57**	0.33**	−0.41**	−0.12
4. Communal stereotypes	4.18 (0.89)					−0.40**	0.42**	0.08
5. Competence stereotypes	3.94 (0.86)						−0.70**	−0.01
6. Warmth stereotypes	4.02 (0.90)							−0.04
7. Leadership potential	5.07 (1.23)							

***Correlation significant at the 0.01 level (2-tailed). *Correlation significant at the 0.05 level (2-tailed).*

Results

Means and standard deviations for all measures and the bivariate correlations between the variables are reported in **Table 1**. We report the analyses by gender and then by age.

Gender

Hypothesis testing

We ran Pearson's bivariate correlations to establish the relationships between gender and endorsement of agentic stereotypes, endorsement of communal stereotypes and self-rated leadership potential. Failing to support Hypothesis 1, gender and self-rated leadership potential were not significantly associated; $r_{(250)} = -0.03$, $p = 0.63$. In partial support of hypothesis 2, there was a significant relationship between gender and endorsement of agentic stereotypes, such that men were more likely to endorse agentic stereotypes $r_{(250)} = -0.23$, $p < 0.001$. There was no relationship between gender and endorsement of communal stereotypes; $r_{(250)} = 0.06$, $p = 0.34$.

To test whether there was an indirect effect between gender and self-rated leadership potential via endorsement of gender stereotypes (Hypothesis 2), we used PROCESS macro (Model 4; see Hayes, 2013 with 5,000 bootstraps) with gender as the predictor (0 = men, 1 = women), endorsement of agentic and communal stereotypes as mediators (agentic in model 1, communal in model 2), and self-rated leadership potential as the outcome.

Results showed that gender was a significant predictor of endorsement of agentic stereotypes, such that men were more likely to endorse agentic stereotypes than women ($b = -0.39$, $SE = 0.11$, $t = -3.70$, $p < 0.001$, 95% CI −0.60, −0.18). Endorsement of agentic stereotypes was a significant, negative predictor of self-rated leadership potential; ($b = -0.19$, $SE = 0.09$, $t = -2.11$, $p = 0.04$, 95% CI −0.37, −0.01). The direct ($b = -0.15$, $SE = 0.16$, $t = -0.95$, $p = 0.34$, 95% CI −0.46, 0.16) and total effects were non-significant ($b = -0.07$, $SE = 0.15$, $t = -0.48$, $p = 0.63$, 95% CI −0.38, 0.23). The indirect effect was non-significant (Indirect effect: $b = 0.08$, $SE = 0.05$, 95% CI −0.02, 0.20).

Gender was not a significant predictor of endorsement of communal stereotypes ($b = 0.11$, $SE = 0.11$, $t = 0.96$, $p = 0.34$, 95% CI −0.11, 0.33), and endorsement of communal stereotypes was not a significant predictor of self-rated leadership potential ($b = 0.12$, $SE = 0.09$, $t = 1.34$, $p = 0.18$. 95% CI −0.05, 0.29). The direct ($b = -0.09$, $SE = 0.15$, $t = -0.56$, $p = 0.58$, 95% CI −0.39, 0.22) and total effects were non-significant ($b = -0.07$, $SE = 0.15$, $t = -0.48$, $p = 0.63$, 95% CI −0.38, 0.23). The indirect effect was non-significant ($b = 0.01$, $SE = 0.02$, 95% CI −0.02, 0.07).

Moderation analyses

Although we found that men were more likely to endorse agentic stereotypes than women, this did not relate to self-rated leadership potential possibly because there was no difference between self-rated leadership potential for men and women. However, it is possible that for women who do endorse gender stereotypes, there is a negative relationship with self-rated leadership potential that does not occur for men. To test this possibility, we conducted exploratory moderation analyses to test the interactive effects of endorsement of gender stereotypes and gender on self-rated leadership potential (using model 1 in PROCESS, Hayes, 2013). We introduced gender stereotypes as predictors (agentic in model 1, communal in model 2), participant gender as a moderator, and perceptions of self-leadership potential as the outcome. Results were non-significant (see **Table 2**).

Age

Hypothesis testing

To test Hypothesis 3, we ran Pearson's bivariate correlations to establish relationships between age and endorsement of competence stereotypes, endorsement of warmth stereotypes,

[4]We measured perceptions of access to development opportunities, reliability of the scale and the relationship with other variables are available upon request.

and self-rated leadership potential. In support of Hypothesis 3, there was a significant relationship between age and self-rated leadership potential; $r_{(250)} = -0.13$, $p = 0.04$. Younger workers rated more leadership potential in themselves and older workers rated less leadership potential in themselves. There was a significant relationship between age and endorsement of competence stereotypes; $r_{(250)} = -0.29$, $p < 0.001$, and age and endorsement of warmth stereotypes; $r_{(250)} = 0.27$, $p < 0.001$. In partial support of Hypothesis 4, younger people were more likely to endorse competence stereotypes than older people, and contrary to Hypothesis 4, they were less likely to endorse warmth stereotypes than older people.

To test whether there was an indirect effect between age and self-rated leadership potential via age stereotypes (Hypothesis 4), we used PROCESS macro (Model 4; see Hayes, 2013 with 5,000 bootstraps) with age as the predictor (0 = younger people, 1 = older people), endorsement of competence and warmth stereotypes as mediators (competence in model 1, warmth in model 2) and self-rated leadership potential as the outcome.

Results showed that age was a significant predictor of endorsement of competence stereotypes, such that younger people were more likely to endorse competence stereotypes ($b = -0.50$, $SE = 0.10$, $t = -4.81$, $p < 0.001$, 95% CI -0.71, -0.30). Endorsement of competence stereotypes was not a predictor of self-rated leadership potential ($b = -0.07$, $SE = 0.09$, $t = -0.78$, $p = 0.44$, 95% CI -0.26, -0.11). The direct ($b = -0.36$, $SE = 0.16$, $t = -2.25$, $p = 0.03$, 95% CI -0.68, -0.05) and total effects were significant ($b = -0.33$, $SE = 0.15$, $t = -2.12$, $p = 0.03$, 95% CI -0.63, 0.02). The indirect effect was non-significant ($b = 0.04$, $SE = 0.06$, 95% CI -0.07, 0.16).

Results showed that age was a significant predictor of endorsement of warmth stereotypes, such that younger people were less likely to endorse warmth stereotypes ($b = 0.49$, $SE = 0.11$, $t = 4.49$, $p < 0.001$, 95% CI 0.28, 0.71), but endorsement of warmth stereotypes was not a predictor of self-rated leadership potential ($b = -0.01$, $SE = 0.09$, $t = -0.09$, $p = 0.93$, 95% CI -0.18, 0.17). The direct ($b = -0.32$, $SE = 0.16$, $t = -2.01$, $p = 0.05$, 95% CI -0.64, -0.01) and total effects were significant ($b = -0.33$, $SE = 0.15$, $t = -2.12$, $p = 0.03$, 95% CI -0.63, -0.02). The indirect effect was non-significant ($b = -0.004$, $SE = 0.06$, 95% CI -0.12, 0.12).

Moderation analyses

We found support for Hypothesis 3, younger people were associated with higher self-rated leadership potential. Furthermore, we found partial support for Hypothesis 4 because younger people were more likely to endorse competence stereotypes than older people. However, this did not relate to self-rated leadership potential. It is possible that for older workers who do endorse age stereotypes, there is a negative relationship with self-rated leadership potential that does not occur for younger workers. We conducted exploratory moderation analyses to test the interactive effects of endorsement of age stereotypes and age on self-rated leadership potential (using model 1 in PROCESS, Hayes, 2013). We introduced age stereotypes as predictors (competence in model 1, warmth in model 2), participant age as a moderator, and self-rated leadership potential as the outcome. Results were non-significant (see **Table 3**).

Gender and Age

Analyzing gender and age separately we found little evidence of a relationship between endorsing in-group stereotypes and reduced self-rated leadership potential for women and older people, respectively. What we did not examine is how the intersecting identities of these groups may respond to stereotypes with regards to either their age or gender. The literature on discrimination toward older women indicates that a combined identity of being leadership-incongruent in terms of both gender and age may have more pronounced effects than being leadership-incongruent based on a single identity (Duncan and Loretto, 2004). This is echoed in the healthcare context, where internalized negative stereotypes have a cumulative burden on older women, reducing health care seeking behaviors (Chrisler et al., 2016). It is possible that the burden of negative stereotypes

TABLE 2 | Study 1: exploratory moderated regression analysis for gender stereotypes.

Items	B	*SE* B	*t*	*p*	LCI	UCI
AGENTIC						
Agentic stereotypes	0.21	0.28	0.74	0.46	−0.35	0.76
Gender	1.05	0.81	1.29	0.20	−0.55	2.65
Agentic stereotypes x Gender	−0.28	0.18	−1.50	0.13	−0.64	0.09
COMMUNAL						
Communal stereotypes	−0.08	0.27	−0.30	0.77	−0.61	0.45
Gender	−0.65	0.75	−0.87	0.39	−2.13	0.82
Communal stereotypes x Gender	0.13	0.17	0.77	0.44	−0.21	0.48

TABLE 3 | Study 1: exploratory moderated regression analysis for age stereotypes.

Items	B	*SE* B	*t*	*p*	LCI	UCI
COMPETENCE						
Competence stereotypes	0.18	0.29	0.62	0.54	−0.39	0.74
Age	0.31	0.75	0.42	0.68	−1.16	1.79
Competence stereotypes x Gender	−0.17	0.19	−0.92	0.36	−0.54	0.20
WARMTH						
Warmth stereotypes	0.11	0.27	0.42	0.67	−0.42	0.65
Age	0.03	0.75	0.04	0.96	−1.45	1.52
Warmth stereotypes x Gender	−0.09	0.18	−0.48	0.63	−0.45	0.27

that relate to older women's gender and age have a similar effect on their self-rated potential to lead.

We conducted exploratory moderation analyses to test the main and interactive effects of gender and age, with endorsement of gender and age stereotypes, on self-rated leadership potential at the intersectional level of identity (using model 3 in PROCESS, Hayes, 2013). In total, we tested four models: agentic stereotypes (model 1), communal stereotypes (model 2), competence stereotypes (model 3), and warmth stereotypes (model 4). Results of the three-way interactions are reported in text because we are particularly interested in the intersection of age and gender, all other effects are reported in full in **Table 4**.

Agentic Stereotypes

We introduced endorsement of agentic stereotypes as a predictor, and participant gender and participant age as moderators, with self-rated leadership potential as the outcome.

Results showed no main effects of endorsement of agentic stereotypes, participant gender, or participant age. There were no interaction effects.

Communal Stereotypes

We introduced endorsement of communal stereotypes as a predictor, and participant gender and participant age as moderators, with self-rated leadership potential as the outcome.

Results showed significant main effects of endorsement of communal stereotypes, participant gender, and participant age on self-rated leadership potential. All two-way interaction effects were significant.

Results showed a significant interaction between endorsement of communal stereotypes (that women are more communal than men), participant gender and participant age ($b = 0.96$, $SE = 0.35$, $t = 2.73$, $p = 0.01$, 95% CI 0.27, 1.65). Conditional effects showed that endorsement of communal stereotypes had differential effects across age groups for men, $F_{(1,244)} = 6.25$, $p = 0.01$, but not women, $F_{(1,244)} = 1.90$, $p = 0.17$. Endorsement of communal stereotypes was marginally associated with higher self-rated leadership potential for younger men ($b = 0.28$, $SE = 0.15$, $t = 1.92$, $p = 0.06$, 95% CI −0.01, 0.57) but not older men ($b = -0.33$, $SE = 0.20$, $t = -1.69$, $p = 0.09$, 95% CI −0.71, 0.06). Conditional effects showed that endorsement of communal stereotypes had differential effects across gender for older workers; $F_{(1,244)} = 6.71$, $p = 0.01$, but not younger workers [$F_{(1,244)} = 1.37$, $p = 0.24$]. Endorsement of communal stereotypes was associated with higher self-rated leadership potential for older women ($b = 0.36$, $SE = 0.18$, $t = 1.99$, $p = 0.05$, 95% CI 0.003, 0.72) but not older men ($b = -0.33$, $SE = 0.20$, $t = -1.69$, $p = 0.09$, 95% CI −0.71, 0.06).

Competence Stereotypes

We introduced endorsement of competence stereotypes as a predictor, and participant age and participant gender as moderators, with self-rated leadership potential as the outcome.

Results showed a marginally-significant main effect of endorsement of competence stereotypes and significant main effects of participant gender and participant age on self-rated leadership potential. All two-way interactions were significant.

Results showed a significant interaction between endorsement of competence stereotypes (that younger people are more competent than older people), participant age and participant gender ($b = -0.91$, $SE = 0.38$, $t = -2.42$, $p = 0.02$, 95% CI −1.66, −0.17). Conditional effects showed that endorsement of competence stereotypes had differential effects across gender for older workers, $F_{(1, 244)} = 5.24$, $p = 0.02$, but not younger workers $F_{(1, 244)} = 1.21$, $p = 0.27$. Endorsement of competence stereotypes was associated with lowered self-rated leadership potential in older women ($b = -0.49$, $SE = 0.20$, $t = -2.50$, $p = 0.01$, 95% CI −0.88, −0.10) but not older men ($b = 0.14$, $SE = 0.19$, $t = 0.71$, $p = 0.48$, 95% CI −0.24, 0.51). Conditional effects showed that endorsement of competence stereotypes had differential effects across age groups for women, $F_{(1, 244)} = 5.73$, $p = 0.02$, but not men, $F_{(1, 244)} = 0.88$, $p = 0.35$. Endorsement of competence stereotypes was associated with lowered self-rated leadership potential in older women ($b = -0.49$, $SE = 0.20$, $t = -2.50$, $p = 0.01$, 95% CI −0.88, −0.10), but not younger women ($b = 0.19$, $SE = 0.20$, $t = 0.91$, $p = 0.36$, 95% CI −0.22, 0.59).

Warmth Stereotypes

We introduced endorsement of warmth stereotypes as a predictor, and participant age and participant gender as moderators, with self-rated leadership potential as the outcome.

Results showed significant main effects of endorsement of warmth stereotypes, participant gender, and participant age on self-perceived leadership potential. All two-way interaction effects were significant.

Results showed a significant interaction between endorsement of warmth stereotypes (that older people are warmer than younger people), participant age and participant gender ($b = 1.13$, $SE = 0.36$, $t = 3.14$, $p = 0.002$, 95% CI 0.42, 1.84). Conditional effects showed that endorsement of warmth stereotypes had differential effects across gender for older workers; $F_{(1, 244)} = 6.29$, $p = 0.01$, and marginally-significant effects for younger workers; $F_{(1,244)} = 3.61$, $p = 0.06$. Endorsement of warmth stereotypes was associated with lower self-rated leadership potential for older men ($b = -0.41$, $SE = 0.20$, $t = -2.10$, $p = 0.04$, 95% CI −0.80, −0.03) but not older women ($b = 0.28$, $SE = 0.20$, $t = 1.45$, $p = 0.15$, 95% CI −0.10, 0.67). There were no effects for younger men ($b = 0.22$, $SE = 0.15$, $t = 1.44$, $p = 0.15$, 95% CI −0.08, 0.52) or younger women ($b = -0.22$, $SE = 0.17$, $t = -1.26$, $p = 0.21$, 95% CI −0.56, 0.12). Conditional effects showed that endorsement of warmth stereotypes had differential effects across age groups for men; $F_{(1, 244)} = 6.46$, $p = 0.01$, and marginally-significant effects for women; $F_{(1, 244)} = 3.68$, $p = 0.06$. Endorsement of warmth stereotypes was associated with lowered self-rated leadership potential for older men ($b = -0.41$, $SE = 0.20$, $t = -2.10$, $p = 0.04$, 95% CI −0.80, −0.03), but not younger men ($b = 0.22$, $SE = 0.15$, $t = 1.44$, $p = 0.15$, 95% CI −0.08, 0.52). There were no effects for younger women ($b = -0.22$, $SE = 0.17$, $t = -1.26$, $p = 0.21$, 95% CI −0.56, 0.12) or older women ($b = 0.28$, $SE = 0.20$, $t = 1.45$, $p = 0.15$, 95% CI −0.10, 0.67).

TABLE 4 | Study 1: three-way interaction between endorsement of stereotypes, participant gender and participant age on self-rated leadership potential.

Items			B	*SE*	*t*	R^2	ΔR^2	*F*	df	*p*	LCI	UCI
Agentic						0.23	0.05	2.00	7,244	0.06		
Agentic stereotypes			−0.99	0.88	−1.13					0.26	−2.71	0.74
Gender			−2.86	2.57	−1.11					0.27	−7.91	2.20
Age			−3.69	2.58	−1.43					0.15	−8.77	1.39
Agentic stereotypes x Gender			0.61	0.58	1.06					0.29	−0.52	1.75
Agentic stereotypes x Age			0.76	0.57	1.34					0.18	−0.36	1.87
Gender x Age			2.48	1.63	1.52					0.13	−0.73	5.69
Agentic stereotypes x Gender x Age			−0.57	0.37	−1.54					0.12	−1.29	0.16
							0.01	2.37	1,244	0.12		
Communal						0.24	0.06	2.19	7,244	0.04		
Communal stereotypes			2.11	0.81	2.62					0.01	0.53	3.70
Gender			5.02	2.27	2.21					0.03	0.55	9.49
Age			6.20	2.33	2.66					0.01	1.60	10.79
Communal stereotypes x Gender			−1.22	0.53	−2.32					0.02	−2.27	−0.18
	Younger workers							1.37	1,244	0.24		
	Older workers							6.71	1,244	0.01		
Communal stereotypes x Age			−1.57	0.55	−2.85					0.005	−2.65	−0.49
	Men							6.25	1,244	0.01		
	Women							1.90	1,244	0.17		
Gender x Age			−4.00	1.50	−2.66					0.01	−6.95	−1.04
Communal stereotypes x Gender x Age						0.06	0.03	7.44	1,244	0.01		
			0.96	0.35	2.73					0.01	0.27	1.65
		Younger men	0.28	0.15	1.92					0.06	−0.01	0.57
		Younger women	0.01	0.18	0.08					0.94	−0.33	0.36
		Older men	−0.33	0.20	−1.69					0.09	−0.71	0.06
		Older women	0.36	0.18	1.99					0.05	0.003	0.72
Competence						0.22	0.05	1.83	7,244	0.08		
Competence stereotypes			−1.53	0.87	−1.76					0.08	−3.25	0.19
Age			−4.72	2.30	−2.06					0.04	−9.24	−0.20
Gender			−4.77	2.46	−1.94					0.05	−9.61	0.07
Competence stereotypes x Age			1.15	0.57	2.00					0.05	0.02	2.28
	Men							0.88	1,244	0.35		
	Women							5.73	1,244	0.02		
Competence stereotypes x Gender			1.20	0.59	2.04					0.04	0.04	2.36
	Younger workers							1.21	1,244	0.27		
	Older workers							5.24	1,244	0.02		
Age x Gender			3.49	1.52	2.30					0.02	0.50	6.49
Competence stereotypes x Age x Gender			−0.91	0.38	−2.42					0.02	−1.66	−0.17
						0.05	0.02	5.85	1,244	0.02		

(Continued)

TABLE 4 | Continued

Items			B	*SE*	*t*	R^2	ΔR^2	*F*	df	*p*	LCI	UCI
		Younger men	−0.10	0.16	−0.62					0.54	−0.41	0.22
		Younger women	0.19	0.20	0.91					0.36	−0.22	0.59
		Older men	0.14	0.19	0.71					0.48	−0.24	0.51
		Older women	−0.49	0.20	−2.50					0.01	−0.88	−0.10
Warmth						0.24	0.06	2.15	7,244	0.04		
Warmth stereotypes			2.42	0.83	2.93					0.004	0.79	4.05
Age			6.91	2.35	2.95					0.004	2.29	11.53
Gender			6.21	2.15	2.88					0.004	1.97	10.45
Warmth stereotypes x Age			−1.76	0.56	−3.14					0.002	−2.87	−0.66
	Men							6.46	1,244	0.01		
	Women							3.68	1,244	0.06		
Warmth stereotypes x Gender			−1.57	0.54	−2.92					0.004	−2.63	−0.51
	Younger workers							3.61	1,244	0.06		
	Older workers							6.29	1,244	0.01		
Age x Gender			−4.63	1.50	−3.10					0.002	−7.57	−1.68
Warmth stereotypes x Age x Gender			1.13	0.36	3.14					0.002	0.42	1.84
						0.06	0.04	9.88	1,244	0.002		
		Younger men	0.22	0.15	1.44					0.15	−0.08	0.52
		Younger women	−0.22	0.17	−1.26					0.21	−0.56	0.12
		Older men	−0.41	0.20	−2.10					0.04	−0.80	−0.03
		Older women	0.28	0.20	1.45					0.15	−0.10	0.67

Discussion

The results of Study 1 demonstrate the effects of leadership-incongruent stereotypes across gender and age groups on self-rated leadership potential. Across the age stereotypes, the effects were negative for older people but this was dependent on gender. Specifically, endorsing stereotypes about older people's warmth was associated with reduced self-rated leadership potential for older men but not older women. Furthermore, endorsing stereotypes about older people's competence was associated with reduced self-rated leadership potential for older women but not older men. Nonetheless, older women had higher self-rated leadership potential the more they endorsed communal stereotypes about women, something that younger women did not benefit from. Interestingly, endorsing stereotypes about women's communality was associated with high self-rated leadership potential in younger men. None of the stereotypes related to self-rated leadership potential for younger women. Overall, the results indicate that endorsing stereotypes about both gender and age have some negative impact on older people but not younger people.

We found that gender was not directly related to self-rated leadership potential. Although this failed to support Hypothesis 1, results revealed that men are more likely to endorse agency-based gender stereotypes, partially supporting Hypothesis 2, but this did not translate to higher self-rated leadership potential. In support of Hypothesis 3, we found that age was directly related to self-rated leadership potential. Although younger people were more likely to endorse competency-based age stereotypes, we did not find a mediation effect, failing to support Hypothesis 4.

Our exploratory analyses shed light on intersectionality issues. There was no negative interaction of gender or age stereotypes for neither younger men nor younger women. For younger men this would be expected given that gender stereotypes are leadership-congruent based on both their gender and age. However, we would expect gender stereotypes to interact for self-rated leadership potential for younger women to some degree because their gender (but not age) identity is leadership-incongruent. Perhaps in this study the salience of their age counteracted the negative effects of gender stereotypes, something to investigate in future research.

Age interacted with both age stereotypes and gender stereotypes. Endorsing age stereotypes around competency was detrimental for older women in terms of self-rated leadership potential, compared to their male and younger counterparts. Endorsement of warmth stereotypes had a potentially negative relationship with self-rated leadership potential for older men. Perhaps for older men, the warmth associated with aging becomes more salient than the agency associated with their gender. This was the opposite for older women, whose

self-rated leadership potential increased when they endorsed communal traits about women. Interestingly, agency-based gender stereotypes had no interactive effects. Perhaps the nuances in the intersectional identities of these groups warrants further exploration. For example, intersectional identities become embedded within one another, interacting to form one unique identity through which inequality is experienced (Harnois, 2014; Martin et al., 2018).

Our findings could be explained by a generational difference between our participant groups. That is, older people may be more sensitive to all societal stereotypes than younger people. Our findings may also reflect the gendered nature of age stereotypes which may explain why age stereotypes were related to self-rated leadership potential differently for older men and older women. Martin et al. (2018) explain the gendered expectations of men and women as they age, showing that older men are expected to "lose" their agency. We found older men who endorse this, indicated by endorsement of older people's warmth, have lowered self-rated leadership potential.

Although we did not find a relationship between gender and self-rated leadership potential, we found this relationship for age. Perhaps the salience of societal gender roles is diminishing, or younger women better "manage" pervasive workplace stereotypes than their older counterparts. However, typical organizational cultures are often stereotypically masculine and younger with respect to the organizational norms, attitudes and behaviors endorsed within the workplace. As women and older people make decisions about job opportunities, these stereotyped cultures are likely to become more salient (Cochran et al., 2013; Kulik et al., 2016). We examine the role of stereotyped organizational cultures for women and older people's self-rated leadership potential in Studies 2 and 3.

STUDY TWO

In Study 2 we experimentally test Hypothesis 5 to examine whether the salience of a "masculine" organizational culture, compared to a "feminine" organizational culture, will reduce women's job appeal, self-rated job fit, and self-rated leadership potential.

Method

Participants and Design

We recruited 228 participants through Prolific crowdsourcing platform. We removed 29 participants for the same reasons as outlined in Study 1, no participants were removed based on their responses to manipulation checks, reaching a final sample of 199 participants (94 men, 105 women, 18–67 years; $M = 36.00$, $SD = 8.52$). All participants were in full- or part-time employment. Participants received a payment of £0.95 and the average completion time was 342.00 ($SD = 145.65$).

The study adopted a 2 Participant gender (men vs. women) x 2 Workplace culture (agentic vs. communal) quasi-experimental mixed design. Participant gender was a between-participants variable, whereas workplace culture was a within-participants variable. Dependent variables measured job appeal, job fit and self-rated leadership potential.

Procedure and Materials

Participants were invited to take part in an online survey on Qualtrics exploring people's job choices. They were provided with the same consent information as in study 1 and gave informed consent by clicking to continue. Participants were presented randomly with the masculine or feminine workplace culture condition first or second. In each condition, participants initially viewed a fictional online job advert for a leader in a UK-based company. The job adverts for both conditions began with the phrase "We are recruiting new leaders in the UK!" and were identically presented and worded, except for the name of the company to ensure meaningful comparison ("The Smith Group" or "The Jones Group") and descriptors that were linked with either masculine or feminine workplace stereotypes. The descriptors used in the masculine workplace condition were: *independent, competitive, confident, assertive,* and *providing autonomy*; those used for the feminine workplace condition were: *cooperative, warm, supportive, connecting with people*, and *providing communality*. Descriptors were sourced from the existing literature (e.g., Eagly and Karau, 2002). No other information on the type of employer, such as size or industry, was included.

Participants completed a manipulation check and dependent measures after each advert before reviewing both adverts again and answering dependent measure choice-questions. Participants completed demographic questions on age, gender and ethnic origin and were finally presented with a full debrief.

Measures

Questions were scored on a seven-point scale (1 = *very much disagree*, 7 = *very much agree*), with the exception of choice questions.

Manipulation Checks

To measure the extent to which participants perceived the organization to be masculine or feminine, participants indicated their agreement with two items: *"Think about this job advert and please indicate the extent to which you agree with the following… women would enjoy this job/ men would enjoy this job."*

Job Appeal

Job appeal was measured using 5 items (adapted from Gaucher et al., 2011) asking participants "*please indicate to what extent you agree or disagree with the following statements… I think I could enjoy this job/ this is not a job I would want/ this company would be a good employer/ this job looks interesting/ this company seems like a great place to work."* A mean score was used as the index of job appeal, with higher scores indicating higher job appeal (masculine $\alpha = 0.88$, feminine $\alpha = 0.87$). Two choice questions also measured job appeal, asking participants *"Which job would you be most likely to want?/enjoy?"*

Job Fit

Job fit was measured using 4 items (adapted from Gaucher et al., 2011) asking participants "*please indicate to what extent you agree or disagree with the following statements… I could fit in well at this company/ I'm similar to the people who work in this company/ My*

values and this company's values are similar/ The type of people who would apply for this job are very different from me." A mean score was used as the index of job appeal, with higher scores indicating higher job fit (masculine $\alpha = 0.91$, feminine $\alpha = 0.89$). Two choice questions also measured job fit, asking participants *"Which job would be the best fit for you?/ The people at which company do you think would be most similar to you?"*

Self-Rated Leadership Potential

Self-rated leadership potential was measured using 7 items asking participants *"to what extent to you agree or disagree that the [company name] offers you the opportunity to fulfill your… leadership potential/ potential to become a successful leader/ capability to become a successful leader, potential to develop leadership skills/ potential to advance to a leadership position/ potential to become a leader is a role-model for your co-workers"* The items were as in Study 1. A mean score was used as the index of self-rated leadership potential, with higher scores indicating higher leadership potential (masculine $\alpha = 0.95$, feminine $\alpha = 0.95$). Two choice questions also measured leadership potential, asking participants *"Which job can help you fulfill your potential to be a successful leader?/ Which job can help you fulfill your potential to advance to a leadership position?"*[5].

Results

To test the interaction between gender and gender-stereotyped organizational culture on self-rated leadership potential for men and women, we conducted a repeated-measures ANOVA with gender (men vs. women) as a between-participants variables and workplace culture (masculine, feminine) as the within-participants variable.

Manipulation Checks

Organizational culture and gender stereotypes

There was a significant main effect of organizational culture on perceptions of women enjoying the role, $F_{(1, 197)} = 14.77$, $p < 0.001$, $\eta^2 = 0.07$. Participants perceived that women would be more likely to enjoy the feminine organizational culture ($M = 5.38$, $SD = 1.10$) than the masculine organizational culture ($M = 5.12$, $SD = 1.16$). There was no main effect of gender [$F_{(1, 197)} = 0.37$, $p = 0.54$, $\eta^2 = 0.002$] and no interaction effect [$F_{(1, 197)} = 0.02$, $p = 0.88$, $\eta^2 < 0.001$].

There was no main effect of organizational culture on perceptions of men enjoying the role [$F_{(1, 197)} = 0.16$, $p = 0.69$, $\eta^2 = 0.001$]. There was no main effect of gender [$F_{(1, 197)} = 0.10$, $p = 0.76$, $\eta^2 < 0.001$] and no interaction effect [$F_{(1, 197)} = 0.07$, $p = 0.80$, $\eta^2 < 0.001$].

Dependent Measures

Job appeal

There was a significant main effect of organizational culture on job appeal, $F_{(1, 197)} = 37.93$, $p < 0.001$, $\eta^2 = 0.16$. The job in the feminine organizational culture was perceived to be more appealing ($M = 4.75$, $SD = 1.07$) than the job in the masculine organizational culture ($M = 4.29$, $SD = 1.12$). There was no main effect of participant gender on job appeal [$F_{(1, 197)} = 0.76$, $p = 0.39$, $\eta^2 = 0.004$] and no interaction effect [$F_{(1, 197)} = 0.59$, $p = 0.45$, $\eta^2 = 0.003$]. All means and standard deviations for Study 2 are reported in **Table 5** and correlations in **Table 6**.

There was no association between gender and wanting the job in either culture [$\chi^2_{(1, N=199)} = 0.69$, $p = 0.41$]. There was no association between gender and perceptions of enjoying the job in either culture [$\chi^2_{(1, N=199)} = 0.05$, $p = 0.83$].

Job fit

There was a significant main effect of organizational culture on perceived fit, $F_{(1, 197)} = 43.12$, $p < 0.001$, $\eta^2 = 0.18$. The feminine organizational culture was perceived to be higher fit ($M = 4.44$, $SD = 1.16$) than the masculine organizational culture ($M = 3.91$, $SD = 1.24$). There was no main effect of participant gender on perceived fit [$F_{(1, 197)} = 0.10$, $p = 0.76$, $\eta^2 < 0.001$].

The main effect of organizational culture was qualified by a marginally-significant interaction between organizational culture and participant gender, $F_{(1, 197)} = 2.96$, $p = 0.09$, $\eta^2 = 0.02$. Further analyses showed that women perceived more fit in the feminine organizational culture ($M = 4.53$, $SD = 1.18$) than the masculine organizational culture ($M = 3.87$, $SD = 1.26$); $F_{(1, 197)} = 36.34$, $p < 0.001$, $\eta^2 = 0.16$. Men also perceived more

TABLE 5 | Study 2: means and standard deviations for job appeal, job fit, and self-rated leadership potential.

	Male participants		Female participants	
	Masculine	Feminine	Masculine	Feminine
	M(SD)	M(SD)	M(SD)	M(SD)
Job appeal	4.26 (1.08)	4.66 (1.03)	4.32 (1.17)	4.84 (1.10)
Job fit	3.96 (1.23)	4.34 (1.15)	3.87 (1.26)	4.53 (1.18)
Leadership potential	5.10 (1.08)	5.27 (0.94)	5.30 (0.91)	5.59 (0.78)

TABLE 6 | Study 2: correlation matrix for job appeal (agentic and communal), job fit (agentic and communal), and self-rated leadership potential (agentic and communal).

	1	2	3	4	5	6
1. Job appeal (agentic)		0.54**	0.86**	0.49**	0.39**	0.24**
2. Job appeal (communal)			0.48**	0.79**	0.31**	0.45**
3. Job fit (agentic)				0.57**	0.24**	0.13
4. Job fit (communal)					0.11	0.24**
5. Leadership potential (agentic)						0.65**
6. Leadership potential (communal)						

***Correlation significant at the 0.01 level (2-tailed).*

[5]We also measured leadership aspirations, reliability of the scale and the relationship with other variables are available upon request.

fit in the feminine organizational culture ($M = 4.34$, $SD = 1.15$) than the masculine organizational culture ($M = 3.96$, $SD = 1.23$); $F_{(1, 197)} = 11.13$, $p = 0.001$, $\eta^2 = 0.05$, although to a lesser extent than women.

There was no association between gender and perceiving a better fit either culture [$\chi^2_{(1, N=199)} = 0.98$, $p = 0.32$]. There was no association between gender and perceptions of similarity to other people in the company in either culture [$\chi^2_{(1, N=199)} = 0.69$, $p = 0.41$].

Self-Rated leadership potential

There was a significant main effect of organizational culture on self-rated leadership potential, $F_{(1, 197)} = 17.63$, $p < 0.001$, $\eta^2 = 0.08$. Participants self-rated higher leadership potential in the feminine organizational culture ($M = 5.44$, $SD = 0.87$) than the masculine organizational culture ($M = 5.20$, $SD = 1.00$). There was a significant main effect of participant gender on self-rated leadership potential, $F_{(1, 197)} = 4.76$, $p = 0.03$, $\eta^2 = 0.02$. Women self-rated higher leadership potential ($M = 5.45$, $SD = 0.08$) than men ($M = 5.19$, $SD = 0.09$). There was no interaction effect between organizational culture and participant gender on self-rated leadership potential [$F_{(1, 197)} = 1.18$, $p = 0.28$, $\eta^2 = 0.01$].

There was no association between gender and perceptions of fulfilling potential in either culture [$\chi^2_{(1, N=199)} = 1.75$, $p = 0.19$]. There was no association between gender and perceptions of advancing to a leadership position in either culture [$\chi^2_{(1, N=199)} = 0.53$, $p = 0.47$].

Intersectional Analyses

To test the intersectional effects of gender stereotyped organizational culture on self-rated leadership potential, we conducted an exploratory analysis using participant age as a continuous moderator (using model 1 in PROCESS, Hayes, 2013). We introduced gender as the predictor, participant age as a continuous moderator variable. To test the interaction of participant gender and participant age on the dependent variables (job appeal in models 1–2, job fit in models 3–4, and self-rated leadership potential in models 5–6), we ran the moderations independently for each culture (masculine culture in models 1, 3, 5 and feminine culture in models 2, 4, 6).

Job Appeal

In model 1, there was no main effect of gender ($b = -0.74$, $SE = 0.70$, $t = -1.06$, $p = 0.29$, 95% CI −2.13, 0.64) or age ($b = -0.04$, $SE = 0.03$, $t = -1.33$, $p = 0.18$, 95% CI −0.10, 0.02), and no interaction of gender and age ($b = 0.02$, $SE = 0.02$, $t = 1.17$, $p = 0.24$, 95% CI −0.02, 0.06) on job appeal in the masculine organizational culture.

In model 2, there was no main effect of gender ($b = -0.66$, $SE = 0.67$, $t = -0.99$, $p = 0.32$, 95% CI −1.98, 0.66) or age ($b = -0.04$, $SE = 0.03$, $t = -1.19$, $p = 0.24$, 95% CI −0.09, 0.02), and no interaction of gender and age ($b = 0.02$, $SE = 0.02$, $t = 1.29$, $p = 0.20$, 95% CI −0.01, 0.06) on job appeal in the feminine organizational culture.

Job fit

In model 3, there was no main effect of gender ($b = -0.47$, $SE = 0.78$, $t = -0.60$, $p = 0.55$, 95% CI −2.00, 1.07) or age ($b = -0.02$, $SE = 0.03$, $t = -0.61$, $p = 0.54$, 95% CI −0.09, 0.05), and no interaction between gender and age ($b = 0.01$, $SE = 0.02$, $t = 0.49$, $p = 0.62$, 95% CI −0.03, 0.05) on perceptions of job fit in the masculine organizational culture.

In model 4, there was no main effect of gender ($b = -0.62$, $SE = 0.72$, $t = -0.86$, $p = 0.39$, 95% CI −2.05, 0.81) or age ($b = -0.03$, $SE = 0.03$, $t = -0.84$, $p = 0.40$, 95% CI −0.09, 0.04), and no interaction of gender and age (b = 0.02, $SE = 0.02$, t = 1.15, p = 0.25, 95% CI −0.02, 0.06) on perceptions of job fit in the feminine organizational culture.

Self-Rated leadership potential

In model 5, there was no main effect of gender ($b = -0.62$, $SE = 0.62$, $t = -1.00$, $p = 0.32$, 95% CI −1.84, 0.60) or age ($b = -0.04$, $SE = 0.03$, $t = -1.55$, $p = 0.12$, 95% CI −0.10, 0.01), and no interaction effect between gender and age ($b = 0.02$, $SE = 0.02$, $t = 1.35$, $p = 0.18$, 95% CI −0.01, 0.06) on self-rated leadership potential in the masculine organizational culture.

In model 6, there was no main effect of gender ($b = -0.17$, $SE = 0.54$, $t = -0.31$, $p = 0.75$, 95% CI −1.23, 0.89), no main effect of age ($b = -0.02$, $SE = 0.02$, $t = -0.75$, $p = 0.45$, 95% CI −0.06, 0.03), and no interaction of gender and age ($b = 0.01$, $SE = 0.01$, $t = 0.94$, $p = 0.35$, 95%CI −0.01, 0.04) on self-rated leadership potential in the feminine organizational culture.

Discussion

We found two interesting and unexpected findings in Study 2. First, there was an overall preference for the feminine organizational culture across both genders. This finding partially supports Hypothesis 5, women preferred the feminine organizational culture, but men's preference for the feminine organizational culture was not hypothesized. This preference may reflect a general orientation toward less hierarchical and more cooperative workplace cultures in recognition of the benefits this can bring in terms of performance and commitment (e.g., Triguero-Sánchez et al., 2018).

Second, and contrary to Hypothesis 1, women self-rated higher leadership potential than men. This reflects the nature of the findings in Study 1- women do not rate less leadership potential in themselves compared to men. Although assessments of leadership potential in others are affected by gender to the detriment of women (Tresh et al., 2018; Player et al., in press), self-assessments of leadership potential for younger women are not—at least directly. The limited age range of our participants may provide an explanation for why we did not replicate the intersectional effects found in Study 1. Further research is warranted with a representative sample of older people to determine these effects.

Organizational culture had the biggest impact on women in terms of perceived fit—although both women and men perceived more fit in the feminine organizational culture, this difference was greater for women. Our conclusion can be framed positively—even when women perceive low organizational fit, this does not reduce their self-rated of

leadership potential. However, research on women's career progression suggests that low organizational fit inhibits access to informal networks, inclusion, and stretch opportunities (Simpson, 2000). Nonetheless, high self-rated leadership potential in younger women may reflect the apparent leadership advantage and disadvantage—the progress made toward gender equality coupled with lack of achievement in fully reaching it (Eagly, 2007).

Overall, the findings of Study 2 partially support our hypotheses. Women, and also men, prefer a stereotypically feminine organizational culture. Women self-rated higher leadership potential than men, though the intersectional nature of this should be determined.

STUDY THREE

In Study 1 we found that men and younger people are more likely to endorse the "beneficial" stereotypes that relate them more closely to leadership than women and/ or their older counterparts. Whereas, endorsing gender stereotypes did not interact to predict self-rated leadership potential for younger women, both gender and age stereotypes interacted to predict self-rated leadership potential for older women. Furthermore, older men are potentially negatively affected in terms of self-rated leadership potential by the warmth attributed to older people. In this study, we extend societal stereotypes to reinforced workplace stereotypes to test Hypothesis 6.

Method

Participants and Design

We recruited 217 participants through Prolific. After removing 28 participants for the reasons outlined in study 1, no participants were removed based on their responses to manipulation checks, and 189 participants were retained and their data used in the analyses presented below (49 men, 140 women, 18–65 years; $M = 40.97$, $SD = 15.17$). There were 93 participants in the younger group ($M = 26.05$, $SD = 3.08$) and 96 participants in the older group ($M = 55.43$, $SD = 4.16$). All participants were in full- or part-time employment. Participants were paid £0.95 for taking part in the online study and the average completion time was 382.03 ($SD = 146.14$).

The Study adopted a 2 Participant age (younger vs. older) x 2 Workplace culture (younger, older) quasi-experimental mixed design. Participant age was a between-participants variable, whereas workplace culture was a within-participants variable. Dependent variables measured job appeal, job fit, and self-rated leadership potential.

Procedure and Materials

The procedure for study three mirrored that for study two. The only difference was the manipulation of workplace culture, which was operationalized to reflect younger and older workplace cultures rather than masculine and feminine cultures.

The descriptors used in the younger workplace condition were: *keen, energetic, ambitious, willing to learn,* and *fast learner*; those used for the older workplace condition were *experienced, mature, knowledgeable, professional,* and *provides stability*. Descriptors were sourced from the existing literature (Posthuma and Campion, 2009; Swift et al., 2013; Abrams et al., 2016).

Measures

Questions were scored on a seven-point scale (1 = *very much disagree*, 7 = *very much agree*), with the exception of choice questions.

Manipulation Checks

The measures adopted in study three replicate those used in study two, referring to age (i.e., "younger people" or "older people") instead of gender. Therefore, the same items were used for the manipulation checks: *"Think about this job advert and please indicate the extent to which you agree with the following… younger people would enjoy this job/ older people would enjoy this job."*

Dependent Measures

Measures of job appeal (younger culture $\alpha = 0.89$; older culture $\alpha = 0.88$), job fit (younger culture $\alpha = 88$; older culture $\alpha = 0.87$), and self-rated leadership potential (younger culture $\alpha = 0.96$; older culture $\alpha = 0.96$) were the same as those used in study two[6].

Results

To test the interaction between age and age-stereotyped organizational culture on self-rated leadership potential for younger and older workers, we conducted a repeated-measures ANOVA with age (younger workers vs. older workers) as a between-participants variables and workplace culture (younger, older) as the within-participants variable.

Manipulation Checks

Organizational culture and age stereotypes

There was a significant main effect of organizational culture on perceptions of younger workers enjoying the role, $F_{(1, 187)} = 30.97$, $p < 0.001$, $\eta^2 = 0.14$. Participants perceived younger people to be more likely to enjoy the younger organizational culture ($M = 5.25$, $SD = 1.27$) than the older organizational culture ($M = 4.66$, $SD = 1.21$). There was a significant main effect of participant age on perceptions of younger workers enjoying the role, $F_{(1, 187)} = 8.03$, $p = 0.005$, $\eta^2 = 0.04$. Participants were more likely to perceive that younger people would enjoy this role, if they were older workers ($M = 5.16$, $SD = 0.10$) compared to younger workers ($M = 4.75$, $SD = 0.10$). There was no interaction effect [$F_{(1, 187)} = 0.41$, $p = 0.52$, $\eta^2 = 0.002$].

There was a significant main effect of organizational culture on perceptions of older people enjoying the role, $F_{(1, 187)} = 36.33$, $p < 0.001$, $\eta^2 = 0.16$. Participants perceived older people to be more likely to enjoy the older organizational culture ($M = 4.80$, $SD = 1.21$) than the younger organizational culture ($M = 4.18$, $SD = 1.45$). There was no main effect of participant age [$F_{(1, 187)} = 2.00$, $p = 0.16$, $\eta^2 = 0.01$], and no interaction effect [$F_{(1, 187)} = 0.003$, $p = 0.95$, $\eta^2 < 0.001$].

[6]We also measured leadership aspirations, reliability of the scale and the relationship with other variables are available upon request.

TABLE 7 | Study 3: means and standard deviations for job appeal, job fit, and self-rated leadership potential.

	Younger participants		Older participants	
	Younger culture	Older culture	Younger culture	Older culture
	M(SD)	M(SD)	M(SD)	M(SD)
Job appeal	4.66 (1.22)	4.48 (1.14)	4.25 (1.16)	4.54 (1.09)
Job fit	4.20 (1.25)	4.12 (1.11)	3.82 (1.25)	4.24 (1.20)
Leadership potential	5.23 (1.21)	5.24 (1.15)	5.42 (0.93)	5.44 (0.88)

TABLE 8 | Study 3: correlation matrix for all dependent variables.

	1	2	3	4	5	6
1. Job appeal (younger culture)		0.60**	0.81**	0.57**	0.59**	0.42**
2. Job appeal (older culture)			0.54**	0.83**	0.41**	0.54**
3. Job fit (younger culture)				0.62**	0.41**	0.26**
4. Job fit (older culture)					0.35**	0.44**
5. Leadership potential (younger culture)						0.70**
6. Leadership potential (older culture)						

***Correlation significant at the 0.01 level (2-tailed).*

Dependent Measures

Job appeal

There was no main effect of organizational culture on job appeal [$F_{(1, 187)} = 0.50$, $p = 0.48$, $\eta^2 = 0.003$]. There was no main effect of participant age on job appeal [$F_{(1, 187)} = 1.45$, $p = 0.23$, $\eta^2 = 0.01$]. There was a significant interaction between organizational culture and participant age on job appeal, $F_{(1, 187)} = 10.01$, $p = 0.002$, $\eta^2 = 0.05$.

Further analyses showed that in the younger organizational culture younger workers perceived the job to be more appealing ($M = 4.67$, $SD = 1.22$) than older workers ($M = 4.25$, $SD = 1.16$), $F_{(1, 187)} = 5.77$, $p = 0.02$, $\eta^2 = 0.03$. There was no difference in the older organizational culture [$F_{(1, 187)} = 0.11$, $p = 0.74$, $\eta^2 = 0.001$]. Older people perceived the job in the older organizational culture to be more appealing ($M = 4.54$, $SD = 1.09$) than in the younger organizational culture ($M = 4.25$, $SD = 1.16$), $F_{(1, 187)} = 7.60$, $p = 0.006$, $\eta^2 = 0.04$. Younger people did not perceive the job in either culture as significantly more appealing than the other [$F_{(1, 187)} = 2.98$, $p = 0.09$, $\eta^2 = 0.02$]. All means and standard deviations for Study 3 are reported in **Table 7** and correlations in **Table 8**.

There was a significant association between age and wanting the job in either culture, $\chi^2_{(1, N=189)} = 6.47$, $p = 0.01$. Specifically, older people were more likely to want the job in the older organizational culture (66.7%) than the younger organizational culture (33.3%). There was a significant association between age and perceptions of enjoying the job in either culture, $\chi^2_{(1, N=189)} = 13.72$, $p < 0.001$. Specifically, older people were more likely to perceive that they would enjoy the job in the older organizational culture (65.6%) than the younger organizational culture (34.4%).

Job fit

There was a main effect of organizational culture on perceived fit, $F_{(1, 187)} = 5.14$, $p = 0.02$, $\eta^2 = 0.03$. The older organizational culture was perceived to be higher fit ($M = 4.18$, $SD = 1.16$) than the younger organizational culture ($M = 4.01$, $SD = 1.26$). There was no main effect of participant age on perceived fit [$F_{(1, 187)} = 0.65$, $p = 0.42$, $\eta^2 = 0.003$]. There was a significant interaction between organizational culture and participant age on perceived fit, $F_{(1, 187)} = 11.16$, $p = 0.001$, $\eta^2 = 0.06$.

Further analyses showed that in the younger organizational culture younger workers perceived greater organizational fit ($M = 4.20$, $SD = 1.25$) than older workers ($M = 3.82$, $SD = 1.25$), $F_{(1, 187)} = 4.36$, $p = 0.04$, $\eta^2 = 0.02$. There was no difference in the older organizational culture [$F_{(1, 187)} = 0.54$, $p = 0.46$, $\eta^2 = 0.003$]. Older people perceived greater organizational fit in the older organizational culture ($M = 4.25$, $SD = 1.20$) than in the younger organizational culture ($M = 3.82$, $SD = 1.25$), $F_{(1, 187)} = 15.98$, $p < 0.001$, $\eta^2 = 0.08$. Younger people did not perceive greater organizational fit in either culture [$F_{(1, 187)} = 0.57$, $p = 0.45$, $\eta^2 = 0.003$].

There was a significant association between age and perceiving a better fit either culture, $\chi^2_{(1,N=189)} = 8.05$, $p = 0.005$. Specifically, older people were more likely to perceive a better fit in the older organizational culture (66.7%) than the younger organizational culture (32.3%). There was a significant association between age and perceptions of similarity to other people in the company in either culture, $\chi^2_{(1,N=189)} = 5.75$, $p = 0.02$. Specifically, older people were more likely to perceive similarity to people in the older organizational culture (66.7%) than the younger organizational culture (33.3%).

Self-Rated leadership potential

There was no main effect of organizational culture on self-rated leadership potential [$F_{(1, 187)} = 0.08$, $p = 0.77$, $\eta^2 < 0.001$]. There was no main effect of participant age on self-rated leadership potential [$F_{(1, 187)} = 2.03$, $p = 0.16$, $\eta^2 = 0.01$. There was no interaction effect between organizational culture and participant age on self-rated leadership potential [$F_{(1, 187)} = 0.02$, $p = 0.89$, $\eta^2 < 0.001$].

There was no association between age and perceptions of fulfilling potential in either culture [$\chi^2_{(1,N=189)} = 1.50$, $p = 0.22$]. There was no association between age and perceptions of advancing to a leadership position in either culture [$\chi^2_{(1,N=189)} = 0.41$, $p = 0.52$].

Intersectional Analyses

To test the intersectional effects of age stereotyped organizational culture on self-rated leadership potential, we conducted an exploratory analysis using repeated-measures ANOVA with age and gender as between-participants variables and workplace culture as the within-participants variable. This resulted in 28 younger men, 65 younger women, 21 older men, and 75 older women.

Job appeal

There was no main effect of participant gender on job appeal [$F_{(1, 185)} = 0.69$, $p = 0.41$, $\eta^2 = 0.004$]. There was no interaction effect between participant age and participant gender on job appeal [$F_{(1, 185)} = 1.55$, $p = 0.21$, $\eta^2 = 0.01$]. There was no interaction effect between organizational culture and participant gender on job appeal [$F_{(1, 185)} = 0.02$, $p = 0.89$, $\eta^2 < 0.001$]. There was no three-way interaction between participant age, participant gender and organizational culture on job appeal [$F_{(1, 185)} = 0.35$, $p = 0.56$, $\eta^2 = 0.002$].

Job fit

There was no main effect of participant gender on perceived fit [$F_{(1, 185)} = 0.26$, $p = 0.61$, $\eta^2 = 0.001$]. There was no interaction effect between participant age and participant gender on perceived fit [$F_{(1, 185)} = 0.88$, $p = 0.35$, $\eta^2 = 0.01$]. However, there was a significant interaction effect between organizational culture and participant gender on perceived fit; $F_{(1, 185)} = 8.46$, $p < 0.005$, $\eta^2 = 0.04$. Further analyses showed that women perceived greater organizational fit in the older organizational culture ($M = 4.28$, $SD = 1.14$) than the younger organizational culture ($M = 3.98$, $SD = 1.25$), $F_{(1, 185)} = 12.13$, $p = 0.001$, $\eta^2 = 0.06$. Men perceived no difference in organization fit between the cultures [$F_{(1, 185)} = 1.77$, $p = 0.19$, $\eta^2 = 0.01$]. There was no three-way interaction between participant age, participant gender and organizational culture on perceived fit [$F_{(1, 185)} = 0.01$, $p = 0.93$, $\eta^2 < 0.001$].

Self-rated leadership potential

There was a significant main effect of participant gender on self-rated leadership potential, $F_{(1, 185)} = 5.23$, $p = 0.02$, $\eta^2 = 0.03$. Women had higher self-rated leadership potential ($M = 5.44$, $SD = 0.08$) than men ($M = 5.07$, $SD = 0.14$). There was no interaction effect between participant age and participant gender on self-rated leadership potential [$F_{(1, 185)} = 1.81$, $p = 0.18$, $\eta^2 = 0.01$]. There was no interaction effect between organizational culture and participant gender on self-rated leadership potential [$F_{(1, 185)} = 0.04$, $p = 0.85$, $\eta^2 < 0.001$]. There was no three-way interaction between participant age, participant gender and organizational culture on self-rated leadership potential [$F_{(1, 185)} = 0.08$, $p = 0.78$, $\eta^2 < 0.001$].

Discussion

Contrary to hypothesis 3, we found no relationship between age and self-rated leadership potential in this study. Furthermore, we found no interaction effects between organizational culture and participant age on self-rated leadership potential. There are two possible reasons for this. First, this could suggest that endorsing in-group stereotypes has a stronger effect than reinforcing stereotyped organizational culture on self-rated leadership potential. Stereotype embodiment theory (Levy, 2009) argues that age stereotypes are assimilated from the surrounding culture from childhood, and so it may be that the general societal context has more influence on age-based stereotyped thinking than the specific organizational context. Our hypotheses about the strength of effects for endorsement (of societal stereotypes) vs. reinforcement (of organizational culture) warrants further investigation. Second, the non-significant findings for self-rated leadership potential could also reflect a difference in the impact of different types of age-based stereotypes. The warmth-competence stereotype characteristics used in Study 1 may have greater influence on self-rated leadership potential than the alternative age stereotype characteristics used in Study 3; this potential difference could be addressed further in future research.

In support of Hypothesis 6, we observed interaction effects for job appeal and job fit, replicating our findings on the effects of stereotyped organizational culture on women's perceptions of organizational fit as found in Study 2. Additionally in this study, older workers, unlike women, also found the age-congruent organizational culture more appealing. The greater impact of workplace stereotypes on older workers compared to women may reflect the difference between gender and age stereotypes—gender is (mostly) fixed whereas age is fluid, and so negative older-age stereotypes become more self-relevant as people age. For instance, older workers may not necessarily perceive themselves in line with old-age stereotypes (stereotypes they perceive to be directed at *other* older people, Swift et al., 2017). Research suggests that old-age stereotypes have to be self-relevant in order to have a detrimental effect on either attitudes or behavior (Levy, 2009; Marques et al., 2014), which could explain why the age-typed organizational culture affected older workers perceptions of job appeal.

The inclusion of gender as a potentially intersecting identity did not yield the intersectional effects found in Studies 1 and 2. Gender did not interact with age and organizational culture to show a greater impact of organizational culture on older women compared to older men. However, this could reflect the nature of descriptors used in Study 3 compared to Study 1.

GENERAL DISCUSSION

Overall, we found partial support for our hypotheses across three studies. With respect to gender, and contrary to Hypothesis 1, we found that women self-rate the same amount (Study 1), if not more (Study 2), leadership potential than men. However, women's ratings of job fit are influenced by organizational culture (Hypothesis 5). With respect to age, we found a relationship between age and self-rated leadership potential (Hypothesis 3) in Study 1 but not Study 3. Furthermore, organizational culture impacts older workers' perceptions of job fit and job appeal (Hypothesis 6).

An important finding relates to the exploratory results on the inter-sectionality of gender and age in Study 1. We found evidence that both gender and age stereotypes have a greater

impact on older people compared to younger people. We also found that age stereotypes relate to self-rated leadership potential differently for older men and older women. Namely, endorsing competency-based age stereotypes reduced self-rated leadership potential in older women but not older men. Endorsing warmth-based stereotypes reduced self-rated leadership potential in older men but not older women. Nonetheless, endorsing the "softer" stereotypical traits of women was in fact positively related to older women's self-rated leadership potential. Notably, and perhaps unsurprisingly, younger men's self-rated leadership potential was advantaged by endorsing gender stereotypes about women being more communal than men. Surprisingly, younger women's self-rated leadership potential was not related to endorsing any stereotypes, which might reflect generational effects.

The more pronounced effects for older people compared to younger people may be explained by older people's lack of opportunity for leaving their low status group compared to younger people (Garstka et al., 2004). This is particularly likely for older women who are stereotypically leadership-incongruent based on their gender and age. We examined the effects for older people in Study 3. Older people self-rated less job appeal and less job fit in the younger culture. The limited representation of older people in Study 2 made it difficult to draw conclusions about the intersectional effects, particularly for older women. Also, the limited representation of men in Study 3 also made examining the intersectional effects more challenging. Based on the intersectional effects observed in Study 1, these warrant further investigation.

THEORETICAL AND APPLIED IMPLICATIONS

We contribute to three areas of research in social psychology. First, we extend research on stereotypes to reveal the impact of societal and organizational stereotypes on gender and age groups. Second, we introduce a new perspective for examining the subjectivity of leadership potential, looking at antecedents of self-rated leadership potential as opposed to evaluators' perceptions of a target's leadership potential. Finally, we shed light on the effects of stereotypes at the intersectional level of gender and age.

We contribute to the stereotypes literature by highlighting the significant and interactive role of agentic and communal gender stereotypes and competence and warmth age stereotypes. The findings suggest that, it may not be endorsing the stereotype that women and older people are too communal or warm, it may instead be the focus on the extent to which the stereotype is leader (in)congruent which relates to self-rated leadership potential. We cannot however generalize these findings to evaluator-driven research and instead conclude that this has been found in our target-driven research.

Research has shown that the gender gap is greater in masculine-stereotyped domains, evidencing an effect of stereotyped organizational culture on evaluators' perceptions (Elesser and Lever, 2011). We did not find this for self-ratings of leadership potential, however, we did find this for self-rated organizational fit. We cannot determine from our data whether societal stereotypes or stereotyped organizational cultures have more impact on women in general, because women self-rated as much, and more, leadership potential than men. However, the impact of societal stereotypes may in fact be more detrimental than organizational stereotypes because they may be likely to have more of an impact at earlier stages of women's careers. For example, endorsing stereotypes that disassociate women from leadership may discourage women from prioritizing leadership attainment in career planning. For women who are not deterred from pursuing leadership roles, their leadership ambition may counteract perceptions of organizational fit to pursue their potential to lead. This rationale would certainly support our findings. For older people, particularly older women, the role of societal stereotypes likely affects the extent to which they feel efficacy to change fields or train in an alternate profession. Research has documented the immediate effects of receiving feedback about one's leadership potential on performance and ambition (Steffens et al., 2018). Thus, frequent career cues such as workplace stereotypes, potential and performance evaluations are likely to have a stronger impact than job advertisements.

Our exploratory analyses at the intersectional level demonstrates the complex ways in which stereotypes can influence their targets. The results of our research demonstrating that younger women are less affected by gender stereotypes than older women highlight the need for further research to examine other high-level and low-level intersecting identities. What impact do gender and racial stereotypes have on minority ethnic women's perceptions of their own leadership potential in comparison to white women? It is likely that, as with older women, the detrimental effects for minority ethnic women are more prominent (Mirza, 2003). This warrants further empirical exploration and emphasizes the need for organizations to address diversity and equality as issues of intersectionality that have otherwise focused on white women for gender initiatives and black men for race initiatives (Ghavami and Peplau, 2013).

LIMITATIONS AND FUTURE DIRECTIONS

Our first study demonstrated clear intersectional interactions on self-rated leadership potential for older women in particular. However, the cross-sectional data of this study limits our conclusions. Although we expect that endorsing leadership-incongruent stereotypes about one's identity would reduce self-rated leadership potential, we cannot conclude the causal nature of this relationship. Studies 2 and 3 provide experimental tests, but future research should continue to uncover the underlying causal mechanisms with representative groups across ages and gender to examine the intersectional effects with A-priori hypotheses.

Studies 2 and 3 used experimental vignettes to manipulate workplace culture. There is evidence of a relationship between vignettes and real-life situations (e.g., Ganong and Coleman, 2005, 2006), and experimental vignettes are regarded as a reliable method of exploring research topics whilst maintaining control of the research process (Doz, 2011). Nonetheless, and given the novel findings, further research would benefit

from complementary studies which consider the workplace cultures that people experience on a daily basis. We also designed our experiments to investigate the effects of gender stereotypes and age stereotypes independently, this should be considered in relation to the inclusion of our intersectional exploratory analysis, where the older age category could be better represented in Study 2. It is possible that participants were aware of the nature of our hypotheses, as endorsement of stereotypes were asked explicitly in Study 1 and the within-participants design of Studies 2 and 3 could allow for comparisons to be drawn easily between the two organizational cultures. We recommend the use of deception checks for future research.

Our hypotheses were such that identity-incongruent stereotyped organizational cultures would reduce women's and older people's self-rated leadership potential. We did not support these hypotheses and also did not determine causes of these null effects. In Study 1 we measured endorsement of stereotypes, and in Studies 2 and 3 we manipulated stereotyped organizational culture. Therefore, we have not directly compared the effects of stereotype endorsement vs. stereotype reinforcement. Future research should address two limitations. First, experimentally compare societal stereotypes and organizational culture to identify which has greater effects on self-rated leadership potential, or if there is an interactive effect. Second, examine why, given stereotyped organizational culture affects women's and older people's perceptions of organizational fit, it does not have detrimental outcomes for self-rated leadership potential.

Finally, we limited our examination of the role of stereotypes on women and older people's self-rated leadership potential. Stereotypes are likely to have similar effects for other protected characteristics such as ethnicity, disability, particularly at the intersectional level also for other potential factors (e.g., maternity/paternity). Research should focus on identifying the leadership-related stereotypes that hinder the progression of underrepresented groups such as ethnic minorities (Gündemir et al., 2014) to drive forward research on understanding the internal barriers members of groups with protected characteristics face in leadership attainment.

CONCLUSION

We have contributed to a growing interest in the impact of bias on the targets of prejudice and the social-psychological variables contributing to the subjective nature of leadership potential. If women and older people are to be perceived as future leaders by others, they should first be able to perceive themselves as future leaders, without the constraints of societal stereotypes. Overall, promising findings indicate that stereotypes may be having less impact on younger women than their older counterparts.

ETHICS STATEMENT

All experiments were carried out in accordance with the recommendations of the School of Psychology Ethics Committee at the University of Kent, United Kingdom. The protocol was approved by the School of Psychology Ethics Committee. All participants gave written informed consent in accordance with the Declaration of Helsinki. The research was conducted in accordance with guidelines from the University of Kent Research Ethics (Human Participants) Committee, the Economic and Social Research Council (ESRC) Research Ethics Framework, and the ethical guidelines from the British Psychology Society (BPS).

AUTHOR CONTRIBUTIONS

FT and BS conceived the presented research hypotheses and design. GR initiated the collaborative study of target group members' perceptions of their own leadership potential. GR and AL provided theory development and feedback on research designs. FT led on the data analysis and writing of the paper, supported by BS in both respects. GR and AL advised on analytical methods and provided critical feedback on drafts of the paper. All authors helped shape the overall research, with research ideas partially grounded in earlier work by HS and AP.

FUNDING

Financial support was provided by the Economic and Social Research Council to Fatima Tresh (grant number ES/J500148/1).

REFERENCES

Abrams, D., Swift, H. J., and Drury, L. (2016). Old and unemployable? How age-based stereotypes affect willingness to hire job candidates. *J. Soc. Issues* 72, 105–121. doi: 10.1111/josi.12158

Atewologun, D., Cornish, T., and Tresh, F. (2018). *Unconscious Bias Training: An Assessment if the Evidence for Effectiveness*. Equality and Human Rights Commission Research Report Series.

Bantel, K. A., and Jackson, S. E. (1989). Top management and innovations in banking: does the composition of the top team make a difference? *Strategic Manag. J.* 10, 107–124. doi: 10.1002/smj.4250100709

Beck, V., and Williams, G. (2016). *Managing Older Workers: A Report for ACAS* (research paper 05/16). Retrieved from ACAS website: http://www.acas.org.uk/media/pdf/f/i/Managing-older-workers-a-report-for-acas.pdf (accessed March 22, 2019).

Bem, S. L. (1981). Gender schema theory: a cognitive account of sex typing. *Psychol. Rev.* 88, 354–364. doi: 10.1037/0033-295X.88.4.354

Bettencourt, B., Charlton, K., Dorr, N., and Hume, D. L. (2001). Status differences and in-group bias: a meta-analytic examination of the effects of status stability, status legitimacy, and group permeability. *Psychol. Bull.* 127, 520–542. doi: 10.1037//0033-2909.127.4.520

Bowles, H. R., Babcock, L., and McGinn, K. L. (2005). Constraints and triggers: situational mechanics of gender in negotiation. *J. Pers. Soc. Psychol.* 89:951. doi: 10.1037/0022-3514.89.6.951

Broadbridge, A. (2001). "Ageism in retailing: myth or reality?," in *Ageism in Work and Employment*, eds I. Golver and M. Branine (Burlington, VT: Ashgate), 153–174.

Business in the Community (2016). *Age in the Workplace: Retain, Retrain, Recruit*. Retrieved from: https://age.bitc.org.uk/all-resources/research-articles/age-workplace-retain-retrain-recruit (accessed March 22, 2019).

Business in the Community (2017). *Government Publish New Labour Market Statistics on Over 50's*. Retrieved from: https://age.bitc.org.uk/news-opinion/news/government-publish-new-labour-market-statistics-over-50s (accessed March 22, 2019).

Catalyst (2018). *Quick Take: Women in the Workforce.* Retrieved from: https://www.catalyst.org/knowledge/women-workforce-uk (accessed March 22, 2019).

Chapman, L., Sargent-Cox, K., Horswill, M. S., and Anstey, K. J. (2014). The impact of age stereotypes on older adults' hazard perception performance and driving confidence. *J. Appl. Gerontol.* 35, 642–652. doi: 10.1177/0733464813517505

Chrisler, J. C., Barney, A., and Palatino, B. (2016). Ageism can be hazardous to women's health: ageism, sexism, and stereotypes of older women in the healthcare system. *J. Soc. Issues* 72, 86–104. doi: 10.1111/josi.12157

Cochran, A., Hauschild, T., Elder, W. B., Neumayer, L. A., Brasel, K. J., and Crandall, M. L. (2013). Perceived gender-based barriers to careers in academic surgery. *Am. J. Surg.* 206, 263–268. doi: 10.1016/j.amjsurg.2012.07.044

Coffman, K. B. (2014). Evidence on self-stereotyping and the contribution of ideas. *Q. J. Econ.* 129, 1625–1660. doi: 10.1093/qje/qju023

Cuddy, A. J., and Fiske, S. T. (2002). "Doddering but dear: process, content and function in stereotyping of older persons," in *Ageism: Stereotyping and Prejudice Against Older Persons*, ed T. Nelson (Cambridge, MA: MIT Press), 3–26.

Diekman, A. B., and Hirnisey, L. (2007). The effect of context on the silver ceiling: a role congruity perspective on prejudiced responses. *Pers. Soc. Psychol. Bull.* 33, 1353–1366. doi: 10.1177/0146167207303019

Doz, Y. (2011). Qualitative research for international business. *J. Int. Bus. Stud.* 42, 582–590. doi: 10.1057/jibs.2011.18

Dries, N., and Pepermans, R. (2012). How to identify leadership potential: development and testing of a consensus model. *Hum. Resour. Manage.* 51, 361–385. doi: 10.1002/hrm.21473

Duncan, C., and Loretto, W. (2004). Never the right age? Gender and age-based discrimination in employment. *Gender Work Organ.* 11, 95–115. doi: 10.1111/j.1468-0432.2004.00222.x

Eagly, A. H. (2007). Female leadership advantage and disadvantage: resolving the contradictions. *Psychol. Women Q.* 31, 1–12. doi: 10.1111/j.1471-6402.2007.00326.x

Eagly, A. H., and Karau, S. J. (2002). Role congruity theory of prejudice toward female leaders. *Psychol. Rev.* 109, 573–598. doi: 10.1037/0033-295X.109.3.573

Eagly, A. H., Karau, S. J., and Makhijani, M. G. (1995). Gender and the effectiveness of leaders: a meta-analysis. *Psychol. Bull.* 117, 125–145. doi: 10.1037/0033-2909.117.1.125

Eagly, A. H., Makhijani, M. G., and Klonsky, B. G. (1992). Gender and the evaluation of leaders: a meta-analysis. *Psychol. Bull.* 111, 3. doi: 10.1016/j.leaqua.2003.09.004

Eaton, A. A., Visser, P. S., and Burns, V. (2017). How gender-role salience influences attitude strength and persuasive message processing. *Psychol. Women Q.* 41, 223–239. doi: 10.1177/0361684317696257

Eccles, J. S., Adler, T. F., Futterman, R., Goff, S. B., Kaczala, C. M., and Meece, J. L. (1983). "Expectancies, values, and academic behaviors," in *Achievement and Achievement Motivation,* ed J. T. Spence (San Francisco, CA: Freeman), 75–146.

Eiksson, T., Smith, N., and Smith, V. (2017). *Gender Stereotyping and Self-stereotyping Attitudes: A Large Field Study of Managers.* (IZA Discussion Paper No. 10932). Retrieved from: https://www.iza.org/publications/dp/10932 (accessed March 22, 2019).

Elesser, K. M., and Lever, J. (2011). Does gender bias against female leaders persist? Quantitative and qualitative data from a large-scale survey. *Hum. Relat.* 64, 1555–1578. doi: 10.1177/0018726711424323

Emile, M., Chalabaev, A., Stephan, Y., Corrion, K., and d'Arripe-Longueville, F. (2014). Aging stereotypes and active lifestyle: personal correlates of stereotype internalization and relationships with level of physical activity among older adults. *Psychol. Sport Exerc.* 15, 198–204. doi: 10.1016/j.psychsport.2013.11.002

Endendijk, J. J., Groeneveld, M. G., van Berkel, S. R., Hallers-Haalboom, E. T., Mesman, J., and Bakermans-Kranenburg, M. J. (2013). Gender stereotypes in the family context: mothers, fathers, and siblings. *Sex Roles* 68, 577–590. doi: 10.1007/s11199-013-0265-4

Finkelstein, L. M., Burke, M. J., and Raju, N. S. (1995). Age discrimination in simulated employment contexts: an integrative analysis. *J. Appl. Psychol.* 80, 652–663. doi: 10.1037/0021-9010.80.6.652

Fiske, S. T., Cuddy, A. J. C., Glick, P., and Xu, J. (2002). A model of (often mixed) stereotype content: competence and warmth respectively follow from perceived status and competition. *J. Pers. Soc. Psychol.* 82, 878–902. doi: 10.1037/0022-3514.82.6.878

Fiske, S. T., Xu, J., Cuddy, A. C., and Glick, P. (1999). (Dis) respecting versus (dis) liking: Status and interdependence predict ambivalent stereotypes of competence and warmth. *J. Soc. Issues* 55, 473–489. doi: 10.1111/0022-4537.00128

Ganong, L., and Coleman, M. (2005). Measuring intergenerational obligations. *J. Marriage Fam.* 67, 1003–1011. doi: 10.1111/j.1741-3737.2005.00190.x

Ganong, L., and Coleman, M. (2006). Multiple segment factorial vignette designs. *J. Marriage Fam.* 68, 455–468. doi: 10.1111/j.1741-3737.2006.00264.x

Garstka, T. A., Schmitt, M. T., Branscombe, N. R., and Hummert, M. L. (2004). How young and older adults differ in their responses to perceived age discrimination. *Psychol. Aging* 19, 326. doi: 10.1037/0882-7974.19.2.326

Gaucher, D., Friesen, J., and Kay, A. C. (2011). Evidence that gendered wording in job advertisements exists and sustains gender inequality. *J. Pers. Soc. Psychol.* 101, 109–128. doi: 10.1037/a0022530

Ghavami, N., and Peplau, L. A. (2013). An intersectional analysis of gender and ethnic stereotypes: testing three hypotheses. *Psychol. Women Q.*37(1), 113–127. doi: 10.1177/0361684312464203

Gipson, A. N., Pfaff, D. L., Mendelsohn, D. B., Catenacci, L. T., and Burke, W. W. (2017). Women and leadership: selection, development, leadership style, and performance. *J. Appl. Behav. Sci.* 53, 32–65. doi: 10.1177/0021886316687247

Gordon, R. A., and Arvey, R. D. (2004). Age bias in laboratory and field settings: a meta-analytic investigation 1. *J. Appl. Soc. Psychol.* 34, 468–492. doi: 10.1111/j.1559-1816.2004.tb02557.x

Gündemir, S., Homan, A. C., de Dreu, C. K. W., and van Vugt, M. (2014). Think leader, think white? Capturing and weakening an implicit pro-white leadership bias. *PLoS ONE* 9:e83915. doi: 10.1371/journal.pone.0083915

Harnois, C. E. (2014). Are perceptions of discrimination unidimensional, oppositional, or intersectional? Examining the relationship among perceived racial–ethnic-, gender-, and age-based discrimination. *Sociol. Perspect.* 57, 470–487. doi: 10.1177/0731121414543028

Hayes, A. F. (2013). *Introduction to Mediation, Moderation, and Conditional Process Analysis: A Regression-Based Approach*. New York, NY: The Guildford Press.

Heslin, P. A. (2009). "Potential" in the eye of the beholder: the role of managers who spot rising stars. *Ind. Organ. Psychol.* 2, 420–424. doi: 10.1111/j.1754-9434.2009.01166.x

Hirschfeld, R. R., Jordan, M. H., Thomas, C. H., and Feild, H. S. (2008). Observed leadership potential of personnel in a team setting: big five traits and proximal factors as predictors. *Int. J. Select. Assess.* 16, 385–402. doi: 10.1111/j.1468-2389.2008.00443.x

Hirschfeld, R. R., and Thomas, C. H. (2011). Age- and gender-based role incongruence: implications for knowledge mastery and observed leadership potential among personnel in a leadership development program. *Pers. Psychol.* 64, 661–692. doi: 10.1111/j.1744-6570.2011.01222.x

Hoyt, C. (2010). "Women and leadership," in *Leadership: Theory and Practice,* 5th Edn, ed P. Northouse's (Thousand Oaks, CA: Sage), 301–333.

Kray, L., and Shirako, A. (2011). "Stereotype threat in organisations: an examination of its scope, triggers, and possible interventions," in *Stereotype Threat: Theory, Process, and Application,* ed M. Inzlicht and T. Schmader (New York, NY: Oxford University Press), 173–187.

Krings, F., Sczesny, S., and Kluge, A. (2011). Stereotypical inferences as mediators of age discrimination: the role of competence and warmth. *Br. J. Manag.* 22, 187–201. doi: 10.1111/j.1467-8551.2010.00721.x

Kulik, C. T., Perera, S., and Cregan, C. (2016). Engage me: the mature-age worker and stereotype threat. *Acad. Manag. J.* 59, 2132–2156. doi: 10.5465/amj.2015.0564

Kurtz-Costes, B., Rowley, S. J., Harris-Britt, A., and Woods, T. A. (2008). Gender stereotypes about mathematics and science and self-perceptions of ability in late childhood and early adolescence. *Merrill Palmer Q.* 54, 386–409. doi: 10.1353/mpq.0.0001

Levy, B. (2009). Stereotype embodiment: a psychosocial approach to aging. *Curr. Dir. Psychol. Sci.* 18, 332–336. doi: 10.1111/j.1467-8721.2009.01662.x

Marcus, J., Fritzsche, B. A., Le, H., and Reeves, M. D. (2016). Validation of the work-related age-based stereotypes (WAS) scale. *J. Manager. Psychol.* 31, 989–1004. doi: 10.1108/JMP-11-2014-0320

Marques, S., Lima, M. L., Abrams, D., and Swift, H. J. (2014). Aging stereotypes and will-to-live: effects over time. *J. Appl. Soc. Psychol.* 44, 399–408. doi: 10.1111/jasp.12231

Martin, A. E., North, M. S., and Phillips, K. W. (2018). Intersectional escape: older women elude agentic prescriptions more than older men. *Pers. Soc. Psychol. Bull.* 45, 342–359. doi: 10.1177/0146167218784895

Mast, M. S. (2005). The world according to men: it is hierarchical and stereotypical. *Sex Roles* 53, 919–924. doi: 10.1007/s11199-005-8310-6

McCann,R., and Giles,H. (2002). "Ageism in the workplace: a communication perspective," in *Ageism: Stereotyping and Prejudice Against Older Persons*, eds T. Nelson (Cambridge, MA: MIT Press), 163–199.

McKinsey and Company (2015). *Diversity Matters*. Retrieved from: https://www.mckinsey.com/~/media/mckinsey/business%20functions/organization/our%20insights/why%20diversity%20matters/diversity%20matters.ashx

Mirza, H. S. (2003). "All the women are white, all the blacks are men–but some of us are brave: mapping the consequences of invisibility for black and minority ethnic women in Britain," in *Explaining Ethnic Differences: Changing Patterns of Disadvantage in Britain*, 121–138.

Mueller, J. S., Goncalo, J. A., and Kamdar, D. (2010). Recognizing creative leadership: can creative idea expression negatively relate to perceptions of leadership potential? *J. Exp. Soc. Psychol.* 47, 494–498. doi: 10.1016/j.jesp.2010.11.010

Perry, E. L., Golom, F. D., Catenacci, L., Ingraham, M. E., Covais, E. M., and Molina, J. J. (2017). Talkin''bout your generation: the impact of applicant age and generation on hiring-related perceptions and outcomes. *Work Aging Retire.* 3, 186–199. doi: 10.1093/workar/waw029

Peters, K., and Haslam, A. (2018). *Research: To Be a Good Leader, Start by Being a Good Follower*. Harvard Business Review, 2-4. Available online at: https://hbr.org/2018/08/research-to-be-a-good-leader-start-by-being-a-good-follower (accessed March 22, 2019).

Player, A., Randsley de Moura, G., Leite, A., Abrams, D., and Tresh, F. (in press). Overlooked leadership potential: the preference for leadership potential in job candidates who are men vs. women. *Front Psychol.* doi: 10.3389/fpsyg.2019.00755

Polavieja, J. G. (2012). Socially embedded investments: explaining gender differences in job-specific skills. *Am. J. Sociol.* 118, 592–634. doi: 10.1086/667810

Posthuma, R. A., and Campion, M. A. (2009). Age stereotypes in the workplace: common stereotypes, moderators, and future research directions. *J. Manage.* 35, 158–188. doi: 10.1177/0149206308318617

Ridgeway, C. L. (2011). *Framed by Gender: How Gender Inequality Persists in the Modern World*. New York, NY: Oxford University Press.

Robinson, C., Fetters, R., Riester, D., and Bracco, A. (2009). The paradox of potential: a suggestion for guiding talent management discussions in organizations. *Indus. Organ. Psychol.* 2, 413–415. doi: 10.1111/j.1754-9434.2009.01164.x

Salau, O., Osibanjo, A., Adeniji, A., Olyudayo, O., Faoloa, H., Igbinoba, E., et al. (2018). Data regarding talent management practices and innovation performance of academic staff in a technology-driven private university. *Data Brief* 19, 1040–1045. doi: 10.1016/j.dib.2018.05.081

Sarris, A., and Kirby, N. (2005). Antarctica: a study of person-culture fit. *Aust. J. Psychol.* 57, 161–169. doi: 10.1080/00049530500125165

Schein, V. E. (1973). The relationship between sex role stereotypes and requisite management characteristics. *J. Appl. Psychol.* 57, 95–100. doi: 10.1037/h0037128

Schein, V. E. (1975). The relationship between sex role stereotypes and requisite management characteristics among female managers. *J. Appl. Psychol.* 60, 340–344. doi: 10.1037/h0076637

Schwartz, J., Collins, L., Stockton, H., Wagner, D., and Walsh, B. (2017). *Rewriting the Rules for the Digital Age: 2017 Deloitte Global Human Capital Trends.* Retrieved from: https://www2.deloitte.com/am/en/pages/human-capital/articles/introduction-human-capital-trends-2017.html (accessed March 22, 2019).

Sczesny, S. (2004). Gender stereotypes and the attribution of leadership traits: a cross-cultural comparison. *Sex Roles* 51, 631–645. doi: 10.1007/s11199-004-0715-0

Silzer, R., and Church, A. H. (2009). The potential for potential. *Ind. Organ. Psychol.* 2, 446–452. doi: 10.1111/j.1754-9434.2009.01172.x

Simpson, R. (2000). Gender mix and organizational fit: how gender imbalance at different levels of the organisation impacts on women managers. *Women Manage. Rev.* 15, 5–18. doi: 10.1108/09649420010310173

Song, J., Zuo, B., Wen, F., and Yan, L. (2017). Math-gender stereotypes and career intentions: an application of expectancy-value theory. *Br. J. Guid. Counsel.* 45, 328–340. doi: 10.1080/03069885.2017.1283680

Spisak, B. R., Grabo, A. E., Arvey, R. D., and van Vugt, M. (2014). The age of exploration and exploitation: younger-looking leaders endorsed for change and older-looking leaders endorsed for stability. *Leadersh. Q.* 25, 805–816. doi: 10.1016/j.leaqua.2014.06.001

Stadler, K. (2011). Talent reviews: the key to effective succession management. *Bus. Strategy Ser.* 12, 264–271. doi: 10.1108/17515631111166906

Steele, C. M. (1992). Race and the schooling of Black Americans. *Atlantic Monthly* 269, 68–78.

Steele, C. M. (1997). A threat in the air: How stereotypes shape intellectual identity and performance. *Am. Psychol.* 52:613. doi: 10.1037/0003-066X.52.6.613

Steffens, N. K., Fonseca, M. A., Ryan, M. K., Rink, F. A., Stoker, J. I., and Pieterse, A. N. (2018). How feedback about leadership potential impacts ambition, organizational commitment, and performance. *Leadersh. Q.* 29, 637–647. doi: 10.1016/j.leaqua.2018.06.001

Sun, X., Xu, D., Luo, F., Wei, Z., Wei, C., and Xue, G. (2015). A cross-cultural perspective on the preference for potential effect: an individual participant data (IPD) meta-analysis approach. *PLoS ONE* 10:e0124170. doi: 10.1371/journal.pone.0124170

Swift, H., Abrams, D., Lamont, R., and Drury, L. (2017). The risks of ageism model: how ageism and negative attitudes toward age can be a barrier to active aging. *Soc. Issues Policy Rev.* 11, 195–231. doi: 10.1111/sipr.12031

Swift, H. J., Abrams, D., and Marques, S. (2013). Threat or boost? Social comparison affects older people's performance differently depending on task domain. *J. Gerontol. B Psychol. Soc. Sci.* 68, 23–30. doi: 10.1093/geronb/gbs044

Tam, T. (1997). Sex segregation and occupational gender inequality in the United States: devaluation or specialized training? *Am. J. Sociol.* 102, 1652–1692. doi: 10.1086/231129

Thomas, A. K., Smith, A. M., and Mazerolle, M. (2018). The unexpected relationship between retrieval demands and memory performance when older adults are faced with age-related stereotypes. *J. Gerontol. Psychol. Sci.* doi: 10.1093/geronb/gby031. . [Epub ahead of print].

Tormala, Z. L., Jia, J. S., and Norton, M. I. (2012). The preference for potential. *J. Pers. Soc. Psychol.*, 103, 567–583. doi: 10.1037/a0029227

Tresh, F., Randsley de Moura, G., Leite, C., and Wyatt, M. (2017). The intergroup dynamics of leadership potential. in *Leadership: Bridging the Divide', EASP* (Granada).

Tresh, F., Randsley de Moura, G., Leite, C., and Wyatt, M. (2018). *Perceptions of Leadership Potential: The Role of Sociodemographic Group Membership, Prototypicality and Performance*. Manuscript in preparation.

Triguero-Sánchez, R., Peña-Vinces, J., and Guillen, J. (2018). How to improve firm performance through employee diversity and organizational culture. *Rev. Business Manag.* 20, 378–400. doi: 10.7819/rbgn.v20i3.3303

Von Stockhausen, L., Koeser, S., and Sczesny, S. (2013). The gender typicality of faces and its impact on visual processing and on hiring decisions. *Exp. Psychol.* 60, 444–452. doi: 10.1027/1618-3169/a000217

Warr, P., and Pennington, J. (1993). "Views about age discrimination and older workers," in *Age and Employment: Policies, Attitudes, and Practice*, eds P. Taylor, A. Walker, B. Casey, H. Metcalf, J. Lakey, P. Warr, and J. Pennington (London: Institute of Personnel Management), 75–106.

World Economic Forum (2015). *The Global Gender Gap Report 2015*. Retrieved from World Economic Forum website: http://reports.weforum.org/global-gender-gap-report-2015/ (accessed March 22, 2019).

Wurm, S., Tesch-Romer, C., and Tomasik, M. J. (2007). Longitudinal findings on aging-related cognitions, control beliefs, and health in later life. *J. Gerontol.* 62, 156–164. doi: 10.1093/geronb/62.3.P156

Conflict of Interest Statement: The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

frontiers in Psychology

ORIGINAL RESEARCH
published: 03 May 2019
doi: 10.3389/fpsyg.2019.00752

Gender Differences in How Leaders Determine Succession Potential: The Role of Interpersonal Fit With Followers

Floor Rink[1], Janka I. Stoker[1], Michelle K. Ryan[1,2], Niklas K. Steffens[3] and Anne Nederveen Pieterse[4]*

[1]Faculty of Economics and Business, University of Groningen, Groningen, Netherlands, [2]Psychology, College of Life and Environmental Sciences, University of Exeter, Exeter, United Kingdom, [3]School of Psychology, The University of Queensland, Brisbane, QLD, Australia, [4]Rotterdam School of Management, Erasmus University Rotterdam, Rotterdam, Netherlands

This paper examined the existence of gender differences in the degree to which leaders' perceptions of successor potential is influenced by interpersonal fit. In Study 1 (N = 97 leaders, N = 280 followers), multi-source field data revealed that for male leaders, ratings of followers' potential as successors were positively related to interpersonal fit, measured by the degree to which followers' saw their leadership as being close and interpersonal (i.e., being coaching, transformational, and leading by example). For female leaders, these relationships were absent, suggesting that they are less influenced by interpersonal fit. In Study 2 (N = 311 leaders), a scenario study provided causal evidence that male leaders rated potential successors more positively when they perceived greater interpersonal fit with followers, whereas female leaders' successor ratings were not informed by perceptions of fit. We discuss the theoretical and practical implications for gendered leadership successor perceptions in organizations.

Keywords: gender differences, leadership, succession, interpersonal fit, old boys network

OPEN ACCESS

Edited by:
Roni Reiter-Palmon, University of Nebraska Omaha, United States

Reviewed by:
Judith Volmer, University of Bamberg, Germany
Paul B. Paulus, University of Texas at Arlington, United States

****Correspondence:***
Floor Rink
f.a.rink@rug.nl

Specialty section:
This article was submitted to Organizational Psychology, a section of the journal Frontiers in Psychology

Received: *13 September 2018*
Accepted: *18 March 2019*
Published: *03 May 2019*

Citation:
Rink F, Stoker JI, Ryan MK, Steffens NK and Nederveen Pieterse A (2019) Gender Differences in How Leaders Determine Succession Potential: The Role of Interpersonal Fit With Followers. Front. Psychol. 10:752. doi: 10.3389/fpsyg.2019.00752

INTRODUCTION

The relatively slow pace at which women's careers develop is a timely research topic in the fields of psychology and management. Scholars aim to understand why women still face obstacles in being promoted into senior leadership positions (Vincent-Lancrin, 2008), even though they are currently more successful than men in earning advanced educational degrees and are increasingly participating in the labor market. For example, the last global McKinsey report on women in the workplace (McKinsey and Company, 2017) demonstrates that while women are not leaving their companies at higher rates than men do, they still only make up, on average, only 20% of our senior corporate leaders.

The vast amount of research on the underrepresentation of women in positions of leadership suggests that disparities in promotion rates is not caused by women's lack of desire to advance their career (e.g., Ellemers et al., 2012; Peters et al., 2013). Rather, compared to men, women are less optimistic about their opportunity to attain a leadership position and anticipate more difficulties once in such positions, which makes them doubt their leadership competencies

(Keller et al., 2013, see also Lockwood and Kunda, 1997). Indeed, research has repeatedly validated that biased treatments during leader selection processes significantly contribute to women's disadvantage (Burke, 2011).

Although scholars offer various explanations for the existence of gendered selection biases, two reasons stand out. First, internalized gendered beliefs (or stereotypes) about what it takes to be an effective leader have been shown to lead to gender bias (Eagly et al., 1992; Heilman, 2001; Eagly and Karau, 2002). Specifically, both men and women tend to endorse the belief that effective leaders should show stereotypically masculine or agentic traits (i.e., the think manager-think male association, Schein, 1975, see also Davison and Burke, 2000).

Second, it has been argued that when it comes to leadership succession decisions, those at the top, who are overwhelmingly men, show a preference for promoting others with whom they share similar traits and characteristics or those with whom they have a positive interpersonal relationship. A recent meta-analysis (Koch et al., 2015) suggests that both stereotypes and interpersonal liking or similarity mutually reinforce each other. In this way, a preference for leadership successors that match traditionally (male) notions of leadership also enhances similarity at the top of organizations. This process, in turn, further limits the career possibilities of those who do not fit within a masculine culture.

Notably, while there is robust support for the existence for internalized stereotypes about leadership and gender and the way in which they bias selection and succession decisions (e.g., Heilman, 2001; Eagly, 2007; Cuddy et al., 2015), research investigating whether male leaders preference for socially similar others in leadership positions has been inconclusive. Literature from the fields of economics and sociology suggest that male leaders are motivated to maintain elite informal networks structures on the basis of interpersonal fit (i.e., the so-called "old boys network", McDonald, 2011). Interpersonal fit refers to the existence of positive interpersonal relationships guided by social similarities that facilitate the exchange of information and resources among those involved (e.g., Byrne, 1971; Ibarra et al., 2005). However, it remains unclear whether women, once they are in leadership positions, also make succession decisions on the basis of interpersonal liking due to experiences of social similarities or shared important features. Given that women are progressing into the upper organizational echelons (although there is a long way to go before equal representation is reached), it becomes more prudent and possible to answer this question. If women do make promotion and succession decisions based on interpersonal fit, this would suggest a breaking down of the old boys' network and a facilitation of the number of women in leadership positions over time. In this paper, we therefore systematically examine the degree to which male and female leaders rely on social similarities and use interpersonal fit when informally selecting successors for a future leader role.

STUDY OVERVIEW

We will use two distinct research methods to examine our research question. To ensure external validity and yield generalizable results, we first conducted a study among leaders and their followers in the field (N = 97 leaders, 24% female and N = 280 followers). Here, we asked leaders to indicate how much they would endorse each of their followers as a successor for a leadership position. To prevent common method bias among the study variables (Podsakoff et al., 2003), interpersonal fit was approximated by asking followers to rate their leader on three relational leadership styles: coaching, transformational leadership, and leading by example (Bass and Avolio, 1990; Arnold et al., 2000). Coaching entails helping followers to advance in their career and provide guidance in improving their skills; leading by example involves leader actions that influence followers to behave in ways that they consider valuable (Arnold et al., 2000); and transformational leadership refers to leaders who are visionary and inspire followers to perform beyond leader expectations (e.g., Bass and Avolio, 1990). Although positive follower ratings of these three leadership styles do not capture interpersonal fit directly, such ratings are known to be associated with positive relationships and a sense of sharedness (Wood, 2000; Wang et al., 2018). This is in line with Byrne's (1971) similarity-attraction hypothesis that positive relational assessments rarely occur without an underlying source of social similarity. Hence, positive leader evaluations on these three dimensions likely represent a good proxy of interpersonal fit. However, to further test the robustness of our Study 1 findings, we also conducted a second experimental scenario study among leaders (N = 311 leaders, 44% female). In this study, we established the isolated and causal effects between leader gender, interpersonal fit, and leader ratings of followers' successors potential. Participants were asked to imagine themselves in a position where they had to evaluate leadership succession candidates in the presence or absence of interpersonal fit information. Before turning to these studies, we will first review the literature and develop our hypothesis in more detail.

THEORETICAL FRAMEWORK

Male Leaders and Interpersonal Fit

One of the main explanations for the underrepresentation of women in leadership positions is the "think manager-think male" association (Schein and Davidson, 1993; Sczesny, 2003), leading to masculine norms for career progression (Crosby et al., 2004). This association reflects the robust belief that men are more prototypical as leaders and enjoy higher status in society than women do (Eagly, 1987, 2007; Davison and Burke, 2000; Heilman, 2001). Although views of effective leadership have gradually shifted over time to become somewhat congruent with more stereotypically feminine traits, such as warmth, good communication, and strong people skills (Bass et al., 1996; Eagly and Johannesen-Schmidt, 2001; Koenig et al., 2011), studies repeatedly confirm that both men and women tend to describe effective leaders as possessing mostly masculine traits (Koenig et al., 2011).

However, Koch et al. (2015) found meta-analytical evidence that men's preference to hire other men in male-dominated jobs was relatively stronger than was women's preference.

As a possible explanation for this finding, the scholars argued that, in addition to holding gendered beliefs about leadership, male leaders also feel more socially similar to, or experience more interpersonal fit with, prospective male successors, which leads them to evaluate these successors more positively (see also Byrne, 1971). The general metaphor used to illustrate this male preference for interpersonal fit is the so-called "old boys' network." This metaphor captures what Kanter (1977) coined as the "shadow structure" within organizations, whereby male leaders tend to engage with those junior employees, or followers, within their informal network activities who are also male or who are socially similar to them. The theoretical rationale currently used to explain why male leaders hold this preference is that they expect these followers to work in similar ways and believe that these followers will endorse their leadership style, which further legitimizes current power relations (Ibarra, 1992; McDonald, 2011). However, this "old boys' network" thereby often excludes women and members of other minority groups, such as those based on race, religion, class, or sexuality.

The old boys' network argument thus represents a second potential explanation for men's continued domination in leadership positions. Organizational and sociological studies have consistently established the clear benefits of having a strong informal management network for followers, as networks play a key role in identifying and preparing potential successors for future leadership roles (Garman and Glawe, 2004; Virick and Greer, 2012). For example, according to the sponsored mobility model of career success, informal networks give (male) followers access to the valuable resources and support needed to stand out and advance in their careers (McDonald, 2011). In this way, men not only experience greater role congruity in senior positions than do women, they are also more likely to receive more social support on their route to the top (Saloner, 1985; Simon and Warner, 1992; Oakley, 2000; Forret and Dougherty, 2004; Bu and Roy, 2005; Hogan et al., 2005; Berardi and Seabright, 2011; Kramarz and Thesmar, 2013).

While it is clear that male leaders' preferences for interpersonal fit with their followers and potential successors would further reinforce gender inequality dynamics, direct evidence for the existence of this preference is relatively scarce (McDonald, 2011; Renneboog and Zhao, 2011). However, one meta-analysis across 30 studies in economics (Ng et al., 2005) demonstrates that most organizations have sponsor systems in place, in terms of career sponsorship from senior managers, formal supervisory support, developmental opportunities, and access to organizational resources. These sponsor systems, in turn, determine the upward mobility (salary increases and the number of career steps made) of followers who are closely connected to higher management (i.e., those who are also male, married, and white, Ng et al., 2005).

From a psychological view, there has been, to our knowledge, very little direct evidence for the old boys' network, although the idea does resonate with similarity attraction theory, to which we referred earlier (Byrne, 1971). This theory emphasizes the importance of interpersonal processes between individuals, such as between leaders and their potential successors. Corresponding to the concept of homophily, it posits that in starting new relationships, individuals have the tendency to associate with, and develop a greater liking for others based on shared characteristics (e.g., Greenberg and Mollick, 2017) and/or shared social attitudes (i.e., similar beliefs toward a certain idea, person, or situation, Berscheid and Walster, 1969; Eagly and Chaiken, 1998). Psychological studies offer parsimonious support for this assumption, showing that people hold a preference for shared attitudes because it leads them to expect that one's own beliefs are correct, the other will demonstrate predictive behavior, and the other will like them and offer support if needed (e.g., Wood, 2000).

Hence, scholars within this field also argue that within traditional male-dominated organizations, male leaders should be inclined to select potential successors for managerial positions with whom they share social similarities (McCarthy et al., 2010). A recent network study among scientists suggests that this pattern may indeed exist, showing that men, compared to women, build professional networks with a higher proportion of male to female supporters (both inside and outside their academic institution), and this proportion, subsequently, relates to higher scores of men on perceived career success and mobility (Spurk et al., 2015). In conclusion, research from different disciplines suggests that male leaders will show a tendency to informally select potential successors based on interpersonal fit perceptions.

Female Leaders and Interpersonal Fit

An important next question is whether we would expect female leaders, just like male leaders, to be attuned to interpersonal fit perceptions when selecting successors. Literature on the old boys' network phenomenon and similarity attraction processes proposes two competing perspectives on the way in which female leaders, once in power, influence the career prospects of their followers (Maume, 2011; Stainback et al., 2016).

On the one hand, scholars argue that female leaders are indeed susceptible to the laws of homophily and similarity attraction, implying that they too will be inclined to take interpersonal fit into account when choosing potential successors for management positions. In this way, scholars have argued that female leaders can act as "change agents," and that their presence in leadership positions will automatically erode gender inequality in the work place (McPherson et al., 2001; Elliott and Smith, 2004). Indeed, there is evidence that female leaders are just as likely as men to provide networking opportunities to followers who are socially similar to them (e.g., Konrad et al., 2008). Building on this logic, Greenberg and Mollick (2017) go one step further and coined the term "activist choice" to argue that interpersonal fit will probably be *more* salient to female leaders than to male leaders because of "…perceptions of shared structural barriers stemming from a common group-level social identity and an underlying desire to help overcome them" (p. 342).

On the other hand, scholars have underscored a "cog in the machine" perspective on female leaders' attitudes and behaviors toward their followers (Cohen and Huffman, 2007). This perspective argues that there are a number of reasons why female leaders may *not* be in a position to change existing

gender inequality. First, although the study of Koch et al. (2015) showed that male leaders preferred men to women in male-dominated jobs more strongly than female leaders did, female leaders still generally held a male preference. This finding underscores the large body of psychological research demonstrating that women too tend to endorse the "think male-think manager association" (Eagly, 2007). Hence, women seem, at least under some circumstances, also biased in which followers they view as possible future leaders (Powell et al., 2002). Second, it is also likely that in their leadership roles, women do not hold sufficient power to challenge the old boys' club, and hence cannot simply create a "new girls' network" (as awful as that term is). This lack of power is due to the facts that women simply tend to occupy lower level positions compared to their male counterparts (Elliott and Smith, 2004) and are often taken minorities in they do obtain top-level positions (Ellemers et al., 2012). Finally, if women must display stereotypically masculine traits to be seen as suitable for leadership positions (Heilman, 2001, 2012), women may accommodate to these expectations and will start to value these features as positive traits (Maume, 2011). Consequently, female leaders can also conform to existing management norms and behave like male leaders, hereby further advancing the careers of male followers, rather than that of female followers (Kanter, 1977; Ely, 1994). For example, scholars have introduced the "queen bee phenomenon", suggesting that in male-dominated organizations, female leaders can start distancing themselves from junior women psychologically and begin to legitimize gender inequality as a coping response to their marginalized position (Derks et al., 2016). In support of this idea, studies have found that women who are advancing in their career adopt a masculine self-presentation when they experience social identity threat due to gender biases (Ellemers et al., 2012; Kaiser and Spalding, 2015).

In relation to interpersonal fit perceptions more directly, the literature seems to offer support for both perspectives. Psychological research has found that, generally speaking, both interpersonal fit perceptions and gender significantly determine both male and female leaders' interpersonal attraction to followers (Tsui and O'Reilly, 1989). Moreover, research has found support for the "activist choice" notion (Greenberg and Mollick, 2017), particularly when women's representation at higher organizational levels is substantial (Cohen et al., 1998, also see Stainback et al., 2016) or when female leaders hold positions for longer periods of time (Arvate et al., 2018). These findings suggest that female leaders too can be guided by interpersonal fit preferences and hereby shape the career positions of other women. Nonetheless, in contrast to these findings, there is also research clearly supporting the opposing perspective, showing that female leaders' direct impact on the careers of female followers is limited (Maume, 2011; Stainback and Kwon, 2012).

It is also important to note that the extant literature does not, to our knowledge, systematically compare the relevance of interpersonal fit between female and male leaders. It is therefore useful to build on sociological and management studies that have looked more closely at the role of social similarity and fit in the network building activities of male and female leaders (e.g., Ibarra, 1992; Benenson, 1993; Baumeister and Sommer, 1997; Friebel and Seabright, 2011). In this area of research, studies obtained clear gender differences in network relationships (Ibarra, 1992; Lyness and Thompson, 2000; Metz and Tharenou, 2001; Linehan and Scullion, 2008; Kleinbaum et al., 2013). In Ibarra's seminal work (Ibarra, 1992, 1993), for example, men were more likely to form homogeneous ties across multiple networks based on same sex and fit than women. In addition, men's ties were also significantly stronger than women's ties. In line with the "cog in the machine" perspective, these findings strongly support the idea that for female leaders, similarity to potential successors may be less relevant than for male leaders.

Based on the network findings above, which most closely reflect leader responses to social similarity, our central proposition is that the relative importance of interpersonal fit when evaluating followers for their potential as successors is likely to be gendered. More specifically, we hypothesize that leader gender will influence the link between interpersonal fit and leader ratings of followers' successor potential, such that male leaders will be more likely to select interpersonally similar followers as potential successors than will female leaders. In the following sections, we will present two studies, a multisource field study and a vignette study among male and female leaders, in which we examined our proposition.

STUDY 1

In our first study, we conducted a field survey where we examined both leaders and their followers as research sources. In this way, we could test the degree to which interpersonal fit perceptions affected male and female leaders' evaluations of their followers' potential as successors. As mentioned in section "Introduction," we captured interpersonal fit by asking the followers to rate their leaders on coaching, leading by example, and transformational leadership, as these three relational leadership styles generally reflect positive relationships and social similarity between leaders and their followers (Judge and Piccolo, 2004; Barbuto and Burbach, 2006). Coaching reflects adequate guidance in career advancement and skill development; leading by example reflects leader actions that followers value and like to adapt (Arnold et al., 2000); and transformational leadership reflects the use of ideals that inspire followers (e.g., Bass and Avolio, 1990). Notably, scholars rely heavily on follower ratings to assess leader evaluations because leadership inherently entails the dynamic interaction between leaders and followers (Riggio et al., 2008). Moreover, by measuring interpersonal fit unobtrusively through independent follower ratings, we were able to circumvent common method bias (such as inflated relationships between perceptions of interpersonal fit and leaders' successor ratings; Siemsen et al., 2010). Finally, scholars studying the "old boys' network" in organizations or similarity-attraction processes between leaders and followers generally expect a close link between positive follower ratings of leaders and leader-follower similarity. This is evident from

the notion that socially similar followers will endorse their leaders (McDonald, 2011). Moreover, Byrne's (1971) interpersonal fit definition highlights that fit consists of social similarity, positive interpersonal relationships, and information exchange because "likeness begets liking." From this argument, it follows that positive leader evaluations by followers indirectly capture underlying fit perceptions. Given our focus on these three leadership styles, our formal first hypothesis is:

> H1: Leader gender will moderate the positive relationships between interpersonal fit (i.e., follower evaluations of leaders' coaching, leading by example, and being transformational) and leaders' ratings of follower's potential as successor. This relationship should be significantly stronger for male leaders than for female leaders.

Method

Participants

Our participants were 290 followers and 97 leaders. As 10 followers did not indicate their demographic data, our final sample consisted of 280 followers. Participants were employed in six Dutch Ministries and were invited to participate *via* internal email. The overall respective department tenure from all participants ranged from less than 1–43 years (M = 14.50; SD = 11.03).

Of the followers, 102 were female and 179 male, with a mean age of 47 years. Followers themselves held mid-level management positions and were highly educated, with 97% of them having completed a university degree. On average they had worked for approximately 14 years in their ministry (SD = 10.79) and 3 years in their current role (SD = 3.35). Of the leaders, 23 were female and 74 male, their mean age was 49 years and 93% held a university degree. On average, they worked for approximately 16 years in their ministry (SD = 12.43) and also 3 years in their current role (SD = 5.42).

Procedure

Participation was voluntary, and confidentiality was assured. All measures were translated into Dutch using a double-blind back-translation procedure. To rule out any common method bias in responses, leaders evaluated their followers for their potential as a leadership successor, whereas the followers rated interpersonal fit in terms of the extent to which their respective leader coached them, led them by example, and used a transformational leadership style.

Measures

Leaders indicated a *follower's potential to be a leadership successor* by responding to one item on a seven-point Likert scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*); "Would you support and endorse this person as the leader of the group after you had gotten a promotion and needed a replacement?" *Leader gender* and *follower gender* (as a control) were coded as 0 = male, 1 = female.

To assess interpersonal fit, we measure followers evaluations of their leaders on the following: first, leaders use of *coachin*g, where followers responded to the following items on identical seven-point Likert scales (Arnold et al., 2000; α = 0.88); "My leader helps us our team in areas in which we need more training"; "My leader encourages team members to solve problems together", "My leader helps developing good relations among team members". Second, *leadership by example* (Arnold et al., 2000; α = 0.86), where followers answered two items: "My leader sets high standards for performance by his/her own behavior," "My leader sets a good example by the way he/she behaves". Finally, we used six items to measure followers' perceptions of how *transformational* their leader was (Carless et al., 2000, α = 0.85); "My leader inspires others with his/her plans for the future", "My leader leads by example," "My leader develops a team attitude and spirit among employees," "My leader insists on only the best performance," "My leader shows respect for my personal feelings," "My leader has stimulated me to rethink the way I do things."

Results

Table 1 presents the descriptive statistics. Our proxies for interpersonal fit were all significantly and positively related to one another (coaching and leading by example, r = 0.81, $p < 0.001$; coaching and transformational leadership, r = 0.75, $p < 0.001$; leading by example and transformational leadership, r = 0.86, $p < 0.001$). There were also significant relationships between follower gender and successorship (r = 0.15, $p < 0.05$) as well as perceived leader coaching (r = −0.11, $p < 0.05$), suggesting that this variable should be included in our hypothesis testing analyses (Becker, 2005).

TABLE 1 | Descriptive statistics and Pearson zero-order correlations (study 1).

Variables	*M*	*SD*	1	2	3	4	5	6
1. Coaching	4.95	1.25	–	0.81**	0.75**	0.08	0.05	–0.11*
2. Leading by example	5.10	1.03		–	0.86**	0.05	0.06	–0.02
3. Transformational leadership	5.23	1.33			–	0.06	–0.00	–0.09
4. Leader gender	1.22	0.41				–	–0.01	0.11
5. Successorship	3.89	2.01					–	0.15*
6. Follower gender	1.34	0.47						–

*Note: All correlations are at the individual level of analysis. Correlations involving these variables should therefore be interpreted with caution. n = 280, *p < 0.05, **p < 0.01. Two-tailed.*

Given that the number of followers per leader was somewhat low (M = 3.07; with 16% of leaders having a single follower), multi-level analyses would likely yield inaccurate estimates (the number of observations are lower than a minimum of 15–20 that researchers' simulations have shown to be optimal; Hox, 2010). We therefore focused on single-level analyses and ran a series of hierarchical linear regressions through Hayes' PROCESS macro (Hayes, 2013, Model 1, 95,000 bootstraps, 95% *CI* levels). For this purpose, we standardized all model variables, except for leader gender and follower gender (Bickel, 2007). The regression models we ran assessed whether the interpersonal fit between followers' leader evaluations (i.e., in terms of evaluations of leaders' coaching, leading by example, and being transformational) and leader evaluations of followers' successorship potential was moderated by leader gender.

Generally speaking, the results supported Hypothesis 1. There were no significant main effects for leader gender (lowest p = 0.62). The three proxies for interpersonal fit each had a significant direct relationship with followers' successorship potential (coaching, $p < 0.001$; leading by example, p = 0.014, and transformational leadership, p = 0.004). As anticipated, however, these main effects for the proxies were qualified by significant interaction effects with leader gender (i.e., coaching × leader gender, $p < 0.001$, *CI* −1.11 to −0.27; leading by example × leader gender, p = 0.014, *CI* −0.98 to −0.11; transformational leadership × leadership, p = 0.009, *CI* −1.29 to −0.18). Notably, follower gender was a significant predictor of follower successorship (lowest p = 0.004), but this variable did not influence our obtained findings or separately interact with any of our study variables.

Further decomposition of the interaction terms with simple slope analyses demonstrated that for male leaders, interpersonal fit, in terms of follower evaluations of leaders' coaching and use of a transformational style, was significantly related to their perceptions of followers' successorship potential (respectively, B = 0.17, t = 2.67, p = 0.008, *CI*: 0.045–0.30; B = 0.15, t = 2.40, p = 0.02, *CI*: 0.023–0.28). Only evaluations of leading by example was unrelated to perceptions of followers' successor potential, B = 0.08, t = 1.48, p = 0.14, *CI*: −0.03 to 0.23). By contrast, for female leaders, interpersonal fit, in terms of follower evaluations of these leaders' coaching (B = −0.26, t = −2.23, p = 0.03, *CI*: −0.49 to −0.03) and leading by example (B = −0.26, t = −2.01, p = 0.04, *CI*: −0.52 to −0.01) were unrelated to their perceptions of followers' successorship potential, while their use of a transformational style (B = −0.23, t = −1.73, p = 0.09, *CI*: −0.048 to 0. 03) was negatively related to their successorship judgments (**Figures 1**–**3**).

Supplementary Analysis

The three leadership styles together also formed a highly reliable scale (α = 0.93). Additional regression analyses also demonstrated a similar pattern of results. There were main effects of the overall leader evaluation measure (p = 0.002) and follower gender (p = 0.005) on leaders' ratings of followers' successor potential. Yet again, these was also a significant interaction between leader evaluations and leader gender on their successorship ratings (p = 0.003, *CI*: −1.29 to −0.27). The simple slope analyses revealed that the general leader evaluations were significantly positively related to male leaders' perceptions of followers' successor potential (B = 0.15, t = 2.38, p = 0.02, *CI*: 0.03–0.28) but significantly negatively related to female leaders' successor ratings (B = −0.26, t = −2.12, p = 0.03, *CI*: −0.51 to −0.09). See our **Supplementary Figure 1**.

Discussion

Study 1 represents a unique field sample of senior leaders and their followers. To rule out common-source bias (Podsakoff et al., 2003), this study used multiple sources such that senior leaders provided data concerning leadership successor potential of followers, while followers provided a proxy for interpersonal fit through their evaluations of their leaders. Notably, we employed a continuous measure of successor potential that allowed for assessing natural variation in potential and its relationship with interpersonal fit. Hence, this study provided externally validating evidence of our hypothesized relationships.

Nonetheless, Study 1 is not without limitations. First, our reliance on follower ratings of the three relational leadership styles implies that we did not capture interpersonal fit directly. Hence, it could be that followers' evaluations merely reflect positive leadership behaviors, rather than an underlying source of similarity. Moreover, given that followers can make incorrect inferences of leadership behavior (see e.g., Bono et al., 2012), it would have been more optimal if leaders would have also provided self-ratings on the leadership styles. Interestingly, although the recent meta-analysis conducted by Wang et al. (2018) shows that leader-follower ratings of the three specific leadership dimensions, we focus on generally correlate significantly with each other, suggesting that our follower ratings probably reasonably reflect leaders' own perceptions. Even so, we recognize that the use of multiple data sources to assess similar constructs is important because it circumvents biased response patterns. Moreover, relevant in our case, it would have also allowed us to develop and use a more direct indicator of fit.

Second, given the cross-sectional nature of this study, another alternative explanation of our findings may be that followers themselves, once chosen as a successor by a male leader, start to evaluate leadership and interpersonal fit more positively, whereas for female leaders, the reverse may be true. Such an interpretation would suggest that followers' evaluations of their female leaders are not influenced by the extent to which these leaders identify them as a successor. This alternative logic seems unlikely as it goes against recent research demonstrating that successors generally positively evaluate their work environment and their leader (Van Quaquebeke et al., 2011; Steffens et al., 2018). Yet we conducted a second experimental vignette study to more directly test whether interpersonal fit perceptions have a greater role in successor ratings of male leaders than that of female leaders and to establish the causality of this claim. We thus designed Study 2 to examine the internal validity and robustness of our hypothesis. We presented male and female leaders with three different successor profiles that varied systematically in terms of interpersonal fit. This time, we operationalized interpersonal fit between leaders and their

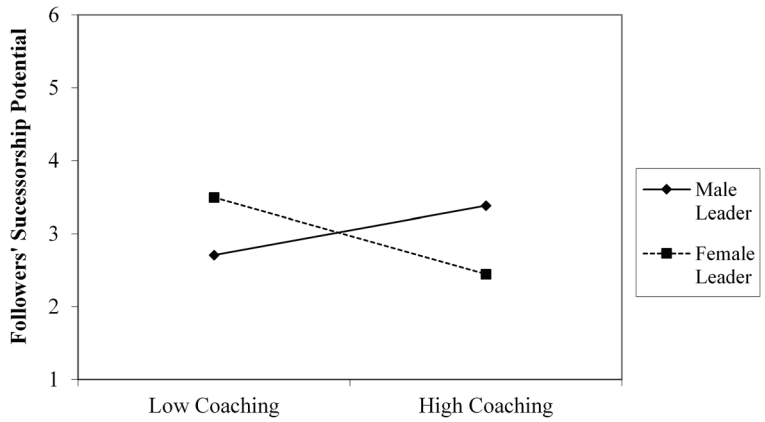

FIGURE 1 | Interactive relationship of followers' evaluation of leaders' use of coaching and leader gender with leaders' assessment of followers' successorship potential (study 1).

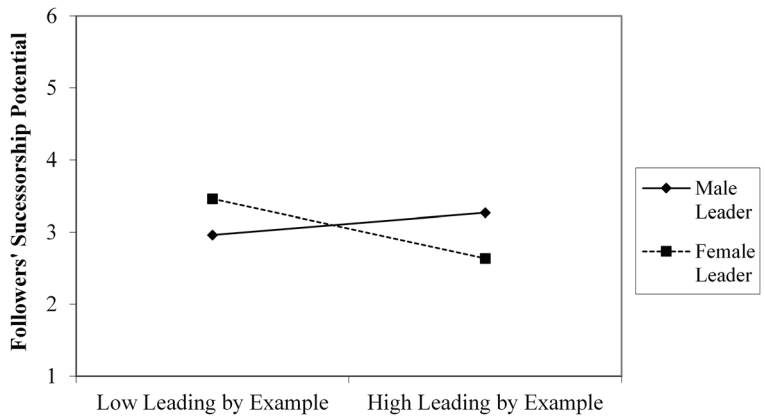

FIGURE 2 | Interactive relationship of followers' evaluation of leaders use of leading by example and leader gender with leaders' assessment of followers' successorship potential (study 1).

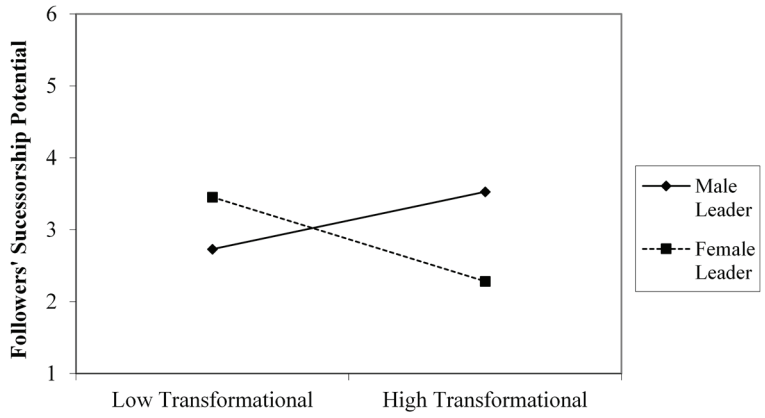

FIGURE 3 | Interactive relationship of followers' evaluation of leaders use of a transformational style and leader gender with leaders' assessment of followers' successorship potential (study 1).

followers in terms of commonalities that are relevant in the work domain (i.e., having the same interpersonal leadership style, using similar problem solving or absence of information on interpersonal fit with leaders). One additional profile presented a neutral baseline condition, in which no information about the presence or absence of interpersonal fit was provided. Our key dependent measure was again leaders' ratings of follower successor potential. As this design differs from the first study, the hypothesis we tested here was:

> H2: Leader gender moderates the relationship between interpersonal fit and followers' successorship potential, such that this relationship is significantly stronger for male leaders than for female leaders.

STUDY 2

Method

Design and Participants

Study 2 received ethical approval by the first author's academic institution and consisted of a leader gender (male vs. female) × interpersonal fit (control vs. fit vs. lack of fit) experimental design. Participants were 329 employees from the Dutch healthcare and financial industries. Participants all had leadership positions within their organization and participated in the study as part of an executive leadership training program. Participants were randomly assigned to one of the three interpersonal fit conditions. Thirteen participants indicated that they did not yet occupy a leadership position and five participants did not fully complete the questionnaire, which led to a final sample of n = 311 participants (44% female and 56% male) whom we included in the analysis. Participants' mean age was M = 44.68 years, SD = 10.59 and their average work experience in the current position was M = 6.10 years; SD = 6.84.

Procedure

Participation was voluntary and confidentiality was assured. Participants were first asked to provide demographic background information and to answer several questions about their position within their organization (see below). Leaders were then asked to immerse themselves in the situation presented to them. Specifically, they had to imagine that they had been promoted at work in a more senior leadership position. As a result of this promotion, their current leadership position would become vacant. Participants were then told that one of their followers had expressed interest in their current position. They were asked to provide higher management with information about this followers' successor potential.

There were three conditions: a follower without fit information or with information in which the follower either clearly *had* or clearly *lacked* interpersonal fit with the leader. Notably, across the three conditions, we kept the competence level of the potential successor equally high such that all leaders were presented with the same baseline information about their followers' work performance. This procedure allowed us to compare male and female leaders' responses to interpersonal fit while holding their expectations of the followers' performance constant.

Successor Fit Manipulation

Participants in all conditions read the following description on the follower: "The candidate has the recommended diplomas, followed several management training courses, and has gained leadership experience. The candidate has been working within the organization for several years now. You are familiar with this person and believe that they will fit well in your team. Thus, this person seems competent to perform your job the candidate and can become a core member of the team."

When participants were allocated to the control condition, they received no additional information about interpersonal fit. However, when participants were allocated to one of the two fit conditions, they did receive additional interpersonal fit information, indicating whether or not the leader had an interpersonal fit with the successor (respectively fit vs. lack of fit); "*In addition* (*However*), you feel that this person is quite *similar* (*different*) to you. The candidate has *the same* (*a different*) interpersonal leadership style, approaches problems *using a similar* (*from a different*) perspective, and holds a *similar* (*different*) work attitude."

Manipulation Checks and Dependent Measures

Measures

To check whether our manipulation of interpersonal fit was successful, we measured *perceptions of interpersonal fit* with the follower through the following three items, each rated on a seven-point Likert scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*); "I personally like the candidate," "I think that I could personally get along with this candidate," "I expect that it would be easy to develop a bond with this candidate," and "I personally feel connected with the candidate" (Peters et al., 2015, α = 0.90).

Our central outcome variable, *followers' successor potential*, was obtained with the following five leader statements adapted from Ryan and Haslam (2005); "I think that the candidate will be suitable for my position," "I think the candidate will be effective in my position," "I think the candidate will perform well in my position," and "I think this person is an attractive candidate for the position." These items were also assessed on a scale ranging from (1) *strongly disagree* to (7) *strongly agree* (α = 0.92).

As control variables, we asked leaders to estimate *the percentage of female leaders* currently working in their organization, as this signals how socially isolated these women are in their position. In turn, this unique experience could influence the succession planning of female leaders. Leaders could choose one of three categories: (1) 0–20% (46% response), (2) 21–50% (35%), or (3) >50%. The percentages of leader responses within each of these categories were, respectively, 46, 35, and 17%. Finally, for similar reasons, we also assessed leaders own *power* levels within the organization, with three

items from Maner and Mead (2010); "In this position, I am able to influence others," "I am successful in reaching my goals," and "I control important resources of the organization." The answer-scale was again ranging from (1) *strongly disagree* to (7) *strongly agree* (α = 0.72).

Results

Table 2 presents the descriptive statistics. As anticipated, the three interpersonal fit conditions were significantly related to our dependent variables (i.e., interpersonal fit, r = −0.21, $p < 0.05$ and successorship, r = −0.25, $p < 0.05$), and these variables were also related to each other (r = 0.50, $p < 0.05$). These correlations indicate that fit and successorship associated negatively with our lack of fit condition (which was labeled with the highest score: 1 = presence of fit, 2 = control, and 3 = lack of fit). Of the control variables, the average percentage of female leaders currently working within an organization was significantly related to leader gender, (r = −0.16, $p < 0.05$), meaning that the female leaders often worked in organizations with few other women in leadership positions. However, this measure did not significantly relate to our study variables and was therefore excluded as a control to prevent biased parameter estimates (Becker, 2005). Leader power did significantly relate to interpersonal fit (r = 0.13, $p < 0.01$) and successorship (r = 0.22, $p < 0.05$), suggesting that this variable warrants special attention in our hypothesis testing. An additional one-way ANOVA with leader gender as predictor on leaders' social power confirmed that male leaders reported having significantly more power (M = 5.36, SD = 0.95) than did female leaders [M = 5.06, SD = 0.92; $F(1, 310) = 6.43$, p = 0.012, η = 0.21].

To check whether our interpersonal fit manipulation was successful, we first performed a 2 (leader gender) by 3 (interpersonal fit) ANOVA on our fit check. As intended, the results revealed a main effect of fit across the three experimental conditions that was not influenced by leader gender, $F(2, 309) = 18.68$, $p < 0.001$, η = 0.11. On average, all leaders rated relatively high levels of fit but reported stronger interpersonal fit with the potential successor in the fit condition, M = 5.27, SD = 0.89, than in the lack of fit condition, M = 4.45, SD = 0.96, or in the control condition, M = 4.96, SD = 0.84.

Our second hypothesis postulates that the relationship between interpersonal fit and followers' successorship potential should be stronger for male leaders than for female leaders. To test this hypothesis, we ran a *second* 2 (leader gender) by 3 (interpersonal fit) ANOVA on our fit check our main outcome variable, *followers' successor potential*. The results of this ANOVA showed that there were main effects for leader gender [$F(1, 309) = 4.11$, p = 0.014, η = 0.01], and interpersonal fit [$F(1, 309) = 12.13$, $p < 0.001$, η = 0.07]. However, we also obtained a marginally significant interaction effect between these two factors, $F(2, 308) = 2.66$, p = 0.07, η = 0.02. Planned comparison analyses across conditions (Tukey LSD; using 95% bootstrap confidence intervals based on 1,000 resamples) shed light on the pattern of this interaction. In essence, this pattern mainly supports Hypothesis 2. Male and female leaders believed the follower to be a good successor when there was either fit or in the control condition where they merely received competence information. Importantly, however, when they received information that there was *lack* of fit, male leaders rated the followers' successor potential significantly lower (M = 4.71) than female leaders (M = 5.21; p = 0.004). Accordingly, male leaders' ratings of successor potential were significantly reduced when there was lack of fit than in the neutral (M = 5.47, $p < 0.001$) or fit conditions (M = 5.42, $p < 0.001$). In contrast, the female leaders' successor evaluation was less dependent on fit, such that the lack of fit condition outcomes only differed marginally from the fit conditions, M = 5.53, p = 0.07) and not from the control condition. A visual representation of the interaction pattern is provided in **Figure 4**.

Notably, when we did include the percentage of female leaders currently working in leaders' organizations as a control variable in this analysis, the interaction term of the 2 by 3 ANOVA on followers' successor potential dropped to non-significance, $F(2, 302) = 2.04$, p = 0.13, η = 0.014. However, the simple main effects within the no-fit condition remains significantly different for male and female leaders (p = 0.019).

In addition, we also explored in a supplementary analysis whether the interactive effect of leader gender and interpersonal fit on followers' successor potential could be explained by the power levels of male and female leaders. To examine this possibility, we ran the mediated (second stage) moderation Model 14 of Hayes (2013), 95% *CI*, 5000 bootstraps, which first tested whether leader gender predicted differences in leader power, before testing whether these power differences, depending on the interpersonal fit information leaders received, significantly predicted the different successor evaluations. The results showed that leader power significantly predicted followers' successor potential (B = 0.26, t = 2.02, p = 0.04) and that the differential power perceptions of male and female leaders were a significant driver of their successorship evaluations across all three conditions

TABLE 2 | Descriptive statistics and Pearson zero-order correlations (study 2).

Variables	*M*	*SD*	1	2	3	4	5	6
1. Leader gender	1.45	0.49	–	–.05	0.20**	–0.16**	0.03	0.10
2. Fit conditions	1.93	0.83		–	0.02	–0.04	–0.21**	–0.25**
3. female leaders	1.70	0.74			–	–0.07	–0.08	0.00
4. Leader power	5.23	0.95				–	0.13*	0.22**
5. Interpersonal fit	4.89	0.96					–	0.50**
6. Successorship	5.29	0.88						–

*Note: All correlations are at the individual level of analysis. n = 280, *p < 0.05, **p < 0.01. Two-tailed.*

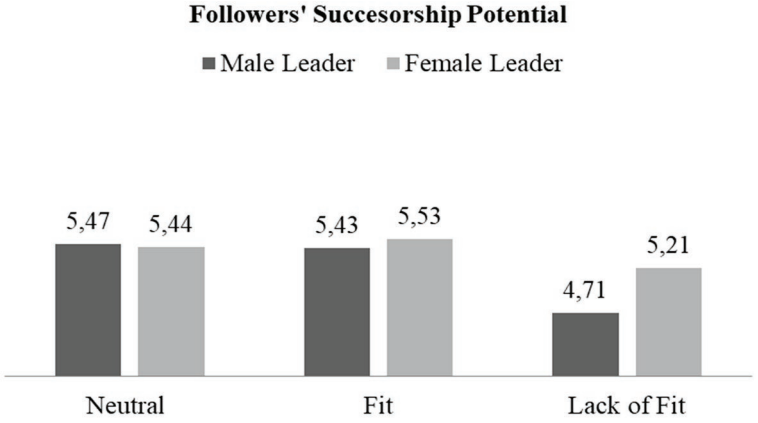

FIGURE 4 | Interactive relationship of follower fit and leader gender with leaders' assessment of followers' successorship potential (study 2).

(neutral: *CI*: −0.15 to −0.01, fit: *CI*: −0.13 to −0.01, lack of fit; *CI*: −0.13 to −0.003). This means that the gendered power differences and the fit manipulation did not jointly predict their evaluations.

Discussion

In general, the findings of this experimental study largely confirm our second hypothesis that leader gender would moderates the relationship between interpersonal fit and followers' successorship potential. We indeed found that this relationship is significantly stronger for male leaders than for female leaders. However, it was not the presence of interpersonal fit that affected male leaders' successor potential ratings. Rather, it was the *absence* of fit that caused male leaders to respond negatively to potential successors. As anticipated, however, interpersonal fit perceptions did not inform female leaders' ratings of followers' successor potential. Indeed, presumably because of the high competence level of the follower, female leaders rated the potential successor equally positively across all three conditions. Notably, the inclusion of a neutral baseline condition allowed us to discover that without further information, all leaders assume relatively high levels of interpersonal fit between themselves and their followers.

In conclusion, this study provides further evidence for our central proposition that there are gender differences in how leaders rely on interpersonal fit to determine succession potential. Interestingly, in supplementary analyses, we also found that the female leaders in our sample felt they had relatively little power in their organization compared to the male leaders, in spite of formally holding similar management positions. We will elaborate on this additional finding in section "General Discussion."

GENERAL DISCUSSION

The core research idea we aimed to prove in this contribution is that the relative importance of interpersonal fit when leaders evaluate followers for their potential as successors is likely to be gendered. Our central proposition was that male leaders would be more likely to select interpersonally similar followers as potential successors than female leaders.

SUMMARY OF RESEARCH FINDINGS

We conducted a multisource field study and a vignette study among male and female leaders to examine this proposition. In Study 1, we tested our first hypothesis that the relationship between leader gender and their ratings of followers' successor potential would hinge on follower's evaluations of positive leader behaviors that tend to signal close relations and interpersonal fit (i.e., evaluations of leaders being coaching, leading by example, and transformational, see Hypothesis 1). The results confirm that for male leaders, positive follower evaluations on the three leadership styles associated significantly with their ratings of followers' successor potential. By contrast, for female leaders, positive follower evaluations of the leadership styles were unrelated or even significantly negatively related to their ratings of followers' successor potential. Hence, Study 1 offers initial evidence that male leaders are more likely to take interpersonal fit perceptions into account when making successor judgments than female leaders. We conducted a second experimental study to examine the role of interpersonal fit in successor decisions more directly. Replicating Study 1, we again found that male leaders, compared to female leaders, attach greater importance to interpersonal fit perceptions in their successor ratings.

THEORETICAL RELEVANCE OF FINDINGS

Current theorizing on the root causes underlying gender inequality in the work place suggests that the emphasis that male leaders' place on social similarities and fit in selecting their prospective successors represents a key contributor to the underrepresentation of women in leadership positions

(Byrne, 1971; Koch et al., 2015). Empirically, however, there is ambiguity about the existence of leader gender differences in the reliance on fit perceptions in developing informal networks (McDonald, 2011). Prior observed effects are obtained primarily through archival data and could thus be explained by women's lack of opportunities in creating the social support they desire, rather than by their preferences for fit (Fischer and Oliker, 1983; Moore, 1990). Moreover, with such data, it is impossible to establish whether psychological interpersonal fit indeed explains why (male) management networks are homogeneous in nature. We therefore believe that our systematic comparison of male and female leaders' responses to interpersonal fit when informally selecting successors for future leader roles has important theoretical implications for gender research. First, the results across the two studies largely confirm our central proposition that male leaders consider interpersonal fit more relevant in their evaluations of potential successors, hereby supporting the idea that male leaders' informal network choices (perhaps unintentionally) keep the old boys' network in place. As past research has demonstrated that such networks generate great benefits for the career advancement of male followers (Garman and Glawe, 2004; Linehan and Scullion, 2008), our findings indeed imply that male leaders' preference for interpersonal fit may inadvertently create barriers to women's career progression (McDonald, 2011).

Second, our finding that female leaders, compared to their male counterparts, give less weight to fit perceptions when evaluating potential successors has important implications for the ongoing debate on women's successor and sponsorship strategies once in power. Our finding suggests that women are neither "change agents," as they seem not to prefer similar others, such as other women, nor are they simply "cogs in a machine," as they do not tend to prefer dissimilar others either (i.e., men; Lyness and Thompson, 2000; Cohen and Huffman, 2007; Stainback et al., 2016). Rather, female leaders tend to disregard issues of interpersonal fit when making succession judgments. One may argue that female leaders are fairer when it comes to succession decisions, being less swayed by interpersonal fit and instead relying simply on the competence of the potential successor. Hence, our work points out that in attempting to erode gender inequality, we need to not only alleviate selection biases that prevent women from entering leadership positions in the first place but also we need to better understand women's perceptions of followers once they are in a leadership position.

LIMITATIONS AND FUTURE RESEARCH DIRECTIONS

The current research is not without limitations. Study 1 provided evidence that the relationship between leader gender and successorship potential depended on interpersonal fit perceptions as signaled by followers' evaluations of leadership styles (i.e., coaching, leading by example, and transformational leadership). Nevertheless, it is possible that these leadership styles reflect perceptions other than interpersonal fit that could explain male leaders' successor ratings. That is, although underlying social similarities are generally assumed to guide positive leader evaluations (Kanter, 1977), we cannot give full certainty that this is the case in our data. Consequently, there may be alternative explanations for our Study 1 findings. To give one concrete example, transformational leadership is known to be a visionary leadership style that motivates followers to look beyond their current abilities and position (Bass and Avolio, 1990). The male leaders who received high scores on this style could thus also consider career advancement important and were therefore more attuned to their followers' successor potential. This alternative reasoning cannot explain, however, why positive evaluations of female leaders' on these styles were unrelated to their follower successor ratings. Nonetheless, with this in mind, we would encourage future field research to re-examine which leadership style is most likely to create perceptions of leader-follower fit, use both leader and follower ratings to objectively assess the amount of fit in these perceptions, and then test whether these fit perceptions matters for the career progression of followers.

To alleviate some of Study 1's limitations, in Study 2, we did measure interpersonal fit more directly (and independently of followers' levels of competence to fulfill a future leader position). This leadership study also had the benefit of ensuring high internal validity and addressing issues of causality. Still, two points remain open for discussion. First, our operationalization of, and findings on, interpersonal fit follows directly from Byrne's (1971) fit definition as representing positive interpersonal relationships guided by social similarities that facilitates resources exchanges. However, we did not find any (moderating) effects for leader-follower gender fit in both studies. On the one hand, this finding underlines that fit perceptions can be derived from multiple sources of demographic and social similarities (Byrne, 1971). On the other hand, it may be that in our samples, leaders were unresponsive to gender fit due to social desirability concerns (Richman et al., 1999). In this regard, if we want to fully understand the old boys' network phenomenon and the ways to overcome its existence, more research is needed on how leader-follower gender fit and interpersonal fit perceptions are exactly related to each other.

Second, the supplementary analyses we conducted in Study 2 revealed that female leaders reportedly held less power than male leaders. This result resonates with the idea that female leaders often feel socially isolated at the top and believe that they not adequately represent the behaviors typically expected from (male) leaders in their organization (Heilman, 2001; Derks et al., 2016). Importantly, these differential power perceptions of male and female leaders also had an impact on followers' successor evaluations. We therefore further tested whether female leaders considered it less relevant, or appropriate even, to evaluate the follower's successor potential based on interpersonal fit *because* of their lowered power perceptions. However, the link between leaders' perceived power and their successorship ratings did not hinge on the presence of leader-follower fit. This means that the little emphasis female leaders' place on interpersonal fit in evaluating successor potential cannot be explained by their perceptions of not being a typical organizational manager themselves. Accordingly, it remains open for further investigation what other key mechanisms

could potentially explain why female leaders are less attuned to fit perceptions than are male leaders.

One possible alternative explanation of our findings could be that female leaders may be less likely to show selection biases and rely less on interpersonal fit perceptions because they are more aware of discriminatory practices than male leaders are (Maume, 2011). This possibility underscores Ibarra's (1997) theoretical reasoning that female leaders' sponsorship strategies are different from those of male leaders because female leaders are more concerned with being competent and demonstrating their worth to the organization than are male leaders. We therefore believe that future research in this area should include indicators of the degree to which female leaders attempt to legitimizing their own position within the organization and test whether these attempts can explain why male and female leaders differ in their focus on interpersonal fit in promoting followers.

Finally, more generally, our focus on fit as a psychological mechanism underlying the old boys' network phenomenon highlights the importance of examining the unique strategies male leaders use to sponsor their follower into successor roles. In this regard, we support the recent call of scholars to not only focus on the obstacles that women and members of other underrepresented groups face as they try to succeed professionally. Future research should also include the experiences of men, as they are equally important for understanding why workplace gender discrimination is so persistent (Bruckmüller et al., 2013).

CONCLUSION AND PRACTICAL IMPLICATIONS

For companies seeking a clear road map for supporting and advancing women's position in the work place, we advise them to not only make a compelling case for gender diversity, or to ensure that formal hiring, promotions, and reviews are fair. First, given that organizational success stems from "capturing the value of the entire workforce, not just a few superstars" (O'Reilly and Pfeffer, 2000, p. 52, see also Steffens et al., 2018), less reliance on the individual sponsor activities of leaders and a greater focus on a more systematic, inclusive HR approach is recommended. With such an inclusive approach, organizations offer equal developmental and network opportunities to all employees at lower management position (Gallardo-Gallardo et al., 2013). Second, if organizations do rely on leader perceptions of successor potential, they need to ensure that upper management is held more accountable for their sponsorship activities and the resulting career advancements that they provide to specific followers (and not others).

ETHICS STATEMENT

This study was carried out in accordance with the recommendations of "Behavioral Research Lab's ethical committee of the Faculty of Economics and Business, University of Groningen, The Netherlands (Committee president: Dr. Marijke Leliveld)" with written informed consent from all subjects. All subjects gave written informed consent in accordance with the Declaration of Helsinki. The protocol was approved by the "Behavioral Research Lab's ethical committee of the Faculty of Economics and Business, University of Groningen, The Netherlands."

AUTHOR CONTRIBUTIONS

Each author has made substantial contributions to the conception or design of the work. FR, JS, MR, and NS jointly drafted the content of the paper, where FR was in the lead. AN, JS and FR collected, analyzed, and interpreted the data of Study 1. JS and FR collected, analyzed, and interpreted the data of Study 2. All authors provide approval for publication of the content and agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

FUNDING

Part of this research was made possible by funding from the Dutch Science Foundation (NWO) to FR. This work was supported in part by a grant from the Dutch Science Foundation (452-16-009) awarded to the FR and a European Commission Grant (725128) awarded to the MR.

SUPPLEMENTARY MATERIAL

The Supplementary Material for this article can be found online at: https://www.frontiersin.org/articles/10.3389/fpsyg.2019.00752/full#supplementary-material

REFERENCES

Arnold, J. A., Arad, S., Rhoades, J. A., and Drasgow, F. (2000). The empowering leadership questionnaire: the construction and validation of a new scale for measuring leader behaviors. *J. Organ. Behav.* 21, 249–269. doi: 10.1002/(SICI)1099-1379(200005)21:3<249::AID-JOB10>3.0.CO;2-#

Arvate, P. R., Galilea, G. W., Walczak, G., and Todescat, I. (2018). The queen bee: a myth? The effect of top-level female leadership on subordinate females. *Leadersh. Q.* 29, 533–548. doi: 10.1016/j.leaqua.2018.03.002

Barbuto, J. E. Jr., and Burbach, M. E. (2006). The emotional intelligence of transformational leaders: a field study of elected officials. *J. Soc. Psychol.* 146, 51–64. doi: 10.3200/SOCP.146.1.51-64

Bass, B. M., and Avolio, B. J. (1990). Developing trans-formational leadership 1992 and beyond. *J. Eur. Ind. Train.* 14, 21–27. doi: 10.1108/03090599010135122

Bass, B. M., Avolio, B. J., and Atwater, L. (1996). The transformational and transactional leadership of men and women. *Appl. Psychol. Int. Rev.* 45, 5–34. doi: 10.1111/j.1464-0597.1996.tb00847.x

Baumeister, R., and Sommer, K. L. (1997). What do men want? Gender differences and two spheres of belongingness. *Psychol. Bull.* 122, 38–44. doi: 10.1037/0033-2909.122.1.38

Becker, T. E. (2005). Potential problems in the statistical control of variables in organizational research: a qualitative analysis with recommendations. *Organ. Res. Methods* 8, 274–289. doi: 10.1177/1094428105278021

Benenson, Y. (1993). Greater preference among females than males for dyadic interaction in early childhood. *Child Dev.* 64, 544–555. doi: 10.2307/1131268

Berardi, N., and Seabright, P. (2011). Professional network and career coevolution. CEPR Discussion Paper, DP8632. Available at SSRN: https://ssrn.com/abstract=1964122

Berscheid, E., and Walster, E. H. (1969). "Rewards others provide: similarity" in *Interpersonal attraction*. eds. E. Berscheid, and E. H. Walster (Reading, MA: Addison-Wesley), 69–91.

Bickel, R. (2007). *Multilevel analysis for applied research: It's just regression!* (New York, NY: Guilford).

Bono, J. E., Hooper, A. C., and Yoon, D. J. (2012). Impact of rater personality on transformational and transactional leadership ratings. *Leadersh. Q.* 23, 132–145. doi: 10.1016/j.leaqua.2011.11.011

Bruckmüller, S., Ryan, M. K., Haslam, S. A., and Peters, K. (2013). "Ceilings, cliffs, and labyrinths: Exploring metaphors for workplace gender discrimination" in *The SAGE handbook of gender and psychology*. eds. M. K. Ryan, and N. R. Branscombe (London, UK: Sage Publications), 450–464.

Bu, N., and Roy, J. P. (2005). Career success networks in China: sex differences in social network composition and social exchange practices. *Asia Pac. J. Manag.* 22, 381–403. doi: 10.1007/s10490-005-4116-x

Burke, R. J. (2011). Women and men in management. *J. Women Aging* 23, 377–379. doi: 10.1080/08952841.2011.611074

Byrne, D. (1971). *The attraction paradigm*. (New York: Academic Press).

Carless, S. A., Wearing, A. J., and Mann, L. (2000). A short measure of transformational leadership. *J. Bus. Psychol.* 14, 389–405. doi: 10.1023/A:1022991115523

Cohen, L. E., Broschak, J. P., and Haveman, H. A. (1998). And then there were more? The effect of organizational sex composition on the hiring and promotion of managers. *Am. Sociol. Rev.* 63, 711–727. doi: 10.2307/2657335

Cohen, P. N., and Huffman, M. L. (2007). Working for the woman? Female managers and the gender wage gap. *Am. Sociol. Rev.* 72, 681–704. doi: 10.1111/j.0022-4537.2004.00379.x

Crosby, F. J., Biernat, M., and Williams, J. (2004). The maternal wall: introduction. *J. Soc. Issues* 60, 675–682. doi: 10.1111/j.0022-4537.2004.00379.x

Cuddy, A. J. C., Wolf, E. B., Glick, P., Crotty, S., Chong, J., and Norton, M. I. (2015). Men as cultural ideals: cultural values moderate gender stereotype content. *J. Pers. Soc. Psychol.* 109, 622–635. doi: 10.1037/pspi0000027

Davison, H. K., and Burke, M. J. (2000). Sex discrimination in simulated employment contexts: a meta-analytic investigation. *J. Vocat. Behav.* 56, 225–248. doi: 10.1006/jvbe.1999.1711

Derks, B., van Laar, C., and Ellemers, N. (2016). The queen bee phenomenon: why women leaders distance themselves from junior women. *Leadersh. Q.* 27, 456–469. doi: 10.1016/j.leaqua.2015.12.007

Eagly, A. H. (1987). Reporting sex differences. *Am. Psychol.* 42, 756–757. doi: 10.1037/0003-066X.42.7.755

Eagly, A. H. (2007). Female leadership advantage and disadvantage: resolving the contradictions. *Psychol. Women Q.* 31, 1–12. doi: 10.1111/j.1471-6402.2007.00326.x

Eagly, A. H., and Chaiken, S. (1998). "Attitude structure and function" in *Handbook of social psychology*. eds. D. T. Gilbert, S. T. Fiske, and G. Lindzey (New York: McGraw-Hill), 269–322.

Eagly, A. H., and Johannesen-Schmidt, M. C. (2001). The leadership styles of women and men. *J. Soc. Issues* 57, 781–797. doi: 10.1111/0022-4537.00241

Eagly, A. H., and Karau, S. J. (2002). Role congruity theory of prejudice toward female leaders. *Psychol. Rev.* 109, 573–598. doi: 10.1037/0033-295X.109.3.573

Eagly, A. H., Makhijani, M. G., and Klonsky, B. G. (1992). Gender and the evaluation of leaders: a meta-analysis. *Psychol. Bull.* 111, 3–22. doi: 10.1037/0033-2909.111.1.3

Ellemers, N., Rink, F., Derks, B., and Ryan, M. K. (2012). Women in high places: when and why promoting women into top positions can harm them individually or as a group (and how to prevent this). *Res. Organ. Behav.* 32, 163–187. doi: 10.1016/j.riob.2012.10.003

Elliott, J. R., and Smith, R. A. (2004). Race, gender, and workplace power. *Am. Sociol. Rev.* 69, 365–386. doi: 10.1177/000312240406900303

Ely, R. J. (1994). The effects of organizational demographics and social identity on relationships among professional women. *Adm. Sci. Q.* 39, 203–238. doi: 10.2307/2393234

Fischer, C. S., and Oliker, S. J. (1983). A research note on friendship, gender, and the life cycle. *Soc. Forces* 62, 124–133. doi: 10.1093/sf/62.1.124

Forret, M. L., and Dougherty, T. W. (2004). Networking behaviors and career outcomes: differences for men and women? *J. Organ. Behav.* 25, 419–437. doi: 10.1002/job.253

Friebel, G., and Seabright, P. (2011). Do women have longer conversations? Telephone evidence of gendered communication strategies. *J. Econ. Psychol.* 32, 348–356. doi: 10.1016/j.joep.2010.12.008

Gallardo-Gallardo, E., Dries, N., and González-Cruz, T. F. (2013). What is the meaning of 'talent' in the world of work? *Hum. Resour. Manag. Rev.* 23, 290–300. doi: 10.1016/j.hrmr.2013.05.002

Garman, A. N., and Glawe, J. (2004). Succession planning. *Consult. Psychol. J. Pract. Res.* 56, 119–128. doi: 10.1037/1061-4087.56.2.119

Greenberg, J., and Mollick, E. (2017). Activist choice homophily and the crowdfunding of female founders. *Adm. Sci. Q.* 62, 341–374. doi: 10.1177/0001839216678847

Hayes, A. F. (2013). *An introduction to mediation, moderation, and conditional process analysis: A regression-based approach*. (New York: Guilford Press).

Heilman, M. E. (2001). Description and prescription: how gender stereotypes prevent women's ascent up the organizational ladder. *J. Soc. Issues* 57, 657–674. doi: 10.1111/0022-4537.00234

Heilman, M. E. (2012). Gender stereotypes and workplace bias. *Res. Organ. Behav.* 32, 113–135. doi: 10.1016/j.riob.2012.11.003

Hogan, R., Perrucci, C. C., and Behringer, A. (2005). Enduring inequality: gender and employment income in late career. *Sociol. Spectr.* 25, 53–77. doi: 10.1080/027321790500112

Hox, J. J. (2010). *Multilevel analysis: Techniques and applications*. (New York, US: Routlegde).

Ibarra, H. (1992). Homophily and differential returns: sex differences in network structure and access in an advertising firm. *Adm. Sci. Q.* 37, 422–447. doi: 10.2307/2393451

Ibarra, H. (1993). Personal networks of women and minorities in management: a conceptual framework. *Acad. Manag. Rev.* 18, 56–87. doi: 10.5465/amr.1993.3997507

Ibarra, H. (1997). Paving an alternative route: gender differences in managerial networks. *Soc. Psychol. Q.* 60, 91–102. doi: 10.2307/2787014

Ibarra, H., Kilduff, M., and Tsai, W. (2005). Zooming in and out: connecting individuals and collectivities at the frontiers of organizational network research. *Organ. Sci.* 16, 327–451. doi: 10.1287/orsc.1050.0129

Judge, T. A., and Piccolo, R. (2004). Transformational and transactional leadership: a meta-analytic test of their relative validity. *J. Appl. Psychol.* 89, 755–768. doi: 10.1037/0021-9010.89.5.755

Kaiser, C. R., and Spalding, K. E. (2015). Do women who succeed in male-dominated domains help other women? The moderating role of gender identification. *Eur. J. Soc. Psychol.* 45, 599–608. doi: 10.1002/ejsp.2113

Kanter, R. M. (1977). *Men and women of the corporation*. (New York: Basic Books).

Keller, A. C., Meier, L. L., Gross, S., and Semmer, N. K. (2013). Gender differences in the association of a high quality job and self-esteem over time: a multiwave study. *Eur. J. Work Organ. Psy.* 24, 113–125. doi: 10.1080/1359432X.2013.865118

Kleinbaum, A., Stuart, T. E., and Tushman, M. L. (2013). Discretion within constraint: homophily and structure in a formal organization. *Organ. Sci.* 24, 1316–1336. doi: 10.1287/orsc.1120.0804

Koch, A. J., D'Mello, S. D., and Sackett, P. R. (2015). A meta-analysis of gender stereotypes and bias in experimental simulations of employment decision making. *J. Appl. Psychol.* 100, 128–161. doi: 10.1037/a0036734

Koenig, A. M., Eagly, A. H., Mitchell, A. A., and Ristikari, T. (2011). Are leader stereotypes masculine? A meta-analysis of three research paradigms. *Psychol. Bull.* 137, 616–642. doi: 10.1037/a0023557

Konrad, A. M., Kramer, V., and Erkut, S. (2008). The impact of three or more women on corporate boards. *Organ. Dyn.* 37, 145–164. doi: 10.1016/j.orgdyn.2008.02.005

Kramarz, F., and Thesmar, D. (2013). Social networks in the boardroom. *Eur. J. Econ. Assoc.* 11, 780–807. doi: 10.1111/jeea.12021

Linehan, M., and Scullion, H. (2008). The development of female global managers: the role of mentoring and networking. *J. Bus. Ethics* 83, 29–40. doi: 10.1007/s10551-007-9657-0

Lockwood, P., and Kunda, Z. (1997). Superstars and me: predicting the impact of role models on the self. *J. Pers. Soc. Psychol.* 73, 91–103. doi: 10.1037/0022-3514.73.1.91

Lyness, K. S., and Thompson, D. E. (2000). Climbing the corporate ladder: do female and male executives follow the same route? *J. Appl. Psychol.* 85, 86–101. doi: 10.1037/0021-9010.85.1.86

Maner, J. K., and Mead, N. L. (2010). The essential tension between leadership and power: when leaders sacrifice group goals for the sake of self-interest. *J. Pers. Soc. Psychol.* 99, 482–497. doi: 10.1037/a0018559

Maume, D. J. (2011). Meet the new boss … same as the old boss? Female supervisors and subordinate career prospects. *Soc. Sci. Res.* 40, 287–298. doi: 10.1016/j.ssresearch.2010.05.001

McCarthy, J. M., Van Iddekinge, C. H., and Campion, M. A. (2010). Are highly structured job interviews resistant to demographic similarity effects? *Pers. Psychol.* 63, 325–359. doi: 10.1111/j.1744-6570.2010.01172.x

McDonald, S. (2011). What's in the "old boys" network? Accessing social capital in gendered and racialized networks. *Soc. Networks* 33, 317–330. doi: 10.1016/j.socnet.2011.10.002

McKinsey & Company. Women in the workplace, report 2017. Retrieved from: https://womenintheworkplace.com/

McPherson, M., Smith-Lovin, L., and Cook, J. M. (2001). Birds of a feather: homophily in social networks. *Annu. Rev. Sociol.* 27, 415–444. doi: 10.1146/annurev.soc.27.1.415

Metz, I., and Tharenou, P. (2001). Women's career advancement: the relative contribution of human and social capital. *Group Org. Manag.* 26, 312–342. doi: 10.1177/1059601101263005

Moore, G. (1990). Structural determinants of men's and women's personal networks. *Am. Sociol. Rev.* 55, 726–735. doi: 10.2307/2095868

Ng, T. W., Eby, L. T., Sorensen, K. L., and Feldman, D. C. (2005). Predictors of objective and subjective career success: a meta-analysis. *Pers. Psychol.* 58, 367–408. doi: 10.1111/j.1744-6570.2005.00515.x

O'Reilly, C., and Pfeffer, J. (2000). Unlocking the hidden value in organizations. *Employment Relat.* 27, 63–80. doi: 10.1002/ert.3910270208

Oakley, J. G. (2000). Gender-based barriers to senior management positions: understanding the scarcity of female CEOs. *J. Bus. Ethics* 27, 321–334. doi: 10.1023/A:1006226129868

Peters, K., Ryan, M. K., and Haslam, S. A. (2013). "Women's occupational motivation: the impact of being a woman in a man's world" in *Handbook of research on promoting women's careers*. eds. S. Vinnicombe, R. J. Burke, S. Blake-Beard, and L. L. Moore (Cheltenham, Glos, United Kingdom: Edward Elgar), 162–177.

Peters, K., Ryan, M. K., and Haslam, S. A. (2015). Marines, medics, and machismo: lack of fit with masculine occupational stereotypes discourages men's participation. *Br. J. Psychol.* 106, 635–655. doi: 10.1111/bjop.12106

Podsakoff, P. M., MacKenzie, S. B., Lee, J.-Y. L., and Podsakoff, N. P. (2003). Common method biases in behavioral research: a critical review of the literature and recommended remedies. *J. Appl. Psychol.* 88, 879–903. doi: 10.1037/0021-9010.88.5.879

Powell, G. N., Butterfield, D. A., and Parent, J. D. (2002). Gender and managerial stereotypes: have the times changed? *J. Manag.* 28, 177–193. doi: 10.1177%2F014920630202800203

Renneboog, L., and Zhao, Y. (2011). Us knows us in the UK: on director networks and CEO compensation. *J. Corp. Finan.* 17, 1132–1157. doi: 10.1016/j.jcorpfin.2011.04.011

Richman, W. L., Kiesler, S., Weisband, S., and Drasgow, F. (1999). A meta-analytic study of social desirability distortion in computer administered questionnaires, traditional questionnaires, and interviews. *J. Appl. Psychol.* 84, 754–775. doi: 10.1037/0021-9010.84.5.754

Riggio, R. E., Chaleff, I., and Lipman-Blumen, J. (eds) (2008). *The Warren Bennis signature series. The art of followership: How great followers create great leaders and organizations*. (San Francisco, CA, US: Jossey-Bass).

Ryan, M. K., and Haslam, S. A. (2005). The glass cliff: evidence that women are over-represented in precarious leadership positions. *Br. J. Manag.* 16, 81–90. doi: 10.1111/j.1467-8551.2005.00433.x

Saloner, G. (1985). Old boy networks as screening mechanisms. *J. Labor Econ.* 3, 255–267. doi: 10.1086/298055

Schein, V. E. (1975). The relationship between sex role stereotypes and requisite management characteristics among female managers. *J. Appl. Psychol.* 60, 340–344. doi: 10.1037/h0076637

Schein, V. E., and Davidson, M. J. (1993). Think manager, think male. *Manag. Dev. Rev.* 6, 24–28. doi: 10.1108/EUM0000000000738

Sczesny, S. (2003). A closer look beneath the surface: various facets of the think-manager–think-male stereotype. *Sex Roles* 49, 353–363. doi: 10.1023/A:1025112204526

Siemsen, E., Roth, A., and Oliveira, P. (2010). Common method bias in regression models with linear, quadratic, and intraction effects. *Organ. Res. Methods* 13, 456–476. doi: 10.1177/1094428109351241

Simon, C. J., and Warner, J. T. (1992). Matchmaker, matchmaker: the effect of old boy networks on job match quality, earnings, and tenure. *J. Labor Econ.* 10, 306–330. doi: 10.1086/298289

Spurk, D., Meinecke, A. L., Kauffeld, S., and Volmer, J. (2015). Gender, professional networks, and subjective career success within early academic science careers: the role of gender composition in inside and outside departmental support networks. *J. Pers. Psychol.* 14, 121–130. doi: 10.1027/1866-5888/a000131

Stainback, K., Kleinder, S., and Skaggs, S. (2016). Women in power. Undoing or redoing the gendered organization? *Gend. Soc.* 30, 109–135. doi: 10.1177/0891243215602906

Stainback, K., and Kwon, S. (2012). Female leaders, organizational power, and sex segregation. *Ann. Am. Acad. Political Soc. Sci.* 639, 217–235. doi: 10.1177/0002716211421868

Steffens, N. K., Fonseca, M. A., Ryan, M. K., Rink, F. A., Stoker, J. I., and Nederveen-Pieterse, A. (2018). How feedback about leadership potential impacts ambition, organizational commitment, and performance. *Leadersh. Q.* 27, 446–455. doi: 10.1016/j.leaqua.2018.06.001

Tsui, A. S., and O'Reilly, C. A. III. (1989). Beyond simple demographic effects: the importance of relational demography in superior-subordinate dyads. *Acad. Manag. J.* 32, 402–423.

Van Quaquebeke, N., van Knippenberg, D., and Eckloff, T. (2011). Individual differences in the leader categorization to openness to influence relationship: the role of followers' self-perception and social comparison orientation. *Group Process. Intergroup Relat.* 14, 605–622. doi: 10.1177/1368430210391311

Vincent-Lancrin, S. (2008). "The reversal of gender inequalities in higher education: an ongoing trend" in *Higher education to 2030: Demography* (Paris: OECD), 265–298.

Virick, M., and Greer, C. R. (2012). Gender diversity in leadership succession: preparing for the future. *Hum. Resour. Manag.* 51, 575–600. doi: 10.1002/hrm.21487

Wang, D., Waldman, D. A., and Zhang, Z. (2018). A meta-analysis of shared leadership and team effectiveness. *Acad. Manag. Proc.* 2013. Published Online. doi: 10.5465/ambpp.2013.11215abstract

Wood, W. (2000). Attitude change: persuasion and social influence. *Annu. Rev. Psychol.* 51, 539–570. doi: 10.1146/annurev.psych.51.1.539

Conflict of Interest Statement: The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

frontiers in Psychology

ORIGINAL RESEARCH
published: 04 June 2019
doi: 10.3389/fpsyg.2019.01297

A Leak in the Academic Pipeline: Identity and Health Among Postdoctoral Women

Renate Ysseldyk[1], Katharine H. Greenaway[2], Elena Hassinger[3,4], Sarah Zutrauen[1], Jana Lintz[3], Maya P. Bhatia[5], Margaret Frye[6], Else Starkenburg[7] and Vera Tai[8]*

[1] Department of Health Sciences, Carleton University, Ottawa, ON, Canada, [2] Melbourne School of Psychological Sciences, University of Melbourne, Melbourne, VIC, Australia, [3] Max Planck Institute for Chemical Physics of Solids, Dresden, Germany, [4] Department of Physics, Technical University Munich, Munich, Germany, [5] Department of Earth and Atmospheric Sciences, University of Alberta, Edmonton, AB, Canada, [6] Department of Sociology, University of Michigan, Ann Arbor, MI, United States, [7] Leibniz-Institut für Astrophysik Potsdam, Potsdam, Germany, [8] Department of Biology, University of Western Ontario, London, ON, Canada

Several challenges (e.g., sexism, parental leave, the glass ceiling, etc.) disproportionately affect women in academia (and beyond), and thus perpetuate the leaky pipeline metaphor for women who opt-out of an academic career. Although this pattern can be seen at all levels of the academic hierarchy, a critical time for women facing such challenges is during the postdoctoral stage, when personal life transitions and professional ambitions collide. Using a social identity approach, we explore factors affecting the mental health of postdoctoral women, including identity development (e.g., as a mother, a scientist) and lack of control (uncertainty about one's future personal and professional prospects), which likely contribute to the leak from academia. In this mixed-method research, Study 1 comprised interviews with postdoctoral women in North America (n = 13) and Europe (n = 8) across a range disciplines (e.g., psychology, physics, political science). Common themes included the negative impact of career uncertainty, gender-based challenges (especially sexism and maternity leave), and work-life balance on mental and physical health. However, interviewees also described attempts to overcome gender inequality and institutional barriers by drawing on support networks. Study 2 comprised an online survey of postdoctoral women (N = 146) from a range of countries and academic disciplines to assess the relationships between social identification (e.g., disciplinary, gender, social group), perceived control (i.e., over work and life), and mental health (i.e., depression, anxiety, stress, and life satisfaction). Postdoctoral women showed mild levels of stress and depression, and were only slightly satisfied with life. They also showed only moderate levels of perceived control over one's life and work. However, hierarchical regression analyses revealed that strongly identifying with one's discipline was most consistently positively associated with both perceived control and mental health. Collectively, these findings implicate the postdoctoral stage as being stressful and tenuous for women regardless of academic background or nationality. They also highlight the importance of disciplinary identity as a potentially protective factor for mental health that, in turn, may diminish the rate at which postdoctoral women leak from the academic pipeline.

Keywords: academia, women, postdoctoral, social identity, mental health

OPEN ACCESS

Edited by:
Michelle K. Ryan,
University of Exeter, United Kingdom

Reviewed by:
Jenny Veldman,
KU Leuven, Belgium
Emina Subasic,
University of Newcastle, Australia

****Correspondence:***
Renate Ysseldyk
renate.ysseldyk@carleton.ca

Specialty section:
This article was submitted to Organizational Psychology, a section of the journal Frontiers in Psychology

Received: *12 September 2018*
Accepted: *17 May 2019*
Published: *04 June 2019*

Citation:
Ysseldyk R, Greenaway KH, Hassinger E, Zutrauen S, Lintz J, Bhatia MP, Frye M, Starkenburg E and Tai V (2019) A Leak in the Academic Pipeline: Identity and Health Among Postdoctoral Women. Front. Psychol. 10:1297. doi: 10.3389/fpsyg.2019.01297

INTRODUCTION

Imposter syndrome. Sexism. Maternity leave. The glass ceiling. The glass cliff. These are just a few of the challenges that disproportionately affect women in academia and perpetuate the leaky pipeline metaphor (Goulden et al., 2011; Resmini, 2016) for women who opt-out of an academic career. Although this pattern can be seen at all levels of the academic hierarchy, the postdoctoral stage seems to be a critical time for women facing such challenges, when personal life changes and professional ambitions often collide. Indeed, this appears to be a time when women are particularly at risk of exiting the academy (Martinez et al., 2007).

In addition to career interruption or relinquishment, the toll taken by this career phase is undoubtedly psychological. Many of the issues facing postdoctoral women involve identity development (e.g., as a mother, a scientist, etc.; Goulden et al., 2011) along with a sense of uncertainty about control over one's future personal and/or professional prospects (Larson et al., 2014). These challenges, coupled with institutions that lack equitable structures and policies for women (e.g., Lundine et al., 2018), create a climate ripe for career abandonment.

In this mixed-method research, we explore mental health among postdoctoral women, aiming to understand their experiences qualitatively (Study 1) and quantitatively (Study 2). At the heart of this experience, we argue, is a sense of identity. We explore how various social identities—that is, the value and importance of those group memberships to the self-concept (Tajfel and Turner, 1979)—may exacerbate mental health issues among postdoctoral women when they are experienced as not fitting with the academic environment (Iyer et al., 2009). Conversely, we also examine whether identity may protect mental health in ways predicted by the social identity approach to health (Jetten et al., 2012; Haslam et al., 2018).

Barriers to Workplace Gender Equality

Women in academia face many barriers to workplace equality, which can result in "leaking" from the academic pipeline. The leaky pipeline is a metaphor often used to describe the loss of women in STEM (i.e., science, technology, engineering, and math)—and arguably other fields before reaching senior roles (Goulden et al., 2011; Resmini, 2016; Howes et al., 2018). Although research has yet to determine which barriers contribute most to the leaky pipeline, there are several likely candidates. For example, the well-known metaphor of the glass ceiling—defined as a barrier that results from gender or race and prevents one from moving past a certain point in their career (e.g., promotion or hiring) (Cotter et al., 2001; Bruckmüller et al., 2014)—undoubtedly also affects women in the academy. Further to the glass ceiling, the glass cliff phenomenon (Ryan and Haslam, 2005) may also set women up in precarious leadership roles where they are more likely to fail, and there is reason to believe that this occurs in academia as well, where leadership positions abound (e.g., in teaching, research, and senior administration).

In light of coming up against the glass ceiling or perching precariously on the edge of the academic glass cliff, it should not be surprising that many women in academia suffer from imposter syndrome—the feeling that one is not worthy or competent despite evidence to the contrary. This "syndrome" is more common in women than men and is also associated with attributions that women place on their successes (Clance and Imes, 1978; Howe-Walsh and Turnbull, 2016). Women often attribute their success to temporary causes such as luck, while men more often attribute their success to stable qualities within themselves (Clance and Imes, 1978). Unfortunately, imposter syndrome can start early in a woman's educational trajectory and may also explain, at least in part, women's underrepresentation in STEM (and other) disciplines, as well as take a significant psychological toll.

Beyond subjective experiences, there is objective evidence that women are not valued to the same extent as their male counterparts—sexism, gender pay inequity, and fewer chances for promotion also continue to be barriers to workplace equality that women in academia (and beyond) regularly face (Cohen and Huffman, 2007; Savigny, 2014; Lee, 2015; Kohout and Singh, 2018). Women also have less chance of being hired in the first place compared to their male counterparts (Savigny, 2014). For example, when presented with two identical Curriculum Vitaes (CVs) with gender-identifying information included, 127 professors from various fields (physics, chemistry, and biology) considered those belonging to men to be better; however, when the CVs were gender-blind, women were evaluated as better (Moss-Racusin et al., 2012). Indeed, despite the idea that academics or intellectuals are more aware of social injustices and act as critics and the conscience of society (Martin, 1984; Rodden, 2014; Harre et al., 2017), gender inequality occurs in academia, as elsewhere.

Although leaks in the pipeline can be attributed to gender bias and discrimination, another major factor driving the loss of postdoctoral women from academia seems to be whether, and when, they have children (Resmini, 2016; Ledford, 2017). It has been reported that married women with young children are 35% less likely to get a tenure-track position than married men with young children, and are still 33% less likely to achieve this position than are single women without young children (Goulden et al., 2011).

The above-mentioned challenges can be seen at all levels of the academic hierarchy, but a critical time for women facing such barriers is during the postdoctoral stage, when personal life changes and professional ambitions often collide (Martinez et al., 2007). Not surprisingly, such challenges and inequalities—sometimes compounded over time—can take a toll on women's mental health and perceived control over their career and life trajectories (Kinman, 2001). While these mental health challenges (and gender disparities) are recognized at the graduate student level (Evans et al., 2018), support for postdoctoral fellows often falls through the cracks (Newsome, 2008). It is at this time—the pre-tenure track, postdoctoral stage when women are on the academic job market—that the pipeline appears

to be at its leakiest (Martinez et al., 2007; Newsome, 2008; Goulden et al., 2011).

Challenges for Postdoctoral Women in Academia

One's time as a postdoctoral fellow—often termed a "postdoc"—can be both challenging and rewarding. However, there are many factors that affect the path of a postdoc's career, including the balance between these challenges and rewards. On the rewarding side, the hours are often flexible and one can typically pursue a research agenda without the added responsibilities of teaching and administration. On the challenging side, however, those flexible hours are often long, and the promise of a tenure-track or permanent position is uncertain (Larson et al., 2014). Additionally, and regrettably, many postdoctoral women work in environments where they are not respected or supported as women or as academics, particularly in male-dominated fields (Case and Richley, 2013). Many postdoctoral women report experiencing accumulated disadvantages as well as subtle, biased sexism, both of which can combine to create a workplace where women do not feel equal (Steinke, 2013) and don't perform to their best capabilities (Schmader, 2002). Unfortunately, those perceptions of inequality are often grounded in reality for postdoctoral women. For example, there appears to be a persistent discrepancy in women and men's publication rates in high profile journals (Lundine et al., 2018)—a marker which, of course, is used among academic employers to measure both the quantity and quality of a potential candidate.

As alluded to earlier, another reason why a woman may have fewer publications than her male counterparts is maternity leave (Goulden et al., 2011; Resmini, 2016). In this regard, timing is critical, given the life-stage that coincides with building the all-important publication record as a prerequisite for securing academic employment. It should not be surprising then that men are considerably more likely to be hired into permanent academic positions compared to women who take maternity leave within 5 years of completing their doctorates (Mason and Goulden, 2004; Resmini, 2016). This overlapping timeline can create an especially steep challenge for women in postdoctoral positions, who have not yet secured permanent employment (Ledford, 2017).

Maternity leave may also have a signaling cost for a postdoctoral woman, suggesting to potential employers that she is not committed to her work (Goulden et al., 2011). Moreover, in many cases the funding supporting postdocs does not allow for paid parental absence, or postdocs are explicitly discouraged from taking leave at all (Ledford, 2017). Maternity leave may also change a woman's own perceptions and ambitions in career choice: 44% of women reported that issues related to children were key influences in their decision not to pursue a professorship with a research focus (Goulden et al., 2011). Indeed, historically, societal gender norms have dictated that women will give up their careers to have children and devote their time to caring for them. While this is still a laudable path for some women today, those who wish to have children while pursuing an academic career often face a "baby penalty," which can manifest itself in several ways (e.g., lower quantity of academic outputs, less prestigious or fewer tenure-track job offers, etc.; Mason and Goulden, 2004).

Finally, whether involving children or not, the postdoctoral phase is also a transitional time marked by uncertainty. Uncertainty about one's future career is often stressful. This uncertainty can be accompanied by a lack of perceived control, which can negatively impact performance (Perry et al., 2005). Moreover, lack of control can negatively impact mental health, by increasing stress and anxiety (Michie, 2002). The lack of perceived control in relation to one's career prospects, combined with uncertain perceptions about one's future life in general (e.g., moving cities, starting a family), may encourage postdoctoral women to opt-out of an academic career before it even begins, thereby perpetuating the leaky pipeline metaphor.

Indeed, the barriers and challenges noted here, coupled with institutions that lack equitable structures and policies for women, create a climate ripe for career abandonment during the postdoctoral stage. Beyond practical implications for career progression, however, these challenges also take a significant psychological toll on women at a vulnerable point in their career. We investigate this psychological impact in the present research, focusing on exploring the mental health of postdoctoral women. In doing so, we adopt a theoretical perspective that highlights the importance of identity in guiding and shaping mental health. Not only is a strong sense of connection and identity important to mental health (Jetten et al., 2012), identity is at the heart of many challenges experienced during the postdoctoral stage, when tenuous career conditions may throw women's social group identities—for example, as a scientist, as an academic, or as a wife or mother—into question.

A Social Identity Approach to Mitigating the Challenges of Postdoctoral Women

As postdoctoral fellows—a time rife with important life and career transitions—women must often balance multiple social identities. In the context of life transitions, these identities can be both a blessing and a curse. On the one hand, perceived incompatibility between different identities (for example, as mother and employee) can undermine well-being (Iyer et al., 2009). On the other hand, an emerging line of research drawn from the social identity approach (Tajfel and Turner, 1979; Turner et al., 1987) reveals that meaningful social identities can protect mental and physical health. This line of basic research, colloquially termed 'the social cure' (Jetten et al., 2012; Haslam et al., 2018), is the foundation of an emerging applied agenda that aims to put this theory into practice to improve mental health outcomes in a variety of populations, including clinical and organizational settings (Haslam et al., 2003, 2016).

Numerous studies have found that group identity can mitigate stressors in an individual's life, including academic stressors among minority group members (Oyserman et al., 2006), high-impact situational stressors (Haslam and Reicher, 2006), and stressful life transitions (Praharso et al., 2017; Seymour-Smith et al., 2017) such as marriage or becoming a parent. This protective effect is thought to be due to a number of factors, including a robust support network provided by other

group members, but also from a sense of collective- and self-esteem drawn from belonging to the group in question (Jetten et al., 2012). Indeed, identifying with a group has also been shown to protect the self-esteem of women exposed to blatant sexism (Spencer-Rodgers et al., 2016), something that women in academia are known to face. This protective effect may even impact individuals at the neurochemical level, in turn, better protecting mental health (Häusser et al., 2012). Likewise, identification with groups can help people feel more in control of their lives, which has been shown to be associated with more positive mental health outcomes (Greenaway et al., 2015). The postdoctoral stage is a time in which individuals might feel that their career prospects—and even their personal life—are out of their control. Identifying with important or supportive groups might help to mitigate such stress and uncertainty, in part due to the social support and sense of community derived therein (Jetten et al., 2012).

What differs in the postdoctoral stage, however, is the uncertainty of those identities themselves (e.g., "Will I ever get a tenure-track job?", "Will I be able to publish papers while on maternity leave?"). Moreover, some of the identities in question may seem to be incompatible or have conflicting goals (Iyer and Ryan, 2009; Cruwys et al., 2016; Matschke and Fehr, 2017), forcing women into a juggling act where the demands on their time and their resources are not realistic. Such conflicts are sometimes termed identity interference (Settles, 2004). In this regard, female academics may feel that one identity (e.g., scientist, academic) cannot be expressed at the same time as another (e.g., woman, mother; Settles, 2004; Steinke, 2013). Although such identity complexity (Roccas and Brewer, 2002) is not uncommon, it may be especially problematic for women who are simultaneously attempting to establish themselves in an academic career and embarking upon important personal life transitions. In the midst of this conceivable identity incompatibility, women may be less inclined to identify with some group memberships (Matschke and Fehr, 2017) to reduce identity interference, with potential consequences for mental health (Cruwys et al., 2016; Sønderlund et al., 2017).

THE PRESENT RESEARCH

The leaky pipeline persists. Women are leaving the academic track at rates greater than men, and this is happening for a variety reasons. In the current research our purpose is not to determine whether women face greater challenges than men in academia—this has already been established. Instead, our goal is to explore nuances regarding the mental health experiences of women during the postdoctoral period—a demanding career stage in which women attempt to secure higher positions in academia. We assess these experiences qualitatively (to capture health experiences in women's own words) and quantitatively (to examine those health experiences against norms). Moreover, we assess factors that might act as a psychological safeguard against the poor mental health that can stem from the stressors and challenges inherent to this phase of life and career. Specifically, we assess whether group identity (e.g., identifying with other members of one's discipline or gender) is positively associated with perceptions of control (over work and life) and mental health (e.g., depression, anxiety, stress, life satisfaction).

To examine these research questions, we took a mixed-method approach that combines the empirical rigor of quantitative analysis with the rich contextual insights gleaned from qualitative analysis. Study 1 comprised interviews with postdoctoral women in North America and Europe across a range of disciplines to explore their lived experiences from their perspectives. Study 2 comprised an online study of early career researchers from a range of academic disciplines (e.g., psychology, physics, political science, etc.) and across several countries (e.g., Germany, Australia, United States, etc.) to assess social identification with important groups (i.e., discipline, gender, social), perceived control (i.e., work and life), and mental health (i.e., depression, anxiety, stress, life satisfaction). At the heart of both of these studies is an interest in identity and mental health among postdoctoral women, and how these factors interrelate. In this research we therefore extend and bridge previous work by examining relations among gender inequality, important social identities, and mental health outcomes during a potentially fragile career stage for women from various academic backgrounds and nationalities.

STUDY 1

Our aim in Study 1 was to qualitatively explore the challenges faced by postdoctoral women. We interviewed women from a variety of disciplinary backgrounds in both Canada and Germany, to capture their perspectives as well as to gauge differences and similarities across their experiences. Of particular interest were women's career goals and intentions, gender issues in the academy, women's experiences of health and well-being (or lack thereof), and potential strategies to alleviate challenges they had encountered.

Method

Participants and Procedure

We conducted semi-structured interviews on two university campuses—in Canada and in Germany, across a variety of disciplines. The Canadian sample consisted of 13 participants ranging from 30 to 44 years of age; 5 of these participants had children, most of whom took less than 1 year of maternity leave (despite the norm in Canada being one full year). These Canadian women had been in postdoctoral positions ranging from 1 to 2.5 years. The European sample consisted of 8 participants, ranging from 29 to 46 years of age; only 1 of these participants had children, and took a 3-month maternity leave (whereas the norm in Germany is also 1 year). Although most of these women had been in a postdoctoral position for approximately 2 years, some had completed multiple postdocs spanning up to 13 years[1].

[1]Although all interviews were conducted in Canada and Germany, these postdoctoral women were citizens of a variety of countries. Nonetheless, for ease of presentation and to protect anonymity, participants are referred to as "Canadian postdoc" or "German postdoc" throughout this article.

We recruited participants through personal emails, institutional postdoctoral contact lists, and recruitment notice postings. The inclusion criteria included being a woman and currently holding a postdoctoral position. After collecting informed consent, we interviewed participants using a semi-structured format that included questions developed from the study's aims. We used an interview method to allow for a richer understanding of women's experiences in academia while protecting the anonymity of their responses. We conducted the interviews in Canada between June and August 2017 and each interview lasted between 22.51 and 50.14 min. We conducted the interviews in Germany between August and September 2017, and they lasted between 27.01 and 92.23 min. We conducted all interviews in English, audio-recorded them using Audacity software, and manually transcribed them. Our theory-driven thematic analyses (Boyatzis, 1998; Fereday and Muir-Cochrane, 2006) were facilitated by using NVivo software. We offered each participant a coffee shop gift card as compensation. Names and disciplines have been redacted to avoid identifying participants (as in some cases, the participant was the only female postdoctoral fellow in their department).

Results

Data Analyses

Three independent members of the research team read and coded the interview transcripts. Following this process, we created new themes and we removed or merged redundant themes. We analyzed interviews both as a function of country (Canada vs. Germany) and then together[2]. The result was a finalized list of four main themes, which often intersected with one another, namely (1) career flexibility vs. uncertainty, (2) gender-based challenges, (3) work-life balance and health, and (4) social support and identity (or lack thereof). We consider each of these in turn.

Career Flexibility vs. Uncertainty

Flexibility and independence

When we asked about their general experiences and what they liked about their current position, postdoctoral women in our sample often noted flexibility, both in terms of their working hours in order to "juggle responsibilities" and in terms of developing new research ideas. As one Canadian postdoc reported: "*What I really like is that I have the flexibility of hours. . .. . I feel that having that autonomy allows me to drive my research forward so I come up with new publication ideas.*" This flexibility was often complimented by a newfound feeling of independence, as another Canadian postdoc noted: "*Once you graduate from the Ph.D. you are no longer a student. . . you are considered more as a colleague. And I definitely saw that, it was a really welcoming change.*"

However, in line with our theorizing that postdoctoral fellowships can be "the best of times and the worst of times," several women also explicitly commented on this dichotomy. For example, as one Canadian postdoc reported: "*The flexibility, it's both a blessing and a curse really, every day you kind of plan for yourself, and it's a blank slate. But admittedly a lot of times I wake up and I'm not sure what I'm going to achieve that day and I don't achieve anything.*" Likewise, a similar contrast was noted regarding the independence of the postdoctoral life—although this independence was appreciated in terms of juggling other plans and commitments, there was a downside when considering how postdocs "fit in" to the larger research group from both social and project perspectives. As noted by another Canadian postdoc: "*I have a lot of independence, and that's really great. I don't have to call in sick if my little girl is sick, I don't have to ask to go on vacation. I just do it. No one is questioning me on those things. But on the flipside. . . being a postdoctoral researcher can be almost too independent at times. Because you may be the only one working on that topic. Depending on the group dynamics, you may be part of the group but you're not actually integral to anyone else's research. And so, you may actually just kind of float, which can be good and bad depending on how you look at it. But I think that's a real risk for most postdocs. . .*"

Uncertainty

Also in line with the postdoctoral experience as "the worst of times," one of the most prominent themes that emerged from analysis of the interview data was the career uncertainty that postdoctoral women felt. When asked about their career aspirations, even women who indicated that they expected to meet their career goals were still cognizant of the lack of permanent (including tenure-track) positions available within academia. As one Canadian participant noted: "*Well, there are no jobs. You have to move really far to get a job in academia as it is right now. And I'm getting a bit tired of that because I've already traveled a lot. So I'm reassessing right now, to be honest, because it's not clear if there will really be a job in academia in the future. I don't know if that's really a realistic aspiration to hold on to.*"

Moreover, many of the women expressed the need to keep their "*options open and not get tunnel vision,*" had already abandoned the idea of pursing a tenure-track professorship because "*there are so few jobs that the reality is most of us are not going to move on in academia,*" had decided to pursue a career in research industry or government, or felt that they were at the midpoint of making that decision. As one German postdoc reported: "*So, when I moved here, at the beginning I really wanted to stay in science. . .. But now I should be realistic, maybe I don't have a chance to become a professor especially in Germany – because I want to stay in Germany. And. . . I'm also thinking about industry. Almost ninety percent I've made my decision, and. . . the problem is, I don't know about the opportunities in industry.*"

This uncertainty about the future was, in some cases, exacerbated by the uncertainty of women's present positions, especially in terms of occupying multiple postdocs. This seemed to be a prominent issue for our German interview respondents who had, on average, been in postdoctoral positions for a greater number of years than the Canadian postdocs interviewed. As one German postdoc said: "*So, I have always worked at [this institution]. Since September [year] in something called this "wissenschaftliche Mitarbeiter" [research assistant] position.*

[2]The themes that emerged from the samples in Canada and Germany overlapped to the extent that composite results for both samples are presented here, with any nuances noted.

But my funding has constantly changed... So, my projects have changed regularly but my position is still always the same. I am a temporary – I mean, not temporary, I mean to say, I don't have a "feste Stelle" [permanent position].

Gender-Based Challenges

Sexism (and being out-numbered)

In addition to general feelings of uncertainty, some postdoctoral women also reported uncertainty in their own abilities (including "imposter syndrome"), or uncertainty regarding whether some of the attention they received was due to their ability as a scientist or due to their gender, especially in male-dominated disciplines. For example, as a German postdoc reported: "*In certain conferences. . . it's not clear whether when you talk to a new person, whether they are flirting with you or they're not. . . because there are very few women, sometimes it's kind of hard to tell the difference between whether they talk to me because they take me seriously as a scientist or because they talk to me because I'm one of the few women in the meeting.*"

Indeed, especially among postdocs in natural science disciplines, many noted that they were often the only woman in the room—an observation that was sometimes missed by their male colleagues, as noted by a Canadian postdoc: "*I've been in numerous field camps where I'm the only woman, I've been in numerous labs where I'm the only woman, I've been in numerous meetings where I'm the only woman. . . in our particular group there is definitely a male bias. What I find fascinating is that it's often not recognized by our male colleagues. And I've actually been in a room where a male colleague has turned to me and said 'Do you really think that female directed scholarships are necessary?' And I kind of looked at him like 'Are you effing kidding me? And I looked around. . . and I was the only female in the room.*" In some cases, this lack of recognition of gender disparity by male colleagues specifically highlighted the leaky pipeline at the postdoctoral stage, as noted by another Canadian postdoc: *"I've had male counterparts. . . [say] 'Well how is there a gender bias? I can't even find any male students, all my grad students are female.' It's like 'Yeah, but they're at the Master's level, how many female postdocs do you have? Oh none?"*

Interestingly, alongside the challenges of not being taken seriously and networking with male colleagues without being misinterpreted as having romantic interests, many of the women we interviewed commented that "*you just get used to*" being in male-dominated environments. Unfortunately, however, other instances of gender-based challenges constituted more overt sexism, often based on the assumptions that women were weaker, both physical and mentally, did not belong in the discipline, or were not prepared for an academic career. A telling example came from one Canadian postdoc when discussing support from her supervisor regarding her job prospects: *"I think the assumption is just that I'm not going to academia, and so I've had a few [times] where [my] male counter parts are. . . involved in more projects, and more taken under the wing, and so they end up being on more papers. And it's just assumed that they're heading into academia. And for me, they are. . . nice and supportive, but when it actually comes to inclusion in projects and planning and papers and writing, I get forwarded jobs that are not academic; I get forwarded jobs that are more [entry] level; I get forwarded jobs that are not academic stream. I've always been fascinated by that, because we've never had a conversation about my choices."*

Likewise, some female postdocs noted being "put down" or "looked down upon". Others noted being subject to inappropriate comments, as noted by a German postdoc, "*in some environments people will never make any inappropriate comments, but. . . some people in other environments will, you know, say. . . ask whether she's good looking or. . . just talk about it as if it's a normal topic to discuss, when you're talking about a scientist.*" In many cases, sexist attitudes also intersected with race and age, especially in male-dominated disciplines. A Canadian postdoc noted: "*I went through working in a very male dominated career... a lot of the people that are in charge in that realm are older white men. So there's a specific culture that's created. . . there's a real intersection between the age and gender thing. And there are these. . . hierarchical judgements.*"

Finally, several of the postdocs interviewed commented on the gender disparity between men and women in terms of their geographical mobility. Specifically, they noted that, in their experience, male colleagues had more freedom to travel—both short-term and long-term—than did women. A German postdoc explained: "*It's more common that. . . men will be in a relationship and. . . their partner will. . . either not have very specific career goals so they won't mind so much moving, where they are moving, and moving quite often. And well, this is a lot less likely to happen if you are a woman.*"

Maternity leave (pregnancy and child-rearing)

Of all the gender-based challenges noted, the challenge of taking maternity leave was most prominent in our analyses of the interview data. Narratives were volunteered from women who had postponed having children, given up various academic pursuits to have children, or felt they had been penalized for taking maternity leave. Indeed, several women noted the feeling of "lagging behind" their peers while on maternity leave, as described by a Canadian postdoc: "*It's difficult to stay engaged during that year. It's difficult, and so women are starting to take shorter and shorter mat leaves because they know that they are going to start getting looked over. . .*". Likewise, the challenge of nursing an infant contributed to the feeling of falling behind one's peers in terms of the time needed to remain productive, as noted by another Canadian postdoc: "*I think just the fact that I was breastfeeding. . . that did create challenges, because it's harder to be away from the baby and then when I came back to work I'd have to take time to pump milk and there wasn't really a suitable spot to do that. So it would take up a big part of my day.*" These concerns emerged in light of perceptions that the academic job market does not take the loss of productivity during a woman's maternity leave into consideration. As explicitly noted by a Canadian postdoc: "*There's [a] challenge if you decide to have children. I feel like that does harm your career. Because I don't think it's recognized. . . you're still expected to be producing a certain number of publications even if you are taking time off to have kids...*" Although some potential solutions were offered, ranging from offering more paternity leave to freezing women's

eggs, concerns were expressed that "*I still don't know how [hiring committees] could change their criteria to make it more fair.*"

While only 6 of the 21 women that we interviewed for this project had children, many of those who did not have children also stated that one of the biggest challenges for a female postdoc is choosing between having children (and when) and progressing in their career. This sentiment was poignantly expressed by one postdoc, who stated, "*Particularly since I haven't had any kids, I'm still safe.*" Indeed, several women we interviewed stated that they would like to have children, but felt the need to factor their work into the decision of when to have them. This conflict was described by a Canadian postdoc, saying: "*You sort of reach the postdoc stage where you're supposed to launch academically at the same time that you have to decide whether or not to have kids. And most women have put it off because they've been studying so long. . . I mean, I'm facing that decision myself now, it's now or never.*"

Likewise, women noted perceptions of stigma associated with taking leave itself, including the notion that having children was "frowned upon" or discouraged. As a German postdoc reported: "*The gossip in my department was that. . . the climate was not very conducive for women to become pregnant and take time off. I mean. . . so that then they become less useful for the department during their time off. . . if you do become pregnant. . . you're falling out of favor with your boss. . .. Even though my boss didn't say anything to me personally, but just that his behavior to other women prior to me, who had experienced that in the group. . . showed me that. . . the outcome might not be the best.*" Moreover, some of the challenges of having children intersected with blatant discrimination on this basis, as noted by a Canadian postdoc: "*There's still the perception like that it's viewed negatively if you decide to have kids. Like I was told for a position I was looking into, 'I don't think that you'd actually be able to do the project because of your family situation'. . . which I'm pretty sure [is] one of the things you're not really supposed to say in an interview situation.*"

Importantly, the challenges of maternity leave were not restricted to the leave itself, as women also reported that the challenges of pregnancy (e.g., fatigue, etc.) potentially hindered postdocs' productivity. However, this was especially evident among women in the natural sciences, whose lab work often had to cease as soon as they became pregnant, as noted by a German postdoc: "*No matter how nice, no matter how helpful the father is, it's always easier for the guys to have kids than for the girls. Because for girls – especially experimentalists – we can't be in the lab for like a year. So, in a year, you literally cannot work on your samples so then, yeah you could write, you can do some other things, but you're [going to] be set back. . .. Cause the first year. . . even while you're pregnant, your life is completely messed up and the guy would not be affected.*"

And finally, on the other side of maternity leave, women noted that child-rearing and the "emotional labor" of mothering was a continuing challenge—not only compared to men (as many also acknowledged their husbands' help in this regard), but also in comparison to other women without children. As explained by a German postdoc: "*Making [your] career is really a challenge because it is the woman who has to have the children. Conceive, carry and deliver and, the first months. . . when children are 1 year old, 2 years old, they need also still a lot of support. And by nature, or by individual preference, women are doing a lot of stuff for the children. I don't know why – in principle, men can also do that, but I think women voluntarily do it. Because. . . of nursing and all these things they are more connected to the children. So, if you have a demanding job. . . in my own experience. . . it is extremely difficult to compete with people who have no children or men.*"

Work-Life Balance and Health

Work-life balance

Intersecting with gender-based challenges—including having children—the postdoctoral women in our study reported the challenge of achieving so-called work-life balance, especially in light of the uncertainty of the competitive academic job market. However, unlike the aforementioned flexibility of work hours and idea development, they discussed a stark contrast in the flexibility of academia itself, especially as it related to balancing other aspects of life and family. As reported by a Canadian postdoc: "*There's no flexibility in academia, there's no acknowledgment of the importance of family life, or anything like that. You are either expected to play the game in full or get out.*" Nonetheless, some of the postdoctoral women we interviewed were attempting to achieve this balance, as described by another Canadian postdoc: "*I definitely have faced challenges in terms of work-life balance. My husband's not an academic, and he thinks I work a ton. And he has tried to lay out ground rules of when I can and cannot work, which. . . is a healthy thing. But that's a challenge. . . balancing that.*"

Interestingly, several of the German postdocs—especially those who had lived in multiple countries—noted a discrepancy in work-life balance between Europe and North America, with many opting to stay in Germany (or Europe more broadly) in hopes of maintaining more balance. As one German postdoc put it: "*That's the. . . difference. . . between the US and Germany or Europe: there's a better life-work balance in Europe as opposed to the US. . .. in the US, majority of people are workaholics. And that kind of inspires this culture of 'if you don't stay in the lab for 12 h a day you're a horrible person,' which is not always true because there is only. . . so much time that you could be efficient.*"

The women interviewed in Canada and Germany alike, however, expressed frustration with the timing of the postdoctoral stage in terms of achieving work-life balance or planning one's personal life. As stated by a German postdoc: "*I don't think science is very ideal in the whole lay-out, in how you're supposed to proceed with your career. At age thirty, should I really have a temporary job where I'm working in a city for 2 years and then I'm expected to move to a whole new country, again? This is crazy. I can't – and then I'll be 34 years old on my second post-doc in some temporary city – how are you supposed to have a family like this? I'm not doing a second post-doc, there's no chance in hell. . .*".

Mental and physical health

As anticipated, the postdoctoral women in our study also reported that the lack of work-life balance impacted their mental and physical health. The mental health issues they identified primarily included depression, anxiety, and stress. Moreover, concerns about work-life balance also intersected with identity

issues, in that focusing solely on the needs of one's work identity came at the expense of positive mental health. As noted by a Canadian postdoc: "*If you spend all your time doing something then that becomes sort of part of your identity. So then if things aren't going well in that aspect then it's harder to be positive about other things in your life if you associate your main identity [as] being a scientist. Then if you encounter barriers to employment in being a scientist then I think that is a bit of a challenge*." In some cases, women also explicitly attributed mental health issues to imposter syndrome, as in the case of a Canadian postdoc who reported: "*Mentally I think definitely there's been some bouts of depression. You know, definitely some imposter syndrome. . . So with that, you know, definitely some anxiety. . .*".

To a great extent, the mental health issues of anxiety and stress also stemmed from the frustration and uncertainty that women felt about their career prospects, noting that "*looking around at my colleagues, everyone has issues. . . they start developing in the PhD and they just get worse. It's mostly due to the uncertainty*." Others recognized that the daily stress they experienced was nearly inevitable in pursing an academic career, and struggled both with achieving work-life balance in their own lives, but also with not promoting that culture to get ahead. As one Canadian postdoc said: "*I think that's part of the training, but it's also part of the lifestyle, being an academic, which is terrible, it shouldn't be, we shouldn't expect that from people. But it's strange how the culture kind of. . . gets in to your own head. You think you know work-life balance is important, but then. . . I will still secretly judge if somebody always goes home at 4pm, and I know I shouldn't because it's great for people to set up their lives however [they] want to. But there is this. . . highly competitive spirit that everybody sort of expects, that if you want to be the best then you have to work 80 h a week. And that's just not feasible for most people, and most people don't want that, but I think that that's still the number one thing. . . is this element of stress*."

Women reported several physical ailments, also often associated with stress, including high blood pressure, exhaustion, stomach issues, back pain, and especially insomnia. Interestingly, even those women who said that they did not experience negative effects on their health due to their academic careers mentioned that they experienced great amounts of stress and contended with sleepless nights, suggesting that those women came to expect extreme stress and lack of sleep as a part of the normal postdoctoral experience. As commented by a Canadian postdoc: "*. . . you end up working ridiculous hours. . . and it's probably not good, and I was probably more stressed than I should have been, or getting less sleep or less restful sleep that I should have been . . . but nothing outside the norm.*" Likewise, another postdoc downplayed the severity of her mental and physical health symptoms, saying that she experienced "*a lot of stress, due to the lack of a proper schedule. This could be my own fault, but I'm only realizing it now. Insomnia, stomach issues. Just basically anxiety related things*."

Support and Identity (or Lack Thereof)

Institutional barriers

The mental and physical health issues experienced by postdoctoral women also intimated at the lack of support available, which was the final theme that emerged from our analyses of the interview data. When we asked about what could be done to help alleviate some of the challenges they faced, greater support from postdocs' universities or institutions, for mental health issues in particular, was requested. As one Canadian postdoc recounted: "*My officemate actually was particularly anxious and he called some kind of help line at [the university] looking for support and they denied him anything as a postdoc. They told him if he were a student okay, or faculty okay, but as a postdoc we can't help you. . ..*"

Women also reported other institutional barriers related to health, broadly speaking, as well as those specifically affecting women, especially the Canadian postdocs. In this regard, one woman noted inconsistencies across health coverage, saying that "*we have three different postdocs in our lab, we get paid through three different mechanisms, and we all have three different health insurance coverage because of that.*" However, several of the women we interviewed also noted policies around maternity leave and childcare as an institutionalized gender-based challenge needing to be addressed, in terms of "*. . . thinking critically about scholarships and how scholarships actually provide maternity leaves. . ..*" A Canadian postdoc expressed her frustration with the system, saying "*I believe the current status is they offer you 4 months of maternity leave, but my understanding is that even. . . the university here doesn't take newborns until 6 months. So you have this daycare system that doesn't take babies until 6 months, and yet you have [scholarships] that only provide maternity leave for 4 months. How does that work?*"

As recounted in our findings about gender-based challenges above, many postdoctoral women also searched for answers regarding how to eliminate gender biases and achieve greater equity in hiring practices. At the same time, many of the women we interviewed—in both Canada and Germany—expressed discontent that although the academy often publicly acknowledges these biases and barriers, they saw few changes in practice. As noted by one of our participants: "*I think it's fascinating that universities strive. . . to make statements about. . . getting their gender bias basically under control and yet when you submit CVs it's still. . . this standard form with 'How many papers have you published?' 'What's the impact factor?'... So structural barriers. . . are documented and real, and yet the universities still have this gender bias problem*." Indeed, there appeared to be consensus among the women we interviewed that both institutional as well as broad societal changes were needed to enact change in this regard. In some cases this even included women's own understanding of the issues, as expressed by a German postdoc who confessed, "*I'm not a feminist. . . my opinions are very—are on the traditional side sometimes, even though I know that's bullshit. And then I catch myself and then I have to think and evaluate why I thought that way*."

Importantly, the postdoctoral women in our study also conveyed that the barriers women face are cumulative, and that the "*tipping point*" is at the postdoctoral level "*where then you have a higher representation of men in academic positions, and. . . that kind of goes up the chain.*" In particular, the barriers women faced exacerbated the issues of achieving work-life balance or challenges of having children at the postdoctoral stage. As noted by a Canadian postdoc: "*At the postdoc level, where you've been in*

the system for 10 years that has been imposing institutional barriers on you for 10 years—where are you in that? I think for women specifically. . . I didn't feel any barriers when I was [in] a Bachelor's [degree] cause I didn't want kids then, right? As you move through, it's at that Master's, Ph.D., postdoc level that people are having to make choices between having kids or not having kids. And so again they are accumulating over time."

Support, mentorship, and identity

In the midst of numerous barriers and challenges, the postdoctoral women we interviewed also acknowledged the support they received from friends and family, colleagues, and the importance of having a mentor to guide them. For example, a Canadian postdoc recalled her husband's support after they'd had a baby, which was augmented by his ability to take paternity leave: "*The only way I was able to advance the way that I wanted to was because my husband was able to take paternity leave at the same time. Because otherwise it would have been really challenging because I didn't have any paid maternity leave. So him having leave at work was actually really important for me to be able to still publish papers and to be looking for postdocs and that kind of thing.*"

Within the academy, however, many postdoctoral women in our study attributed much of their support to strong female mentors. As recounted by a German postdoc: "*The fact that I had female advisors up until coming here, I think it helped quite a bit. Because my undergrad advisor, she was very young when she started so I basically saw her build her lab up. And then my Ph.D. advisor, she also was very young. . . and she had two kids while I was in grad school. So, I got to see all the spectrum of. . . getting a position, building up your lab, going up for tenure, having kids. . . So it was. . . very nice to see that she was able to do all that and still do science.*" Likewise, the postdoctoral women in our study reported that being around women who had experienced—and persevered through—many of the same challenges that they currently faced inspired them. As stated by a Canadian postdoc: "*I've had a lot of strong women role models around me. . . Women who, they've gone through real challenges of establishing themselves as. . . the one woman or. . . having to contend with being dismissed. . .. And so I'm indebted to the women who came before me who have tackled that and paved [the] way a little bit for me.*"

Nonetheless, women also expressed concerns that the often male-dominated, competitive environment might induce women to forget about the struggles faced by their female predecessors, and that they might lack empathy for the women that come after them. As conveyed by a Canadian postdoc: "*I worry about making sure I avoid doing this myself. . . like the tough love kind of thing. . . 'if I could do it, you can do it,' but without the kind of compassion and empathy for that. . .. And then. . . there's less of a sense of unity among women. . ..*"

Along with the mentorship of female role models, several of our study participants also commented on the importance of having support mechanisms in place among their colleagues to help during difficult times, including feelings of loneliness and social isolation. As noted by a Canadian postdoc: "*At the postdoc level. . . I'm reminded how isolating it is.*" Support from other postdoctoral women, as well as those with the same disciplinary background (or both), were reported by women as being vital to achieving a "*feeling of togetherness,*" as noted by one of the German postdocs in our study. This was deemed to be especially important at the postdoctoral stage: "*In academia. . . I think, especially in this post-doc stage where people move around a lot. . . your first circle of social activities is with your colleagues also. So this is quite important – that you can get along well with them.*"

Nevertheless, women also expressed concerns that the patriarchal culture in which the academy is embedded impeded women's support for one another, including the notion that competition to get ahead superseded any sense of "togetherness" that might be brought about by shared gender identity. As a German postdoc suggested: "*We don't support each other. I think we need. . . a strong network between women – we should support each other. And even one of my male colleagues said in this workshop, 'We go outside and drink beer, but you ladies, do you do [things] like this?' And we were thinking, 'No. . . we don't'. I think even between ourselves we have competition and we are not so much supportive.*"

Discussion

The findings of this qualitative study suggest that at least some of the challenges encountered by postdoctoral women are similar to those faced by women at other levels of the academic hierarchy (and in other fields of work), including sexism (Savigny, 2014), institutional barriers (Case and Richley, 2013), and the impacts of limited work-life balance on health (Emslie and Hunt, 2009). However, postdoctoral women also faced some unique challenges, which appeared to be driven largely by the uncertainty of both their career and life stages. As noted previously—for women who are attempting to simultaneously transition both personally and professionally—timing matters (Goulden et al., 2011; Resmini, 2016). Although some differences emerged across the two countries (e.g., greater perceptions of work-life balance in Europe compared to North America), and some challenges (e.g., sexism) stood out as more problematic in male-dominated disciplines, the experiences and perspectives of postdoctoral women in both Germany and Canada largely mirrored each other.

In particular, although the postdoctoral women in our study appreciated the flexibility of their current positions, the thread of uncertainty seemed to weave its way through other aspects of women's lives, including family planning, experiences of depression, stress, and anxiety, as well as other stress-related physical symptoms. Moreover, although the postdoctoral women in our study acknowledged the support of family, colleagues, and female mentors, the competitive nature of the job market also threatened to erode a positive sense of gender identity from which women could draw (and give) support (Haslam et al., 2005). Nonetheless, in the midst of numerous stressors and challenges faced, drawing on such support seemed to be a singular positive aspect of their experiences, suggesting that the support derived from various group memberships may be a fruitful avenue to explore as a potential mitigating factor against postdoctoral women's mental health distress and disrupted career goals.

STUDY 2

Study 1 revealed a number of barriers faced by postdoctoral women that centered on themes of uncertainty, gender-based challenges, work-life balance, and (lack of) support during a critical and stressful life stage. In Study 2, we considered the positive role of social support (e.g., from family, co-workers, role models) in thinking about how these challenges might be mitigated psychologically. The social identity approach has been employed by psychologists in recent years to understand and provide solutions to a range of health and well-being challenges (i.e., "the social cure"; Jetten et al., 2012). A main finding of this literature is that a range of important social identities—the groups to which people belong and with which they identify—are often uniquely beneficial for mental and physical health (Jetten et al., 2012, 2017; Haslam et al., 2018).

Applying this logic to the postdoctoral stage, using a large-scale multi-country survey, we assessed which—and to what degree—various social identities are associated with better well-being among postdoctoral women. In line with social identity theorizing, we predicted that identification with a variety of meaningful groups would be associated with better well-being among postdocs. However, we expected that these associations might differ depending on the identities in question. As revealed in the qualitative analysis, postdoctoral women face conflict between a number of identities, including gender-based, work-based, and, in some cases, parenthood-based identities, each of which might impact mental health to varying degrees. Following from this, in Study 2 we assessed discipline (e.g., physics, psychology, etc.) identification, gender identification, and social group (i.e., friendship) identification as potential protective factors against female postdocs' mental health issues in the form of lack of work and life control, greater depression, stress and anxiety, and lower life satisfaction.

Method

Participants and Procedure

Participants were recruited using convenience samples from the authors' social and professional networks, and wider distribution via online mailing lists of several early career researcher networks. Participants completed an online survey using Qualtrics software. The final sample comprised 304 researchers (M_{age} = 35.59, SD = 6.47). The majority were female (74%) and currently held a postdoctoral position (70%; as opposed to a permanent or graduate student position). Just under half of the sample had at least one child (44%).

Given our focus on the experiences of postdoctoral women specifically, we isolated our analysis to the 146 women in the sample who were currently in a postdoctoral position (M_{age} = 33.40, SD = 4.45). According to G*Power, this sample size provided us with 92% power to detect medium effect sizes (two-tailed; Faul et al., 2007; Erdfelder et al., 2009). Of this sample, roughly a third (37%) had at least one child. The majority of this sample worked in the natural sciences (80%, e.g., Earth Sciences, Astrophysics, Biology, Medicine), followed by the social sciences (14%, e.g., Psychology, Urban Studies), and humanities/other (6%, e.g., Law, Public Health, Epidemiology). Participants were based in Germany (43%), the United Kingdom (18%), Australia (10%), the United States (6%), Canada (6%), Portugal (4%), France (4%), the Netherlands (2%), Sweden (2%), or other (5%).

Measures

Depression

We measured depression using seven items adapted from the depression subscale of the Depression, Anxiety, and Stress Scale, short form (DASS; e.g., "I couldn't seem to experience any positive feeling at all"; Henry and Crawford, 2005). Participants reported the degree to which the items had applied to them during the previous week on a scale ranging from 0, *did not apply to me at all* to 3, *applied to me very much or most of the time*. As is the norm for this scale, we summed the items and multiplied by 2 to form an index of depression.

Anxiety

We measured anxiety using seven items adapted from the DASS short form (e.g., "I felt I was close to panic"; Henry and Crawford, 2005). Participants reported the degree to which the items had applied to them during the previous week on a scale ranging from 0, *did not apply to me at all* to 3, *applied to me very much or most of the time*. As with depression, we summed the items and multiplied by 2 to form an index of anxiety.

Stress

We measured stress using seven items adapted from the DASS short form (e.g., "I found it difficult to relax"; Henry and Crawford, 2005). Participants reported the degree to which the items had applied to them during the previous week on a scale ranging from 0, *did not apply to me at all* to 3, *applied to me very much or most of the time*. Once again, we summed the items and multiplied by 2 to form an index of stress.

Life satisfaction

We assessed life satisfaction using Diener et al. (1985) Satisfaction with Life Scale. The scale comprises five items ("In most ways my life is close to my ideal"), scored on a scale ranging from 1, *strongly disagree* to 7, *strongly agree*. As is the norm for this scale, we summed the items to form an index of life satisfaction.

Control over life

We assessed perceived life control using three items (e.g., "I feel in control of my life"; Greenaway et al., 2014) scored on a scale ranging from 1, *strongly disagree* to 7, *strongly agree*. As is the norm for this scale, we averaged the items to form an index of perceived life control, $\alpha = 0.84$.

Control over work

We assessed perceived work control using a scale by Ruthig et al. (2009). The scale comprises eight items (four positively worded, e.g., "The more effort I put into my work, the better I do" and four negatively worded, e.g., "No matter what I do, I can't seem to do well in my work") scored from 0, *not at all* to 4, *extremely*. We reverse scored the negatively worded items and, as is the norm for this scale, we summed all items to form an index of perceived work control.

Group identification

We assessed participants' identification with 10 different groups (as well as the option to include another group not listed) using one-item adapted from Postmes et al. (2013; e.g., "I identify as a member of my academic discipline") scored on a scale ranging from 1, *strongly disagree* to 7, *strongly agree*. We also asked participants to indicate which of the 10 listed groups (or to suggest another) they identified with most strongly.

Demographics

Participants provided demographic information including age, gender, whether they had children (coded for analyses as 0 = *no* and 1 = *yes*) and discipline (coded for analyses as 0 = *social science/humanities/other* and 1 = *natural science*).

TABLE 2 | Percentages of group importance in Study 2.

	Percent selected as most important group
Social group	31.5%
Work group	28.0%
Parental role	17.5%
Gender group	5.6%
Sports group	4.2%
National group	1.4%
Ethnic group	1.4%
Religious group	1.4%
School group	1.4%
Political group	1.4%
Other group	6.3%

Results

Preliminary Analyses

Means and standard deviations for the mental health variables are presented in **Table 1**. These show that female postdocs experienced mild levels of depression and stress, although normal levels of anxiety. Life satisfaction was in the slightly satisfied range, and the control (over work and life) variables had no available normed data, but responses sat on average around the mid-point of the scale, indicating only moderate levels of perceived life and work control.

To select the most relevant group identification variables, we assessed responses to the item that asked participants to indicate which group they identified with most strongly. As seen in **Table 2**, participants identified most strongly with their social (i.e., friendship) group, work (i.e., disciplinary) group, parental role, and gender group. Because only 37% of participants had children, we omitted parental role from the analyses reported below, and focused on the other three identities as predictors of mental health outcomes.

Predictors of Mental Health

Bivariate correlations among all variables are displayed in **Table 3**. These correlations suggested that neither age, having children, nor discipline, were associated with any of the group identification or mental health outcomes. Interestingly, modest positive correlations emerged between gender identity and both social group (r = 0.18) and discipline identity (r = 0.19, ps < 0.05), whereas the latter two identities were unrelated to each other, perhaps suggesting a low degree of identity overlap (and potentially high degree of identity conflict). However, group identification (both with one's discipline and social group) appeared to play a role in fostering well-being.

We subsequently conducted a series of multiple regression analyses, regressing the dependent variables (mental health and control) onto age, parenthood, discipline (i.e., natural science vs. not), and the three identification variables of interest: discipline identification, gender identification, and social group identification, in order to further delineate these relations when all variables were accounted for.

Depression

Together, the variables accounted for a significant amount of variance in depression, R^2 = 0.10, $F(6,129)$ = 2.25, p = 0.042. Of the individual predictors, however, only discipline identification was significant, β = −0.26 (95% CI = −0.41, −0.10), SE = 0.08, p = 0.001 (all other βs < 0.08, ps > 0.400), such that greater identification with one's discipline was associated with lower depression.

Anxiety

Together, the variables did not account for a significant amount of variance in anxiety, R^2 = 0.03, $F(6,127)$ = 0.67, p = 0.672, nor were any of the individual predictors significant (all βs < 0.20, ps > 0.341).

Stress

Together, the variables did not account for a significant amount of variance in stress, R^2 = 0.06, $F(6,124)$ = 1.24, p = 0.291. However, discipline identification was marginally significant, β = −0.15 (95% CI = −0.31, 0.01), SE = 0.08, p = 0.076 (all other βs < 0.07,

TABLE 1 | Descriptive statistics of mental health variables in Study 2.

	M	*SD*	Range of scores	Top of scale	Level
Depression	9.82	8.45	0–40	42	Mild
Anxiety	5.97	6.43	0–32	42	Normal
Stress	13.04	7.47	0–36	42	Mild
Life satisfaction	23.33	6.80	5–35	35	Slightly satisfied
Life control	4.63	1.38	1–7	7	Non-normed
Work control	17.89	4.53	7–27	32	Non-normed

Levels were determined based on scale norms, where available.

TABLE 3 | Bivariate correlations among variables in Study 2.

	1	2	3	4	5	6	7	8	9	10	11	12
(1) Age		0.46***	0.11	0.04	0.04	−0.02	−0.04	−0.03	−0.01	0.02	−0.13	−0.01
(2) Children			−0.09	−0.04	−0.01	0.02	−0.05	−0.13	0.03	0.12	−0.08	0.06
(3) Natural science				0.15	−0.03	−0.08	0.05	0.02	−0.02	−0.08	−0.01	−0.02
(4) Discipline ID					0.19*	0.15	−0.28***	−0.11	−0.16	0.32***	0.24**	0.32***
(5) Gender ID						0.18*	−0.05	0.05	−0.17	0.11	0.08	0.11
(6) Social group ID							−.13	0.01	0.01	0.17*	0.23**	0.14
(7) Depression								0.49***	0.62***	−0.62***	−0.49***	−0.43***
(8) Anxiety									0.68***	−0.22**	−0.23**	−0.21*
(9) Stress										−0.39***	−0.35***	−0.23**
(10) Life satisfaction											0.67***	0.40***
(11) Life control												0.41***
(12) Work control												

*Children coded as 0 = no and 1 = yes. Natural science coded as 0 = social science/humanities/other and 1 = natural science. ID, identification. *$p < 0.05$; **$p < 0.01$; ***$p < 0.001$.*

*p*s > 0.101), such that greater identification with one's discipline was associated with lower stress.

Life satisfaction

Together, the variables accounted for a significant amount of variance in life satisfaction, $R^2 = 0.17$, $F(6,131) = 4.32$, $p < 0.001$. However, only discipline identification was significant, β = 0.31 (95% *CI* = 0.16, 0.46), *SE* = 0.07, $p < 0.001$ (all other βs < 0.12, *p*s > 0.211), such that greater identification with one's discipline was associated with greater life satisfaction.

Life control

Together, the variables accounted for a significant amount of variance in life control, $R^2 = 0.12$, $F(6,131) = 2.85$, $p = 0.012$. Both discipline identification, β = 0.20 (95% *CI* = 0.05, 0.35), *SE* = 0.08, $p = 0.010$, and social group identification were significant, β = 0.16 (95% *CI* = 0.02, 0.30), *SE* = 0.07, $p = 0.030$ (all other βs < 0.07, *p*s > 0.301), such that greater identification with one's discipline and social group was associated with greater perceived life control.

Work control

Finally, the variables together accounted for a significant amount of variance in work control, $R^2 = 0.14$, $F(6,128) = 3.36$, $p = 0.004$. Once again, only discipline identification was significant, β = 0.31 (95% *CI* = 0.15, 0.47), *SE* = 0.08, $p < 0.001$ (all other βs < −0.24, *p*s > 0.226), such that greater identification with one's discipline was associated with greater perceived work control.

Discussion

Alongside identifying a number of barriers faced by women in the critical postdoctoral academic stage through a rich qualitative analysis in Study 1, we aimed to explore these experiences—including their links to mental health—quantitatively in Study 2. We collected an international sample of female postdocs from Europe, Australia, and North America, spanning a number of disciplines but featuring particularly women in the natural sciences who often face additional challenges related to lower representation than their male colleagues. These analyses confirmed the trends described in the qualitative analysis: female postdocs showed somewhat low levels of mental health and only moderate levels of perceived control over one's life and work. Given the importance of these factors in living a happy and healthy life (Helliwell et al., 2013; Greenaway et al., 2015) women in the postdoctoral period appear at risk for short-term (and potentially long-term) mental health issues.

However, on a positive note, and in line with literature in the social cure tradition (Jetten et al., 2012), we found that group identification was a protective factor, yielding better mental health on almost all surveyed outcomes. Critically, only identification with one's discipline (i.e., as a biologist, as an epidemiologist, and so on) uniquely served this protective function consistently. Although women reported being relatively highly identified with their social and gender groups, these identities did not predict unique variance in mental health outcomes with the exception that greater identification with one's social group was associated with greater perceived life control. In this regard, it may be that identification with a closely related domain (discipline vs. social group) offered greater perceptions of control over that area (i.e., work vs. life control, respectively). However, these findings also corroborate other observations in earlier academic spheres—for example, among undergraduate students—that discipline (but not gender) identification is associated with positive outcomes, such as deeper approaches to learning (Smyth et al., 2015) and working memory (Rydell et al., 2009). These insights suggest that, at least in this case, fostering a sense of identification with one's discipline or area of study may protect the mental health of women in the challenging postdoctoral stage.

GENERAL DISCUSSION

Our findings from the two studies reported here suggest that postdoctoral women face an array of unique challenges that may precipitate their leak from the academic pipeline. These challenges are both practical and psychological in nature. More positively, our findings also suggest that identifying strongly with others—especially members of one's disciplinary group (i.e., as

a physicist, political scientist, biologist, etc.)—is associated with better mental health during this tumultuous career period. We were particularly interested in the mental health experiences of postdoctoral women who were currently navigating the academic job market. As expected, these women reported a high degree of career uncertainty and numerous gender-based challenges, both of which exacerbated lack of work-life balance and mental health distress. Although the redeeming quality of their experiences stemmed from the social support and sense of identity they shared with others, even this appeared to be tenuous within the competitive nature of the academic environment. Given that these factors have not (to our knowledge) been examined in concert, this research makes a novel contribution to literature on the "social cure" (Jetten et al., 2012) by examining these issues among postdoctoral women—who are at a critical time in both personal life and career development. More broadly, the findings suggest several avenues through which gender inequality within the academy might be reduced.

Implications for Postdoctoral Women's Health and Well-Being

Although we expected that group identification would be associated with better well-being among female postdocs, we also predicted that these associations might differ depending on the identities in question. Indeed, as seen in Study 2, only disciplinary identification consistently predicted positive mental health (in the form of fewer symptoms of stress and depression, as well as greater life satisfaction and perceived control). This finding was striking, especially in light of the many challenges reported by postdoctoral women within male-dominated fields in Study 1, and given that a large part of our online sample also comprised women in (often male-dominated) natural science disciplines (Young et al., 2013). Importantly, however, the type of discipline (i.e., natural science, social science, humanities) was unrelated to the mental health indicators assessed; instead, strongly identifying with one's discipline—no matter what area of study—appeared to offer benefits.

These findings hold promise for the mental health of postdoctoral women who are able to feel a sense of belonging and connection within their fields, perhaps even helping to reduce imposter syndrome; and yet, such feelings of belonging might often be difficult to achieve, as demonstrated in Study 1. Certainly, to the degree that women feel identified with their discipline, they also tend to show better mental health, but the question remains how such identification can be fostered in the first place. It may be that change must occur within some (especially male-dominated) disciplines to ensure that maintaining a strong sense of disciplinary identity is possible among often out-numbered postdoctoral women. Likewise, it is worth noting that these findings may also have implications for scholars who engage in (increasingly common and encouraged) interdisciplinary work (Nissani, 1997; Bammer, 2017), including (and especially) the field of health research itself (Jacobs and Frickel, 2009), with strategies to ensure that those women's primary disciplinary identities are not lost.

Despite the often-acknowledged importance of gender identification—including within academia and male-dominated fields (Kaiser and Spalding, 2015; Hernandez et al., 2017), only 5.6% of women rated gender as their most important social identity in our online study (with social, work, and parental identities far exceeding this number). Moreover, gender identification was unrelated to women's perceived control and mental health in Study 2. This may reflect traditional self-categorization processes (Turner et al., 1994), such that women's disciplinary identities were relatively more salient while completing a survey about health and work, and thus was a stronger predictor in this context. It may be that the other identities we assessed—including gender and social identification—would prove beneficial in other non-work contexts, or when gender itself is made particularly salient (e.g., in circumstances involving sexism, tokenism, or intersectional identities). Indeed, given the comparative nature of simultaneously assessing numerous identities at once, gender identity may simply have been considered less relevant here. However, given an institutional climate in which women are often under-represented, especially at more senior levels (The Lancet, 2018), equally plausible is that women's gender identity was indeed quite salient but felt targeted, and likewise failed to predict well-being.

It is also important to consider the notion of multiple group memberships and identities, which have been shown in many instances to be protective of mental health (e.g., Ysseldyk et al., 2013; Jetten et al., 2015; Miller et al., 2017). The message here would be that women should not feel obligated to choose their disciplinary or gender (or any other) identity at the expense of another important group membership or life role (e.g., identifying as a parent). Unfortunately, however, as noted by the women in Study 1, the academic culture often leaves little room for such work-life flexibility. Given previous research on the potential for incompatibility (Iyer and Ryan, 2009; Cruwys et al., 2016; Matschke and Fehr, 2017; Sønderlund et al., 2017), interference (Settles, 2004), and complex intersectionality (Roccas and Brewer, 2002; Collins, 2015) among identities, new strategies—at individual, group, and institutional levels—may be needed to ensure that women's multiple group memberships and identities (and associated well-being) can be maintained within academia.

Implications for Workplace Equality Within the Academy

Much previous research has focussed on addressing gender inequality (for a recent overview, see Morgenroth and Ryan, 2018), including within academia (e.g., Kinman, 2001; Savigny, 2014; Lee, 2015; Howe-Walsh and Turnbull, 2016; Boring, 2017; Howes et al., 2018; Lundine et al., 2018). And yet, the struggles of postdoctoral women specifically—women who are arguably at the greatest risk for opting out of an academic career despite a decade (or more) of working toward it—have often been overlooked (cf. Goulden et al., 2011; Case and Richley, 2013; Ledford, 2017). The present research thus fills an important gap by identifying and addressing the issue of the leaky pipeline where it may be the most susceptible and, importantly, by collecting evidence

from the target's perspective—the perspectives of postdoctoral women themselves.

Not with standing the potential pitfalls of putting all of one's proverbial group identification eggs into one basket, the notion of fostering strong disciplinary identities suggests a potential intervention strategy for helping to keep postdoctoral women from slipping through the leaky pipeline. While it is beyond the scope of this research, the social meaning of disciplinary identity varies across academia, with implications for gender inequality; for example, in mathematics and physics, the expectation that scholars possess innate "brilliance" and make their key contributions early in their careers exacerbates gender inequities in these fields (Leslie et al., 2015). Our data suggest that in addition to improving women's mental health outcomes, a strong sense of belonging and inclusion may also cultivate a sense of control over the career uncertainty that so often plagues postdoctoral women. Importantly, however, this should not be on the shoulders of postdocs alone; instead, institutional culture change—from the individual to the ivory tower—must occur in order to promote a sense of inclusion and respect for (and among) women. As noted by the women we interviewed, this includes respect for women's research and ideas in male-dominated environments (Young et al., 2013) as well as putting competition secondary to advancing reciprocal support among women themselves. In short, it is not a matter of "fixing" women to feel more comfortable with job insecurity, but fixing the academic system to better support and protect mental health among vulnerable participants.

Most unique to the postdoctoral stage, however, may be institutional policies (or lack thereof; Horton, 2018) related to maternity leave specifically. Although gender inequality within academia affects women with and without children in many respects (e.g., teaching ratings, publication bias, tenure and promotion rates), the "baby penalty" inherent in taking maternity leave at the postdoctoral stage has been noted as especially problematic in previous research (Mason and Goulden, 2004; Ledford, 2017). Indeed, this was also expressed repeatedly by the women we interviewed, and intersected with the themes of sexism, work-life balance, and uncertainty. Interestingly, however, fears associated with the stigma of taking maternity leave, as well as attempting to balance being a parent and an academic, were voiced by both parents and non-parents alike. In this regard, women without children conveyed worry over whether or when they should plan to have children, or relief over still being "safe" because they did not yet have them. Moreover, the problem of losing postdoctoral mothers to the leaky pipeline was also reflected in the glaringly low number of mothers who participated in our research—37% in the online survey, and only 28% of the women interviewed. These figures, along with the concerns expressed by the women in our research, lend further evidence that many mothers may opt out of an academic career before it even begins, conceivably due to inequitable institutional policies or the inevitable penalty in academic output that lead them to conclude that an academic career is not amenable to family life.

Caveats and Limitations

Like all research, the studies we present here have limitations. First, responses to our online survey were only received from Australia, Europe, and North America, and the total sample size of women currently in a postdoctoral position was somewhat small; while this sample size was adequate for our analyses and does represent a broad array of nationalities, we should not generalize our results to postdoctoral women from Asian or African institutions, or elsewhere. Likewise, although we aimed to collect data from a variety of early career researchers, including men and tenure-track professors, perhaps due to our recruitment strategies (or due to the impetus of certain demographics to complete our survey), the bulk of our sample constituted postdoctoral women, thus making comparative analyses (e.g., with postdoctoral men) untenable. And finally, as with all cross-sectional survey data, causal conclusions should be interpreted cautiously (e.g., the links between group identification and mental health may be reciprocal; Miller et al., 2017).

Similarly, our interviews were restricted to Canada and Germany, and thus might not fully represent the views of postdoctoral women in other countries. Nonetheless, despite being an ocean apart, many of the challenges faced by women in these two countries were strikingly similar. The women interviewed were also primarily Caucasian, and so some issues related to intersectionality (Collins, 2015) and the "concrete ceiling" (Cotter et al., 2001) for women from racial or ethnic minority groups could not be fully explored. Nonetheless, in both our online survey and interviews, we were able to gain the perspectives of postdoctoral women from a broad range of disciplinary backgrounds and experiences. Indeed, the mixed-method approach was also a strength of our research. Several of the themes from the qualitative insights drawn from our interviews were affirmed in our quantitative analyses, including the strained mental health of postdoctoral women, the importance of feeling a sense of support and belonging—especially among one's academic peers—and the relative *lack* of reinforcement gained by identifying with one's gender group alone.

CONCLUSION

Women face barriers to achieving equitable representation in many professions, and academia is no exception. Within this often-stressful environment, the postdoctoral years pose a specific challenge brought about by a cocktail of job insecurity, identity uncertainty, and concurrent life changes. Available data suggest that women are at risk of falling prey to the leaky academic pipeline at the postdoctoral stage. Our qualitative study outlined various barriers faced by postdoctoral women "in their own words," including implications for mental health. A follow-up study quantified these mental health issues in a larger sample of postdoctoral women, highlighting disciplinary identification as a protective factor in the academic environment. Together, the results suggest that a sense of belonging is critical for combating the forces that contribute to a decision to exit academic life. But as with many gender-based investigations, the main implication of

our findings is not that women should be made to change or adapt to less than ideal circumstances. Rather, we argue that structural sexism within the system itself should be adapted in order to remove the barriers that contribute to academic workplace inequality, particularly at (but not limited to) the postdoctoral stage where the pipeline may leak the most.

ETHICS STATEMENT

This research was carried out in accordance with the recommendations of the Tri-Council Policy Statement on the Ethical Conduct for Research Involving Humans by the Carleton University Research Ethics Board-B (CUREB-B) with written informed consent from all participants. The protocol was approved by the CUREB-B.

AUTHOR CONTRIBUTIONS

RY, KG, EH, MB, MF, ES, and VT developed the study concept and designed the research. RY performed the qualitative analyses for Study 1 and drafted the manuscript. KG performed the statistical analyses for Study 2. SZ conducted and transcribed the Canadian interviews, and managed the online data collection. JL conducted and transcribed the German interviews. All authors edited, read, and approved the final manuscript.

FUNDING

This work was supported by a Global Scholar Creativity Grant awarded to RY, KG, EH, MB, MF, ES, and VT by the *Canadian Institute for Advanced Research* (CIFAR) and by a Women and Work Research Incubator Grant awarded to RY, KG, EH, MB, MF, ES, and VT by the *Carleton University Centre for Research and Education on Women and Work* (CREWW).

ACKNOWLEDGMENTS

Our appreciation to Martha Attridge-Bufton for her guidance toward planning the interviews in Germany and NVivo analyses, and to Sarah Bickley-Gardner and Rohana Hossain for their assistance with the literature review and NVivo coding.

REFERENCES

Bammer, G. (2017). Should we discipline Interdisciplinarity? *Palgrave Commun.* 3:30. doi: 10.1057/s41599-017-0039-7

Boring, A. (2017). Gender biases in student evaluations of teaching. *J. Public Econ.* 145, 27–41. doi: 10.1016/j.jpubeco.2016.11.006

Boyatzis, R. E. (1998). *Transforming Qualitative Information: Thematic Analysis and Code Development*. Thousand Oaks, CA: Sage Publications.

Bruckmüller, S., Ryan, M. K., Rink, F., and Haslam, S. A. (2014). Beyond the glass ceiling: the glass cliff and its lessons for organizational policy. *Soc. Issues Policy Rev.* 8, 202–232. doi: 10.1111/sipr.12006

Case, S., and Richley, B. (2013). Gendered institutional research cultures in science: the post-doc transition for women scientists. *Community Work Fam.* 16, 327–349. doi: 10.1080/13668803.2013.820097

Clance, P. R., and Imes, S. A. (1978). The imposter phenomenon in high achieving women: dynamics and therapeutic intervention. *Psychotherapy* 15, 241–247. doi: 10.1037/h0086006

Cohen, P. N., and Huffman, M. L. (2007). Working for the woman? female managers and the gender wage gap. *Am. Sociol. Rev.* 72, 681–704. doi: 10.1177/000312240707200502

Collins, P. H. (2015). Intersectionality 's definitional dilemmas. *Annu. Rev. Sociol.* 41, 1–20. doi: 10.1146/annurev-soc-073014-112142

Cotter, D. A., Hermsen, J. M., Ovadia, S., and Vannerman, R. (2001). The glass ceiling effect. *Soc. Forces* 80, 655–681.

Cruwys, T., Steffens, N. K., Haslam, S. A., Haslam, C., Jetten, J., and Dingle, G. A. (2016). Social identity mapping: a procedure for visual representation and assessment of subjective multiple group memberships. *Br. J. Soc. Psychol.* 55, 613–642. doi: 10.1111/bjso.12155

Diener, E., Emmons, R. A., Larsen, R. J., and Griffin, S. (1985). The satisfaction with life scale. *J. Pers. Assess.* 49, 71–75. doi: 10.1207/s15327752jpa4901_13

Emslie, C., and Hunt, K. (2009). 'Live to work' or 'work to live'? a qualitative study of gender and work-life balance among men and women in mid-life. *Gender Work Organ.* 16, 151–172. doi: 10.1111/j.1468-0432.2008.00434.x

Erdfelder, E., Faul, F., Buchner, A., and Lang, G. A. (2009). Statistical power analyses using G*power 3.1: tests for correlation and regression analyses. *Behav. Res. Methods* 41, 1149–1160. doi: 10.3758/BRM.41.4.1149

Evans, T. M., Lindsay, B., Jazmin, B. G., Weiss, T. L., and Nathan, V. L. (2018). Evidence for a mental health crisis in graduate education. *Nat. Biotechnol.* 36, 282–284. doi: 10.1038/nbt.4089

Faul, F., Erdfelder, E., Lang, A.-G., and Buchner, A. (2007). G*Power 3: a flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behav. Res. Methods* 39, 175–191. doi: 10.1109/ISIT.2013.6620417

Fereday, J., and Muir-Cochrane, E. (2006). Demonstrating rigor using thematic analysis: a hybrid approach of inductive and deductive coding and theme development. *Int. J. Qual. Methods* 5, 80–92. doi: 10.1177/160940690600500107

Goulden, M., Mason, M. A., and Frasch, K. (2011). Keeping women in the science pipeline. *Ann. Am. Acad. Polit. Soc. Sci.* 638, 141–162. doi: 10.1177/0002716211416925

Greenaway, K. H., Haslam, S. A., Cruwys, T., Branscombe, N. R., Ysseldyk, R., and Heldreth, C. (2015). From we to me: group identification enhances perceived personal control with consequences for health and well-being. *J. Pers. Soc. Psychol.* 109, 53–74. doi: 10.1037/pspi0000019

Greenaway, K. H., Louis, W. R., Hornsey, M. J., and Jones, J. M. (2014). Perceived control qualifies the effects of threat on prejudice. *Br. J. Soc. Psychol.* 53, 422–442. doi: 10.1111/bjso.12049

Harre, N., Grant, B. M., Locke, K. L., and Sturm, S. (2017). The university as an infinite game: revitalising activism in the academy. *Aust. Univ. Rev.* 59, 5–13.

Haslam, C., Jetten, J., Cruwys, T., Dingle, G., and Haslam, S. A. (2018). *The New Psychology of Health: Unlocking the Social Cure*. Boca Raton, FL: CRC Press.

Haslam, C., Tegan, C., Haslam, S. A., Dingle, G., and Chang, M. X. L. (2016). Groups 4 health: evidence that a social-identity intervention that builds and strengthens social group membership improves mental health. *J. Affect. Disord.* 194, 188–195. doi: 10.1016/j.jad.2016.01.010

Haslam, S. A., Eggins, R. A., and Reynolds, K. J. (2003). The ASPIRe model: actualizing social and personal identity resources to enhance organizational outcomes. *J. Occup. Organ. Psychol.* 76, 83–113. doi: 10.1348/096317903321208907

Haslam, S. A., McMahon, C., Cruwys, T., Haslam, C., Jetten, J., and Steffens, N. K. (2018). Social cure, what social cure? The propensity to underestimate the importance of social factors for health. *Soc. Sci. Med.* 198, 14–21. doi: 10.1016/j.socscimed.2017.12.020

Haslam, S. A., O'Brien, A., Jetten, J., Vormedal, K., and Penna, S. (2005). Taking the strain: social identity, social support, and the experience of stress. *Br. J. Soc. Psychol.* 44, 355–370. doi: 10.1348/014466605X37468

Haslam, S. A., and Reicher, S. (2006). Stressing the group: social identity and the unfolding dynamics of responses to stress. *J. Appl. Psychol.* 91, 1037–1052. doi: 10.1037/0021-9010.91.5.1037

Häusser, J. A., Kattenstroth, M., Dick, R. V., and Mojzisch, A. (2012). 'We' are not stressed: social identity in groups buffers neuroendocrine stress reactions. *J. Exp. Soc. Psychol.* 48, 973–977. doi: 10.1016/j.jesp.2012.02.020

Helliwell, J., Layard, R., and Sachs, J. (2013). World happiness: trends, explanations, and distribution. *World Happiness Report* 2013, 8–37. doi: 10.1093/acprof:oso/9780199732739.001.0001

Henry, J. D., and Crawford, J. R. (2005). The short-form version of the depression anxiety stress scales. *Br. J. Clin. Psychol.* 44, 227–239. doi: 10.1348/014466505X29657

Hernandez, P. R., Bloodhart, B., Barnes, R. T., Adams, A. S., Clinton, S. M., and Pollack, I. (2017). Promoting professional identity, motivation, and persistence: benefits of an informal mentoring program for female undergraduate students. *PLoS One* 12:e0187531. doi: 10.1371/journal.pone.0187531

Horton, R. (2018). Offline: owning up on gender equality. *Lancet* 391:1008. doi: 10.1016/S0140-6736(18)30663-9

Howes, S. S., Henning, J., Mills, M. J., and Huffman, A. H. (2018). Yes virginia, there is a gender disparity problem—and it goes beyond STEM. *Ind. Organ. Psychol.* 11, 318–323. doi: 10.1017/iop.2018.22

Howe-Walsh, L., and Turnbull, S. (2016). Barriers to women leaders in academia: tales from science and technology. *Stud. High. Educ.* 41, 415–428. doi: 10.1080/03075079.2014.929102

Iyer, A., Jetten, J., Tsivrikos, D., Postmes, T., and Haslam, S. A. (2009). The more (and the more compatible) the merrier: multiple group memberships and identity compatibility as predictors of adjustment after life transitions. *Br. J. Soc. Psychol.* 48, 707–733. doi: 10.1348/014466608X397628

Iyer, A., and Ryan, M. K. (2009). Why do men and women challenge gender discrimination in the workplace? the role of group status and in-group identification in predicting pathways to collective action. *J. Soc. Issues* 65, 791–814. doi: 10.1111/j.1540-4560.2009.01625.x

Jacobs, J. A., and Frickel, S. (2009). Interdisciplinarity?: a critical assessment. *Annu. Rev. Sociol.* 35, 43–65. doi: 10.1146/annurev-soc-070308-115954

Jetten, J., Branscombe, N. R., Haslam, S. A., Haslam, C., Cruwys, T., Jones, J. M., et al. (2015). Having a lot of a good thing: multiple important group memberships as a source of self-esteem. *PLoS One* 10:e0124609. doi: 10.1371/journal.pone.0124609

Jetten, J., Haslam, C., and Haslam, S. A. (2012). *The Social Cure: Identity, Health and Well-Being*. New York, NY: Psychology press.

Jetten, J., Haslam, S. A., Cruwys, T., Greenaway, K. H., Haslam, C., and Steffens, N. K. (2017). Advancing the social identity approach to health and well-being: progressing the social cure research agenda. *Eur. J. Soc. Psychol.* 47, 789–802. doi: 10.1002/ejsp.2333

Kaiser, C. R., and Spalding, K. E. (2015). Do women who succeed in male-dominated domains help other women? the moderating role of gender identification. *Eur. J. Soc. Psychol.* 45, 599–608. doi: 10.1002/ejsp.2113

Kinman, G. (2001). Pressure points: a review of research on stressors and strains in UK academics. *Educ. Psychol.* 21, 473–492. doi: 10.1080/01443410120090849

Kohout, R., and Singh, P. (2018). Pay equity and marginalized women. *Gender Manag.* 33, 123–137. doi: 10.1108/GM-06-2017-0073

Larson, R. C., Ghaffarzadegan, N., and Xue, Y. (2014). Too many PhD graduates or too few academic job openings: the basic reproductive number R0 in academia. *Syst. Res. Behav. Sci.* 31, 745–750. doi: 10.1002/sres.2210

Ledford, H. (2017). US postdocs face steep challenges when starting families. *Nature*. doi: 10.1038/nature.2017.22200

Lee, L. (2015). Just the facts ma'am: the gender gap in academia, from the classroom to the bank. *FASEB J.* 29(1 Suppl.).

Leslie, S. J., Cimpian, A., Meyer, M., and Freeland, E. (2015). Academic disciplines. *Science* 347, 262–265. doi: 10.1007/s40656-018-0185-2

Lundine, J., Bourgeault, I. L., Clark, J., Heidari, S., and Balabanova, D. (2018). The gendered system of academic publishing. *Lancet* 391, 1754–1756. doi: 10.1016/S0140-6736(18)30950-4

Martin, B. (1984). Academics and social action. *High. Educ. Rev.* 16, 17–33. doi: 10.1353/hpu.2016.0051

Martinez, E. D., Botos, J., Dohoney, K. M., Geiman, T. M., Kolla, S. S., Olivera, A., et al. (2007). Falling off the academic bandwagon. women are more likely to quit at the postdoc to principal investigator transition. *EMBO Reports* 8, 977–981. doi: 10.1038/sj.embor.7401110

Mason, M. A., and Goulden, M. (2004). Marriage and baby blues: redefining gender equity in the academy. *Ann. Am. Acad. Polit. Soc. Sci.* 596, 86–103. doi: 10.1177/0002716204268744

Matschke, C., and Fehr, J. (2017). Does identity incompatibility lead to disidentification? internal motivation to be a group member acts as buffer for sojourners from independent cultures, whereas external motivation acts as buffer for sojourners from interdependent cultures. *Front. Psychol.* 8:335. doi: 10.3389/fpsyg.2017.00335

Michie, S. (2002). Causes and management of stress at work. *Occup. Environ. Med.* 59, 67–72. doi: 10.1136/oem.59.1.67

Miller, K., Wakefield, J. R. H., and Sani, F. (2017). On the reciprocal effects between multiple group identifications and mental health: a longitudinal study of scottish adolescents. *Br. J. Clin. Psychol.* 56, 357–371. doi: 10.1111/bjc.12143

Morgenroth, T., and Ryan, M. K. (2018). Addressing gender inequality: stumbling blocks and roads ahead. *Group Process. Intergroup Relat.* 21, 671–677. doi: 10.1177/1368430218786079

Moss-Racusin, C. A., Dovidio, J. F., Brescoll, V. L., Graham, M. J., and Handelsman, J. (2012). Science faculty's subtle gender biases favor male students. *Proc. Natl. Acad. Sci. U.S.A.* 109, 16474–16479. doi: 10.1073/pnas.1211286109

Newsome, J. (2008). *The Chemistry PhD: The Impact on Women's Retention*. London: Resource Centre for SET and Royal Society of Chemistry, 1–38. doi: 10.1145/2350716.2350756

Nissani, M. (1997). Ten cheers for interdisciplinarity: the case for interdisciplinary knowledge and research. *Soc. Sci. J.* 34, 201–216. doi: 10.1016/S0362-3319(97)90051-3

Oyserman, D., Brickman, D., Bybee, D., and Celious, A. (2006). Fitting in matters: markers of in-group belonging and academic outcomes. *Psychol. Sci.* 17, 854–861. doi: 10.1111/j.1467-9280.2006.01794.x

Perry, R. P., Steven, H., Reinhard, H. P., Rodney, A. C., and Judith, G. C. (2005). Perceived academic control and failure in college students: a three-year study of scholastic attainment. *Res. High. Educ.* 46, 535–569. doi: 10.1007/s11162-005-3364-4

Postmes, T., Haslam, S. A., and Jans, L. (2013). A single-item measure of social identification: reliability, validity, and utility. *Br. J. Soc. Psychol.* 52, 597–617. doi: 10.1111/bjso.12006

Praharso, N. F., Tear, M. J., and Cruwys, T. (2017). Stressful life transitions and wellbeing: a comparison of the stress buffering hypothesis and the social identity model of identity change. *Psychiatr. Res.* 247, 265–275. doi: 10.1016/j.psychres.2016.11.039

Resmini, M. (2016). The 'leaky pipeline.' *Chemistry* 22, 3533–3534. doi: 10.1002/chem.201600292

Roccas, S., and Brewer, M. (2002). Social identity complexity. *Pers. Soc. Psychol. Rev.* 6, 88–106. doi: 10.1207/s15327957pspr0602_01

Rodden, J. (2014). The intellectual as critic and conscience. *Midwest Q.* 56, 86–102.

Ruthig, J. C., Tara, L., Robert, S., and Raymond, P. P. (2009). Perceived academic control: mediating the effects of optimism and social support on college students'. *Psychol. Health Soc. Psychol. Educ.* 12, 233–249. doi: 10.1007/s11218-008-9079-6

Ryan, M. K., and Haslam, S. A. (2005). The glass cliff: evidence that women are over-represented in precarious leadership positions. *Br. J. Manag.* 16, 81–90. doi: 10.1111/j.1467-8551.2005.00433.x

Rydell, R. J., McConnell, A. R., and Beilock, S. L. (2009). Multiple social identities and stereotype threat: imbalance, accessibility, and working memory. *J. Pers. Soc. Psychol.* 96, 949–966. doi: 10.1037/a0014846

Savigny, H. (2014). Women, know your limits: cultural sexism in academia. *Gender Educ.* 26, 794–809. doi: 10.1080/09540253.2014.970977

Schmader, T. (2002). Gender identification moderates stereotype threat effects on women's math performance. *J. Exp. Soc. Psychol.* 2, 194–201. doi: 10.1006/jesp.2001.1500

Settles, I. H. (2004). When multiple identities interfere: the role of identity centrality. *Pers. Soc. Psychol. Bull.* 30, 487–500. doi: 10.1177/0146167203261885

Seymour-Smith, M., Cruwys, T., and Haslam, S. A. (2017). Loss of group memberships predicts depression in postpartum mothers. *Soc. Psychiatr. Psychiatr. Epidemiol.* 52, 201–210. doi: 10.1007/s00127-016-1315-3

Smyth, L., Kenneth, I. M., Michael, J. P., Diana, M. G., and Katherine, J. R. (2015). Discipline social identification, study norms and learning approach in University students. *Educ. Psychol.* 35, 53–72. doi: 10.1080/01443410.2013.822962

Sønderlund, A. L., Thomas, A. M., and Michelle, K. R. (2017). Multiple group membership and well-being: is there always strength in numbers? *Front. Psychol.* 8:1038. doi: 10.3389/fpsyg.2017.01038

Spencer-Rodgers, J., Major, B., Forster, D. E., and Peng, K. (2016). The power of affirming group values: group affirmation buffers the self-esteem of women exposed to blatant sexism. *Self Identity* 15, 413–431. doi: 10.1080/15298868.2016.1145593

Steinke, J. (2013). In her own voice?: identity centrality and perceptions of workplace climate in blogs by women scientists in her own voice?: identity centrality and perceptions of workplace climate in blogs by women scientists. *Gender Sci. Technol.* 5, 25–51.

Tajfel, H., and Turner, J. (1979). "An integrative theory of intergroup conflict," in *The Social Psychology of Intergroup Relations*, eds W. Austin and S. Worchel (Monterey, CA: Brooks/Cole), 33–47.

The Lancet (2018). Year of reckoning for women in science. *Lancet* 391:513. doi: 10.1016/S0140-6736(18)30238-1

Turner, J. C., Hogg, M. A., Oakes, P. J., Reicher, S. D., and Wetherell, M. S. (1987). *Rediscovering the Social Group: A Self-Categorization Theory*. Cambridge, MA: Basil Blackwell.

Turner, J. C., Oakes, P. J., Haslam, S. A., and McGarty, C. (1994). Self and collective: cognition and social context. *Pers. Soc. Psychol. Bull.* 20, 454–463. doi: 10.1177/0146167294205002

Young, D. M., Rudman, L. A., Buettner, H. M., and McLean, M. C. (2013). The influence of female role models on women's implicit science cognitions. *Psychol. Women Q.* 37, 283–292. doi: 10.1177/0361684313482109

Ysseldyk, R., Haslam, S. A., and Haslam, C. (2013). Abide with me: religious group identification among older adults promotes health and well-being by maintaining multiple group memberships. *Aging Ment. Health* 17, 869–879. doi: 10.1080/13607863.2013.799120

Conflict of Interest Statement: The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

frontiers in Psychology

REVIEW
published: 27 August 2019
doi: 10.3389/fpsyg.2019.01879

Coping With Stigma in the Workplace: Understanding the Role of Threat Regulation, Supportive Factors, and Potential Hidden Costs

Colette Van Laar[1], Loes Meeussen[1,2], Jenny Veldman[1,2], Sanne Van Grootel[1], Naomi Sterk[1] and Catho Jacobs[1,3]*

[1]Department of Psychology, Center for Social and Cultural Psychology, University of Leuven, Leuven, Belgium, [2]Fonds Wetenschappelijk Onderzoek, Brussels, Belgium, [3]Department of Linguistics, Multimodality, Interaction and Discourse, University of Leuven, Leuven, Belgium

Despite changes in their representation and visibility, there are still serious concerns about the inclusion and day-to-day workplace challenges various groups face (e.g., women, ethnic and cultural minorities, LGBTQ+, people as they age, and those dealing with physical or mental disabilities). Men are also underrepresented in specific work fields, in particular those in Health care, Elementary Education, and the Domestic sphere (HEED). Previous literature has shown that group stereotypes play an important role in maintaining these inequalities. We outline how insights from research into stigma, social identity, and self-regulation together increase our understanding of how targets are affected by and regulate negative stereotypes in the workplace. This approach starts from the basis that members of negatively stereotyped groups are not just passive recipients of negative attitudes, stereotypes, and behaviors but are active individuals pursuing multiple goals, such as goals for belonging and achievement. We argue that it is only by understanding stigma from the target's perspective (e.g., how targets are affected and respond) that we can successfully address workplace inequality. Key in this understanding is that stereotypes, prejudice, and discrimination have taken on much more subtle forms, with consequences for the way members of stigmatized groups cope. These insights lead us to propose an approach to understanding barriers to workplace equality that highlights four key aspects: (1) the different (often subtle) potential triggers of identity threat in the workplace for members of stigmatized groups; (2) the ways in which members of stigmatized groups cope with these threats; (3) the role of supportive factors that mitigate potential threats and affect self-regulation; and (4) potential hidden costs for the self or others of what appears at first to be effective self-regulation. The focus on threats, coping, support, and potential hidden costs helps us understand why current diversity efforts are not always successful in increasing and maintaining members of stigmatized groups in organizations and provides insight into how we can aid efforts to effectively lower barriers to workplace equality.

Keywords: stereotypes, coping, stigma, workplace barriers, threat, gender, minorities

OPEN ACCESS

Edited by:
Christopher T. Begeny, University of Exeter, United Kingdom

Reviewed by:
Ines Jurcevic, University of Washington, United States
H. Wenwen Ni, University of California, Los Angeles, United States

****Correspondence:***
Colette Van Laar
colette.vanlaar@kuleuven.be

Specialty section:
This article was submitted to Organizational Psychology, a section of the journal Frontiers in Psychology

Received: *31 August 2018*
Accepted: *30 July 2019*
Published: *27 August 2019*

Citation:
Van Laar C, Meeussen L, Veldman J, Van Grootel S, Sterk N and Jacobs C (2019) Coping With Stigma in the Workplace: Understanding the Role of Threat Regulation, Supportive Factors, and Potential Hidden Costs. Front. Psychol. 10:1879. doi: 10.3389/fpsyg.2019.01879

INTRODUCTION

Despite changes in their representation and visibility, women and ethnic and cultural minorities are still strongly underrepresented in various work fields and higher occupational positions. Similarly, there are serious concerns about the inclusion and day-to-day workplace challenges facing LGBTQ+ people (Hebl et al., 2002), people as they age (Diekman and Hirnisey, 2007), and people dealing with physical or mental disabilities (Wilson-Kovacs et al., 2008). Men are also underrepresented in specific work fields, in particular those in Health care, Elementary Education, and the Domestic sphere (HEED; Croft et al., 2015).

The underrepresentation of these social groups is problematic as equitable representation is an indicator of the presence of equal opportunities and social justice (Eagly, 2016; Ellemers and Rink, 2016). Also, in inclusive work climates, diversity can positively affect corporate performance and team effectiveness (Gonzalez and Denisi, 2009; Nishii, 2013; Van Knippenberg et al., 2013; Ellemers and Rink, 2016), and people are more attracted to organizations perceived as concerned with justice and morality (Van Prooijen and Ellemers, 2015). There is thus a need to tackle the underrepresentation of different social groups in work contexts.

Tackling underrepresentation means understanding why these inequalities continue to exist despite increased movement toward equality. We argue that to truly understand and hence successfully address workplace inequality, it is vital to know how members of underrepresented groups are affected by and respond to the workplace challenges they face. We outline a target-focused approach that integrates research on stigma and social identity with work on self-regulation. We begin with insights from research into stereotypes, prejudice, and discrimination that helps us understand the potential workplace threats members of stigmatized groups face. We then move on – from this focus on "perpetrators" of inequality and on targets as passive victims – to a focus on targets as active agents coping with stigma-related threat. Specifically, we make the case that four key aspects need to be understood to address workplace inequality (see **Figure 1**): (1) the different potential triggers of identity threat; (2) the ways individuals self-regulate and cope with these threats and the individual level factors that affect this; (3) supportive workplace factors that can mitigate the impact of threat; and (4) recognition of the potential hidden costs of regulating such threats.

Together these four key aspects present a base for building successful programs addressing workplace inequality. The focus on threats, coping, support, and potential hidden costs brings a more comprehensive understanding of the complexities and nuances by which stigma has its often subtle effects. It demonstrates that taking the target's perspective into account is indispensable in effectively lowering workplace equality barriers. As such, it helps us understand why current workplace diversity efforts that tend to focus on either fixing the perpetrator or fixing the victim are not always successful in attracting and retaining members of stigmatized groups, and provides tools to effectively approach stigma in the workplace.

A Short History of Psychological Research on Social Inequalities

To understand how individuals cope with workplace stigma, we need to first give an overview of how the field of psychology has approached the topic of social inequalities over time. For many years, research on inequalities focused on the origins of bias and discrimination. This work sought to understand why majority or high-status groups have negative attitudes, prejudices, and stereotypes, and how these can be altered to increase social equality. Major insights followed from such work into what stereotypes are, how they form and affect outcomes of members of stereotyped groups. This included insights into – and the complexities of – reducing stereotypes (for reviews, see Nelson, 2009; Dovidio et al., 2010b).

Increasingly, however, it became clear that this work on external barriers faced by members of stigmatized groups was missing an important part: an understanding of the ways members of stigmatized groups experience stigma. This emphasis came much later, from the late 1980s onward, along with the

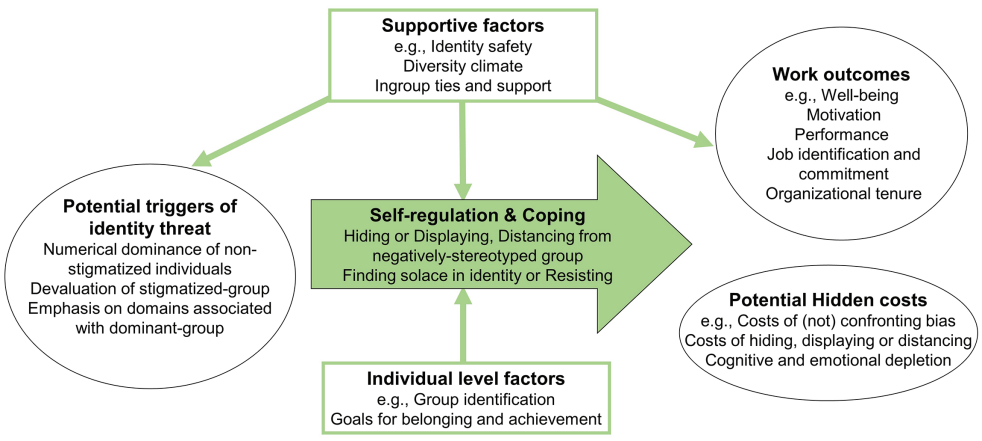

FIGURE 1 | Conceptual model: a threat, support, and potential hidden costs approach to understand how members of stigmatized groups cope with workplace inequality.

increased representation of members of negatively stereotyped groups in the field as researchers. In part through this influx, social inequalities were looked at from a different perspective, examining questions that gave a more central place to the experiences of targets of prejudice, stereotyping, and discrimination. Initially, this work focused on the target as a passive recipient, and evidenced the harm being done. This highlighted that targets can become threatened in their social identity as members of stigmatized groups, with consequences for their well-being, motivation, and performance (e.g., for overviews, Smith et al., 2007; Schmader et al., 2008; Emerson and Murphy, 2014). Increasingly, however, this work emphasized that members of stigmatized groups are not just passive recipients who in essence are waiting around to be discriminated against, but that they also respond and in this way influence outcomes. This was reflected, for example, in early key work by Crocker and Major and by Swim on the target's perspective (Crocker and Major, 1989; Crocker et al., 1998; Swim et al., 1998; Oyserman and Swim, 2001). The research increasingly showed that members of disadvantaged groups are quite resilient to stigma and that it is too simple to assume that experiences with prejudice, stereotyping, and discrimination automatically get transformed into low well-being and negative educational or work outcomes (Barreto, 2014; Leach and Livingston, 2015; De Lemus et al., 2016).

Increasingly then, the field has begun to examine active coping with stigma and has made substantial gains in understanding exactly how these coping processes work, with this work based on three main literatures that overlap and feed into one another: first, major strides were made through research from the social identity perspective which from its earliest days focused on how group identities affect relations between groups and on how identity processes affect cognition, affect, and behavior (e.g., Tajfel and Turner, 1979; Turner et al., 1987; Ellemers et al., 1999, 2002). Research on social identities made clear that social identities are malleable (can be emphasized or deemphasized), that people are motivated to pursue a positive sense-of-self, and that this self stems in part from the social groups to which people feel they belong. When a group is valued in a given context (for instance, at work), one's membership in this group – or social identity – can increase one's positive sense-of-self. However, when a group is devalued (i.e., faces negative stereotypes, is discriminated against), one's sense-of-self can become threatened. Further work noted that such social identity threats trigger targets' responses to reduce the threat. These responses include individual mobility (e.g., attempting to acquire higher workplace status), emphasizing other, more valued qualities of one's group (e.g., emphasizing that women bring superior interpersonal skills to the workplace), or taking collective steps to challenge the lower position of one's group (e.g., advocacy for workplace equal opportunity policies). This clarified the important role of groups in coping with negative stereotypes, prejudice, and discrimination, and the different personal and social identity strategies people may use to protect a positive sense-of-self (e.g., Heilman, 2012).

The second literature base for strides in understanding how targets cope with negative stereotypes, prejudice, and discrimination came in the form of the stigma perspective that became increasingly merged with the social identity perspective over time (e.g., Crocker and Major, 1989; Steele and Aronson, 1995; Aronson et al., 1998; Crocker et al., 1998; Swim et al., 1998; Oyserman and Swim, 2001; Schmader et al., 2008; Shelton et al., 2010; Barreto, 2014). Early work outlined how people identify and react to prejudice in interpersonal and intergroup settings. Increasing insight was gained into the effects of stigma on targets' assessments of their abilities, motivation, and performance and on self-esteem and well-being (Crocker et al., 1998; Swim and Stangor, 1998). Related work examined social stigma as a potential stressful event (e.g., Miller and Major, 2000; Miller and Kaiser, 2001; Miller, 2006), noting that a stress response occurs when individuals perceive a self-relevant threat that exceeds their coping resources (Miller and Major, 2000; Miller and Kaiser, 2001; Major and O'Brien, 2005). Not only several coping efforts to regulate emotion, cognition, and behavior, but also one's own physiology and the environment were proposed as responses to stressful events or circumstances (Connor-Smith et al., 2000; Compas et al., 2001). For instance, people can cope through increased engagement (e.g., enhancing a sense of personal control, changing the way one thinks about a situation through positive thinking or cognitive restructuring), or disengagement (coping efforts that disengage from or avoid the stressor; Miller and Kaiser, 2001; Miller, 2006). The stigma and coping perspective helped understand emotional, cognitive, and behavioral coping and clarified how the same stressor may be more or less impactful and may lead to different coping responses for different people and in different situations.

Lastly, our understanding of how members of stigmatized groups respond to negative stereotypes, prejudice, and discrimination has been increasingly influenced by work from a self-regulation perspective (e.g., Carver and Scheier, 1998, 2002; Swim and Thomas, 2006; Fiske, 2008; Higgins, 2012; Inzlicht and Legault, 2014). This work takes as a premise that people actively pursue multiple goals. Every individual has core social motives that drive behavior (e.g., esteem, belonging, self-enhancement), and these can become more or less of a concern through the situation people find themselves in (Fiske, 2004; Vignoles et al., 2006; Vignoles, 2011). Self-regulation processes begin when people compare their perceptions of the current situation with their goals or standards (Carver and Scheier, 1998, 2002). A comparison that reveals a discrepancy between inputs and desired goals creates motivation to reduce the discrepancy. Applied to the workplace, the self-regulation perspective leads to the understanding that responses of members of stigmatized groups need to be examined from a goal perspective – distinguishing, for example, goals for achievement and belonging, and that – depending on which goal is salient – people may come to different responses.

Together the blending of these three sets of literature have provided a much better base to understand how individuals cope with stigma in the workplace – e.g., stereotype threat as a cost of identity threat and stigma regulation as discussed later. Also, not only did insights regarding coping with stigma develop and change over time, so did the groups being studied. Early work focused on women and ethnic minorities as the

prototypical groups facing stigma. It was only much more recently – also in response to societal changes in laws, attitudes, and interests that increased the visibility of other targets – that others started to be studied, including LGBTQ+, individuals facing age-related workplace stereotypes, and individuals facing physical or mental disabilities. An important recent addition is the focus on men facing stereotypes in fields where they are underrepresented (in particular in HEED – Health care, Elementary Education, and the Domestic sphere; Croft et al., 2015; Meeussen et al., 2019). Also, recent research has begun to focus on intersectionality, examining the experiences of individuals who are members of more than one stigmatized group (Purdie-Vaughns and Eibach, 2008; Cole, 2009; O'Brien et al., 2015; Remedios and Snyder, 2018). While many of the processes of threat and coping and their consequences are shared, each group is also characterized by particular characteristics or experiences (e.g., how visible identities are, whether there is one or multiple stigmas as for female ethnic minorities, what the costs of confronting stigma are, whether a stigma broadly affects many domains or a particular domain [e.g., stigma facing ethnic minorities vs. men in HEED]). In fact, through research focusing on each of these groups, the field as a whole has gained a much more thorough understanding of threat and coping, with insights and questions particularly relevant for one group aiding insights for other groups (e.g., see Deaux and Lafrance, 1998; Creed, 2006; Wilson-Kovacs et al., 2008; Crandall et al., 2009; Herek, 2009; Hebl et al., 2010; Dovidio et al., 2010a).

Building on these research traditions described above, we outline a threat, support, and potential hidden costs approach to help understand how individuals cope with workplace prejudice, discrimination, and stereotypes. As noted, we discuss four key aspects to help address workplace inequality: (1) understanding the different potential triggers of threat; (2) understanding how individuals cope with these threats; (3) identifying the supportive factors that may minimize these threats; and (4) increasing insight into the potential hidden costs of regulating identity threat.

POTENTIAL TRIGGERS OF THREAT IN THE WORKPLACE

In order to address the threats individuals face in the workplace and to counteract barriers to workplace equality, it is important to understand the different (often very subtle) factors that can trigger identity threat. Identity threat is the psychological threat arising from possible devaluation of one's group (Branscombe et al., 1999a). While related terms are used in other literatures (e.g., stressor, demand), we use the term typical of the social identity tradition. As we outline below, workplace identity threat can result from three kinds of triggers. These triggers may be activated solely or together, and each trigger can point to different solutions to reduce workplace inequality. The first is the higher workplace numerical presence of members of the non-stigmatized group, the second the devaluation and discrimination of the stigmatized group, and the third a workplace emphasis on characteristics and domains typically associated with the non-stigmatized group (for related discussions, see Inzlicht and Ben-Zeev, 2000; Steele et al., 2002; Van Laar et al., 2010).

The Numerical Dominance of the Non-Stigmatized Group

First, increasing evidence shows how the numerical dominance of the non-stigmatized group in the workplace can by itself already present a threat to members of stigmatized groups. This results from basic group processes: people categorize themselves and others into ingroups and outgroups based on observable similarities and differences (Tajfel and Turner, 1979; Turner et al., 1987). Being different from others along a specific dimension (e.g., gender, ethnicity, sexual orientation, age, and disability) makes that dimension more salient (Wilder, 1984) and increases the expectation that one will be viewed in terms of that dimension (Frey and Tropp, 2006). Negative stereotypes associated with that dimension then also become more salient (e.g., Heilman, 1983; Avery et al., 2008; Somvadee and Morash, 2008) and in turn affect outcomes (effects of stereotypes on outcomes are discussed in the next section).

Consistent with this, considerable work in social psychology has demonstrated effects of being in the numerical minority. Generally, environments can be perceived as more identity threatening when they contain fewer others of one's group (i.e., when they lack critical mass; e.g., Allmendinger and Hackman, 1995; Cohen and Swim, 1995; Sekaquaptewa and Thompson, 2002, 2003; Avery et al., 2008; Duguid, 2011). When in the minority, individuals tend to become vigilant regarding the minority identity, with various negative consequences (Emerson and Murphy, 2014). Illustrative is research in STEM domains (Science, Technology, Engineering, and Math), a domain where women tend to be in the numerical minority. Research by Murphy et al. (2007) showed that women in STEM viewing a video of a STEM conference depicting a majority of men/minority of women (vs. a balanced ratio) exhibited more cognitive and physiological vigilance, reported lower belonging, and had less desire to participate in the conference (see also Richman et al., 2011). Men were not influenced by the numerical representation in this (for them) identity-safe domain. Similarly, Inzlicht and Ben-Zeev (2000) have shown that women's (but not men's) math performance can become impaired when in a numerical minority, but not when gender is balanced. Relational demography research has also shown numerical underrepresentation (in terms of gender, age, and ethnicity) to be associated with lower organizational commitment, lower job satisfaction, lower work motivation and performance, and increased turnover (Liao et al., 2004; Riordan et al., 2004), particularly when the numerical representation triggered increased perceived conflict between the work identity and the underrepresented-group identity (Veldman et al., 2017). Among African-American professionals, research has related numerical underrepresentation to lower well-being and stronger experiences with employment discrimination (Jackson et al., 1995; Avery et al., 2008). Also, the effects of numerical underrepresentation can be additive

when someone is part of multiple minority groups (Jackson et al., 1995; Remedios and Snyder, 2018). In other words, a female leader of color in a predominantly White and masculine context is affected not only by her ethnic minority status (as one of few Blacks) but also by her gender minority status (as one of few women). Moreover, not only generally numerical-representation matters, but particularly also representation at the various (and especially higher) levels of the organizational hierarchy (Unzueta and Binning, 2012), and for some groups numerical underrepresentation is a given, due to their actual numerical minority status in society (e.g., sexual minorities, people with disabilities). Also, those with a concealable stigma have a harder time identifying others who share their stigma and may thus have an even harder time feeling there is any presence of their group.

The Devaluation of Stigmatized Groups

A second way in which identity threat can be triggered in the workplace is through devaluation of stigmatized groups. One of the clearest cues regarding devaluation is seeing discrimination, and many studies have shown the negative effects of experiencing prejudice and discrimination, including higher stress and lower psychological well-being – and lower psychological and physical health more generally (Pascoe and Smart Richman, 2009; Schmitt et al., 2014; Jones et al., 2016).

While blatant discrimination is an obvious cue, devaluation in a given organizational context is often more likely to come from smaller subtler cues. While blatant cues explicitly display negative attitudes toward a group, subtle cues convey the same belief as blatant messages but in more covert and often unintentional ways (Dovidio, 2001; Barreto and Ellemers, 2005; Ellemers and Barreto, 2015). When such subtle cues signal an identity's low value in a specific context, this particular group identity becomes salient for the group member, and a vigilance process is initiated. This directs stigmatized individuals' attention toward additional cues to determine the value and meaning of their social identity in that context (Murphy et al., 2007; Murphy and Taylor, 2012). If situational cues confirm the possibility a social identity may be negatively evaluated, vigilance increases. Also, chronic and situational expectations about being stigmatized increase attention to identity-relevant cues (Kaiser et al., 2006). In fact, a single subtle cue can trigger experiences of social identity threat even if the setting exhibits no overt evidence of prejudice or discrimination (Murphy et al., 2007). Also, one cue can determine the interpretation of another (ambiguous cue) in both positive and negative directions (Kaiser et al., 2006).

One of the strongest demonstrations of contextual cues triggering these effects comes from the extensive stereotype-threat literature. Hundreds of studies have now shown that cues making salient negative group stereotypes trigger concern about being judged on the basis of these stereotypes (Steele et al., 2002). In fact, the stereotypes may even only exist in the mind of the stigmatized group member: for stereotype threat to occur, others around one do not need to hold a negative stereotype of the group, one only need to believe that they do. This concern can set in motion anxiety, mind wandering, negative thinking, and a wish to disprove the stereotype. These together co-opt working memory, resulting in decreases in performance and lower well-being (e.g., Steele and Aronson, 1995; Blascovich et al., 2001; Steele et al., 2002; Schmader and Johns, 2003; Cadinu et al., 2005; Johns et al., 2008; Schmader et al., 2008; Inzlicht and Schmader, 2012; Mendes and Jamieson, 2012; Schmader and Beilock, 2012; Pennington et al., 2016; Spencer et al., 2016). Research in organizational contexts has shown that experiences with stereotype threat negatively affect career aspirations, career confidence, and professional identification (see Kalokerinos et al., 2014 for an overview). Also, the effects of stereotype threat have been shown in all kinds of groups. For example, stereotype threat has been related to more negative job attitudes and increased turnover intentions among female employees in the legal profession (Von Hippel et al., 2011); to higher turnover intentions among male primary school teachers (Kalokerinos et al., 2017); and to more negative job attitudes, poorer work mental health, and increased intentions to resign among older employees (von Hippel et al., 2013).

Information as to whether a certain identity is devalued can come from various types of cues. For example, workplace cues that make a specific identity and accompanying stereotypes salient (e.g., when physical access to important company locations is difficult for employees in a wheelchair) or from cues that signal the (under)representation of a stigmatized group (e.g., company photos showing only White males). Devaluation can also come from more general cues that signal an organization's diversity beliefs and values (e.g., value for meritocracy that may fail to acknowledge structural inequalities) or from organizational structures and policies (e.g., colorblind policies that may fail to recognize the existence and value of different cultural identities; see Emerson and Murphy, 2014). Numerous studies have shown the negative effects of such workplace cues. For instance, when objects in a computer science environment were stereotypically male, women were less interested in computer science and felt less of a sense of belonging (Cheryan et al., 2009; see also Murphy et al., 2007). Similarly, Hall et al. (2015, 2019) showed among female engineers that low acceptance cues from others in daily conversations (rather than explicitly hostile cues) led to a sense of identity threat, which in turn increased mental exhaustion and disengagement (see also Ahlqvist et al., 2013). Other studies have shown similar negative cue effects, for example, lowered leadership aspirations in women following exposure to gender stereotypic advertisements (Davies et al., 2005). Also, Avery et al. (2007) showed that organizational cues indicating low value for diversity predict higher absenteeism in African-American employees. Similarly, Purdie-Vaughns et al. (2008) showed that cues suggesting low minority representation coupled with cues suggesting the organization values colorblindness (vs. values diversity) led to higher identity threat and workplace distrust in African-American professionals.

This work shows that devaluation often stems from small subtle triggers that have profound effects, an understanding key to addressing devaluation in the workplace.

Emphasis on Domains Associated With the Dominant Group

A third way in which threats can present themselves to members of stigmatized groups is through the workplace emphasis on domains perceived to describe the non-stigmatized group more than the stigmatized group (Derks et al., 2006, 2007a). This can result in lower perceived fit and a threatening environment for members of stigmatized groups, leading to lower well-being, lower motivation and disengagement, and lower performance and higher turnover intentions.

Research on role congruity has shown, for example, how emphasis on domains or characteristics perceived to better fit the non-stigmatized than one's stigmatized group may trigger identity threat (Heilman, 1983; Eagly and Karau, 2002; Lyness and Heilman, 2006; Bongiorno et al., 2014). Much of this work has been conducted with regard to gender. Thus, in traditionally masculine professions such as STEM domains, the police force, or the military, characteristics traditionally associated with men are more strongly valued than characteristics traditionally associated with women (Somvadee and Morash, 2008; Archbold et al., 2010; Cheryan et al., 2017). However, perceived role (in)congruity affects other groups and intersectional identities, too: e.g., older employees – stereotyped as rigid and unadaptable – are at a disadvantage in rapidly changing work domains (Diekman and Hirnisey, 2007), and employees with a mental illness may experience added prejudice when their mental illness is seen as stereotypical of the other gender (Koenig and Eagly, 2014).

Other research has also shown that there can be a mismatch between qualities, values, or norms that tend to be associated with members of traditionally underrepresented groups and the settings they are entering and that this is subtly signaled in the context (Stephens et al., 2012a,b, 2014; Schmader and Sedikides, 2018; Veldman et al., 2019). For example, Gaucher et al. (2011) showed that this may occur for women through job descriptions that use more masculine-themed words (e.g., emphasizing dominance, competitiveness). Men too are perceived as not fitting HEED domains that emphasize traditionally female qualities such as being nurturing, helping others, and being emotionally involved (Cejka and Eagly, 1999; Fiske et al., 2002; Wayne and Cordeiro, 2003; Rajacich et al., 2013; Rudman and Mescher, 2013).

Conclusions Regarding Potential Triggers of Threat in the Workplace

In summary, three kinds of triggers may elicit threat for members of stigmatized groups at work, and each trigger may call for different solutions to reduce workplace inequality (we discuss these in the implications section). First, members of stigmatized groups tend to be in the numerical minority in the workplace. Being in the minority and dissimilar from others tends to make that social identity salient, with negative consequence for well-being, motivation, and performance. Second, devaluation – often through subtle small environmental cues – can profoundly affect the outcomes of members of negatively stereotyped groups. Third, the emphasis on domains stereotypically associated with the dominant group can create an expectation of underperformance and an unwelcoming work environment for members of stigmatized groups. As this overview shows, the group identities themselves are not the problem: it is the threat that comes along with that identity in particular contexts and in various ways that can result in negative consequences for well-being, motivation, turnover, and performance. Also, all of these factors tend to work together: workplace underrepresentation sends the message that the reasons for the underrepresentation of a particular group are legitimate – the result of the lower abilities or skills on the part of these individuals. This bolsters devaluation and maintains segregated roles and contexts that themselves then reconfirm the stereotypes.

While the above research identifies the various potential triggers of threat and the substantial effects of these threats for members of stigmatized groups, research has also brought a much better understanding of the intricate ways that members of negatively stereotyped groups have found to cope with these threats. We turn to this issue next.

HOW PEOPLE COPE WITH STIGMA-RELATED THREAT

As discussed, the current understanding of stigma reflects members of stigmatized groups not as passive recipients of stigma-related threats but as active actors pursuing multiple goals in the workplace and beyond (Fiske, 2004, 2008; Swim and Thomas, 2006). Although identity threat can threaten various goals, two key ones are the goal to achieve (to feel competent, to do well) and the goal to belong (to fit in, to feel at home; Steele et al., 2002; Barreto, 2014; Hall et al., 2015). Potential threats to these goals trigger self-regulatory processes and coping, with people adjusting behavior, cognition, and affect to try to achieve these goals (Carver and Scheier's 1998, 2002; Affect-Alarm Model of Self-Control – Miller and Major, 2000; Inzlicht and Legault, 2014). Workplace threats can differentially affect these specific goals and in turn trigger different regulatory responses that can move people in different directions (Steele et al., 2002; Swim and Thomas, 2006). Thus, concerns for achievement may lead members of stigmatized groups to try even harder to overcome doubts surrounding their group membership. Alternatively, people may disengage or exit if they perceive they cannot change others' attitudes, or if the challenge is too great, too stressful, or simply too aversive (see also Wrosch et al., 2003). Concerns for belonging meanwhile may lead people to focus on social relations: attempting to increase their fit with others, seeking solace in their shared identity with similar others at work, or working together with these others to challenge workplace barriers. Also here, concerns for belonging may lead members of stigmatized groups to exit the environment and seek environments with increased belonging.

These goals for achievement and belonging need to be understood in the context of the modern workplace where forms of bias have taken on much more subtle, harder to recognize forms (Dovidio, 2001; Barreto and Ellemers, 2005;

Cortina, 2008; Ellemers and Barreto, 2015). Blatant forms of bias and discrimination are increasingly less acceptable – so while they are more easily protested against than in the past, they are also much less pervasive (see also Operario and Fiske, 2001). Instead individuals have to face more subtle cues, leaving them unsure whether in fact discrimination or devaluation occurred (e.g., Crosby et al., 1993; Williams et al., 2003; Sterk et al., 2018) – which may make responses that do not involve claiming bias or collectively protesting more likely in the workplace (Wright et al., 1990; Becker, 2012; Branscombe et al., 2012). We address a number of these responses here, varying from hiding and concealing stigmatized identities to finding solace in one's group and resisting.

Hiding, Displaying, and Distancing

One of the ways members of stigmatized groups may deal with identity threat is through attempting to acquire, display, or emphasize the qualities they perceive to be important or valued in the context and hide or conceal those that are not. Individuals alter their self-presentation in these ways to try and avoid bias and rejection by coworkers and to increase their belonging (an assimilation strategy – Garcia and Crocker, 2008; Newheiser and Barreto, 2014; Newheiser et al., 2017). People may emphasize or display the qualities that they believe to be most fitting in the context (for instance, ethnic minority employees emphasizing ethnic majority characteristics, or women in leadership positions emphasizing agentic characteristics; Derks et al., 2011a,c, 2015; see also earlier discussion on workplace emphasis on domains associated with the dominant group). Additionally, individuals may hide or conceal their threatened identities. For instance, individuals have been found to hide (vs. reveal) concealable stigmatized identities, such as LGBTQ+ identity, having a history of mental illness, or poverty (Newheiser and Barreto, 2014). Similarly, Pronin et al. (2004) showed that women strongly identified with math disavowed traditionally feminine characteristics strongly associated with – but not those that weakly associated with – the gender-math stereotype.

People often combine hiding and displaying in "self-group distancing" as an identity management strategy. Specifically, upwardly mobile members of negatively stereotyped groups may increasingly distance themselves from their negatively stereotyped group in the workplace (Pronin et al., 2004; Derks et al., 2011a,c, 2015, 2016; Becker and Tausch, 2014; Faniko et al., 2017). This can occur inadvertently – as the individual tries to best fit the environment dominated by members of the non-stigmatized group – or more strategically, when upwardly mobile individuals recognize that presenting the self in ways more acceptable to the non-stigmatized group may bring certain benefits (e.g., being perceived as a potential future leadership candidate) or avoid costs (e.g., avoid restrictions on access to key social networks). A number of indicators of self-group distancing have been found, including an increased emphasis on one's outgroup characteristics, emphasizing that one is different from other members of one's stigmatized group, concealing the devalued identity, increasing the expression of stereotypical views of other members of one's group, and denying the existence of bias against one's group (Ellemers et al., 2004; Pronin et al., 2004; Burkley and Blanton, 2008; Derks et al., 2011c, 2015, 2016; Becker and Tausch, 2014; Faniko et al., 2017). Such self-group distancing behaviors can be mild (e.g., Gay employees not objecting when stereotypes about LGBTQ+ are voiced in meetings) to more major (e.g., a female employee saying that the underrepresentation of women in the company is an indication that women simply do not have what it takes to excel).

When women show self-group distancing behavior, this has been referred to as "Queen bee" behavior. Women have indeed been found to show self-group distancing behavior in response to existing stereotypes, prejudice and discrimination in their organizations (Pronin et al., 2004; Cohen and Garcia, 2005; Derks et al., 2011a,c, 2015; Kaiser and Spalding, 2015). For instance, senior policewomen showed more self-group distancing following reminders of gender bias at work (Derks et al., 2011c). Research has also shown that individuals who are less identified with their stigmatized group are more likely to self-group distance under threat, and indeed high identifiers may not show distancing at all (e.g., Derks et al., 2009, 2015; Kaiser and Spalding, 2015). This is consistent with other work within the social identity approach showing that low identifiers may be less loyal and faithful to the group as threats increase, while high identifiers are more likely to stay loyal and choose collective routes to address inequality (Derks et al., 2009; Hersby et al., 2009; Iyer and Ryan, 2009; Ellemers and Van Laar, 2010). As such then, self-group distancing appears to be an identity management strategy aimed at benefitting individual mobility and individual-level outcomes (Tajfel and Turner, 1979; Derks et al., 2007b, 2016).

However, self-group distancing occurs not only for women but also for other groups (see Derks et al., 2016 for reviews). Older adults, for example, respond to stigma with reduced group identification, and by indicating that they feel younger than they are (Weiss and Lang, 2012). Also, following priming with ethnic bias, ethnic minorities present themselves in ways fitting the ethnic majority group (Derks et al., 2015), and contact with the majority group increases the likelihood that ethnic minorities will distance (Becker et al., 2013). Also, Gay men have been found to distance themselves from the stigma of the "feminine" homosexual by emphasizing their masculinity and rejecting Gays they see as stereotypically "feminine" (Eguchi, 2009; Hunt et al., 2016). Even in minimal groups created in laboratory settings, being undervalued and underrepresented induces self-group distancing (Wright and Taylor, 1999).

Hiding, displaying, or distancing can be effective to the degree that this presentation of the self is accepted by the various workplace parties. Also, hiding one's identity is possible to the degree that identities are concealable (e.g., low SES, sexual orientation, mental illness), and less easy for visible identities such as gender or ethnicity (Quinn, 2017). Acquiring, displaying, or emphasizing qualities typical of the dominant group meanwhile is more generally available to all kinds of groups. However, this may not always be accepted by other members of one's stigmatized group (Marques and Paez, 1994; Van Laar et al., 2014), or may lead to rejection by members of the dominant group who do not accept the altered presentation. This has been shown, for example, in the case of women

showing more agentic (and lower communal) traits and behaviors, and as a result being rejected by both men and women (Fiske et al., 1991; Rudman and Glick, 2001; Gabriel et al., 2017). Similarly, men are not always accepted, welcomed, or valued when showing more communal qualities, for example, in HEED domains (Lockwood and Kunda, 1999; Wayne and Cordeiro, 2003; Lockwood, 2006; Bell-Scriber, 2008; Rudman and Mescher, 2013). Lastly, various personal and group costs may result from self-group distancing, hiding, and concealment, as we will see later in the section on potential hidden costs.

Finding Solace in Identity or Resisting

While members of stigmatized groups may try to hide, conceal, or minimize their threatened identity, emphasize their outgroup characteristics, or more generally distance from their stigmatized group, they may also go in the opposite direction: finding solace in strong group identities that they share with others, or resisting prejudice, stereotypes, and discrimination (Branscombe et al., 2012).

Research on identity affirmation has shown that strong group identities can indeed bring solace. This work is grounded in extensive research on the function of group identities, with group identities providing a base for self-definition, allowing individuals to maintain their distinctiveness, and to enhance positive views of the self (Spears et al., 1997; Ellemers et al., 2002; Jetten et al., 2014). Specifically, this work shows that members of stigmatized groups benefit when they themselves (or the surrounding context, as outlined later under "supportive factors") value or affirm positive aspects of this identity (Biernat et al., 1996; Sherman and Cohen, 2002; Sherman et al., 2007; Oswald and Chapleau, 2010; Ghavami et al., 2011; Latrofa et al., 2012). Research has shown that members of stigmatized groups indeed personally affirm group identity in response to threat (Derks et al., 2006, 2007a; Latrofa et al., 2012; see also Crocker and Major, 1989), and that this identity affirmation helps against stereotype threat (Logel et al., 2009), buffers self-esteem (Spencer-Rodgers et al., 2016), and protects motivation and performance (Derks et al., 2006, 2007a), in part by decreasing physiological threat and increasing physiological challenge (Derks et al., 2011b). Such affirmation of group identities is particularly likely to be shown by those more highly identified with their group (Derks et al., 2009; Hersby et al., 2009; Iyer and Ryan, 2009; Ellemers and Van Laar, 2010). Work on the rejection-identification model has similarly shown that rejection may motivate a return to the group (Branscombe et al., 1999b – but see Begeny and Huo, 2017, 2018 for potential costs of identification through cognitive saliency).

Members of stigmatized groups may also obtain extra motivation precisely from the stereotypes they face, trying extra hard to show the stereotypes are wrong (e.g., Steele et al., 2002; Keller, 2007; Grimm et al., 2009; Ståhl et al., 2012a; Leach and Livingston, 2015). Research using psycho-physiological indices (Blascovich et al., 2000) has shown that people indeed can resist negative effects of stereotypes, showing efficient mobilization of energy and turning threat experiences into a challenge to perform well despite negative stereotypes (Derks et al., 2011b). For example, research with women with high leadership efficacy found increased leadership identification on confrontation with gender stereotypes about leadership. They also performed better in a leadership task, despite this being physiologically stressful for them (Hoyt and Blascovich, 2007, 2010). Additionally, research has shown that when experiencing gender inequality, higher group identification may prompt resistance, resulting in greater activation of reversed gender stereotypes, stronger leadership aspirations, more persistence in stereotypically masculine domains, and greater support for collective action (De Lemus et al., 2013, 2015; Leicht et al., 2017; Van Breen et al., 2018).

Research shows that people usually do not start with resistance. Often they first try to work within the system, adapting to the new situation and trying harder, using affirmations or other ways of coping, and only when this is not effective turning to the stigmatized group to try to work together (Wright et al., 1990; Boen and Vanbeselaere, 2000; Iyer and Ryan, 2009; Branscombe et al., 2012). As discussed earlier, such direct collective responses may be less likely in modern workplaces where bias is perceived as being in the past, and less identifiable and pervasive. Altogether then, there is substantial evidence that people may find solace in strong group identities, and the sharing of these identities with others of their group, and may also find strong motivation precisely from the stereotypes they face.

Conclusions Regarding Coping With Threat

In summary, research on coping has provided increasing insight into the various ways in which members of stigmatized groups deal with identity threat. As workplace bias has taken more subtle and ambiguous forms in many societies, more indirect responses to stigma (such as hiding, displaying, and distancing from the group, or conversely finding solace in identity and resisting the group stereotypes) are also more likely. Members of negatively stereotyped groups may minimize or conceal the threatened identity in the workplace in an effort to fit in, triggering the identity as little as possible in the minds of those with whom they interact. They may try extra hard to do well, to show the stereotypes are wrong, obtaining extra motivation precisely from the stereotypes they face. When such efforts appear insufficient, individuals may disengage from the domain altogether in an effort to protect well-being, and instead focus on domains in which they expect they may be more successful.

Of course, even though members of stigmatized groups are active agents coping with threat, this does not mean that the responsibility to do so must (only) lie with them (Ellemers and Barreto, 2015). Considerable research has provided insights into the factors in the work environment that may mitigate the effects of identity threat, and how this can be useful to organizations in their efforts to reduce workplace inequality. We discuss these contextual supportive factors next.

SUPPORTIVE FACTORS THAT MITIGATE THREAT OR ITS EFFECTS

Increasing evidence is providing a better understanding of how supportive factors outside the individual may help members

of stigmatized groups cope with identity threat in the workplace. Specifically, as shown in **Figure 1**, supportive factors can affect whether potential triggers of identity threat are in fact experienced as threats; affect the self-regulation and coping strategies that are available to members of stigmatized groups; and can directly affect the outcomes of members of stigmatized groups. We review recent work on identity safety and diversity climate factors (including colorblind vs. multiculturalist approaches), plus the importance of ingroup ties, role models and support for members of stigmatized groups.

Identity Safety and Diversity Climate

An important way to reduce identity threats or the consequences of identity threat experienced by members of negatively stereotyped groups in work settings is through the creation of identity safety. Identity safety makes it less likely that identity threat is triggered. Also, identity-safe environments reduce the need to regulate any threats and directly affect outcomes. This research emerges from a number of different angles: for instance, work with groups that are in conflict or that differ in power has shown that feeling one's group is accepted is a prerequisite for members of low status or negatively stereotyped groups to move toward reconciliation (Shnabel et al., 2009; Saguy and Kteily, 2014). Also, identity safety can be effectively created through contextual identity affirmations, signaling that a social group is valued within this organization. Affirmation of identities of importance to members of underrepresented groups has been found to protect well-being, motivation, and performance (Derks et al., 2006, 2007a, 2009; Van Laar et al., 2010). For example, contextual identity affirmation has been found to lower identity threat among those of low socio-economic status (Stephens et al., 2015), and to lower identity threat and increase well-being, motivation, and perceptions of opportunity in the workplace among young Muslim women (Van Laar et al., 2013).

One key way in which identity safety is communicated is through the diversity climate of an organization. The diversity climate signals the extent to which the workplace is open to various social groups (Huo and Molina, 2006; Purdie-Vaughns et al., 2008; Gonzalez and Denisi, 2009; Plaut, 2010). For members of stigmatized groups, perceiving a positive diversity climate that accepts, respects, and values their group helps reduce threat, relates to feeling more included, stronger organizational identification and commitment, and lower turnover intentions (e.g., Luijters et al., 2008; Gonzalez and Denisi, 2009; Plaut et al., 2009; Choi and Rainey, 2013; Podsiadlowski et al., 2013; Meeussen et al., 2014; Van Laer, 2018). Interestingly, diversity climates have effects beyond the groups specifically targeted: men of color, for instance, experience identity safety from organizational diversity policies aimed at women, and women from ethnic diversity policies (Chaney et al., 2016).

A positive diversity climate in a work organization is not sufficient if numerical underrepresentation, presence of negative stereotypes and devaluation, and the emphasis on domains associated with the dominant group outlined earlier are not addressed. A recent study showed, for example, that among women in the police force, experiencing a positive diversity climate only partially reduced the negative effects of underrepresentation, with the women continuing to show negative consequences of underrepresentation on identity conflict (Veldman et al., 2017). Other work has shown the dangers of piecemeal diversity initiatives and "token" minority representation (i.e., representation of only a few minority group members) that can blind people to existing inequality (Brady et al., 2015; Kirby et al., 2015; Anisman-Razin and Saguy, 2016; Gündemir and Galinsky, 2017), and should therefore not constitute the sole strategy to advance equality (see also Hentschel et al., 2013). Also, in generating a positive diversity climate, it is important that organizations also pay attention to the needs of the majority or high-status individuals, who similarly use information on diversity climate as an indicator of the degree to which their identity is accepted. They may resist diversity efforts within an organization when they feel that these put their group at a disadvantage (Avery et al., 2013). Thus, a focus on the value of differences in multiculturalism may be interpreted by majority members as a lack of value for their "standard" identity (Stevens et al., 2008; Plaut et al., 2011). Instead, researchers identify an all-inclusive multicultural climate or a multicultural meritocracy as most effective, with these focusing on identity safety not just for members of negatively stereotyped groups, but making sure that members of dominant or majority groups also feel valued and included (Stevens et al., 2008; Emerson and Murphy, 2014; Gündemir et al., 2017; see also Ellemers and Rink, 2016).

One aspect of a positive diversity climate that serves as an indicator of identity safety and an antidote to workplace threats for stigmatized groups is organizational support. Support can be proximal or distal, and can come in the form of instrumental support that provides tangible help to solve a problem or issue, or in the form of emotional support, offered through empathy and caring (Cohen and Wills, 1985; Wills, 1985; House et al., 1988; Richman et al., 2011; London et al., 2011a,b). As discussed earlier, possessing a social stigma in the workplace is a potentially stressful event (Miller and Major, 2000; Miller and Kaiser, 2001), and support can increase the perceived resources to cope with the stressor, thus even turning threat into positive challenge (Lazarus and Folkman, 1984a,b; Cohen and Wills, 1985; Miller, 2006). For members of stigmatized groups, experiencing support in the organization – or perceiving that it is available – predicts stronger engagement and better achievement outcomes (Eccles, 1994; Walton and Cohen, 2007; Hartman and Hartman, 2008; Richman et al., 2011; Baysu et al., 2014). Such support can come from various sources: e.g., support from representatives of the majority high-status group in the workplace can lower negative effects of stigma-related threat, and support may be especially important from those in positions of authority or power (e.g., Baruch-Feldman et al., 2002; Drury and Kaiser, 2014). Support from both these sources signals acceptance and value for the stigmatized group, and can create new norms throughout an organization, particularly in organizations where members of stigmatized groups are underrepresented, face strong negative stereotypes, or where domains associated with the dominant group are more strongly emphasized. Hall et al. (2015) showed this in their recent daily-diary study among female engineers,

where having positive work conversations with male colleagues cueing acceptance protected the women from identity threat. Importantly, such positive conversations were more likely to occur in organizations perceived to have more gender-inclusive policies (i.e., in identity-safe organizational cultures; Hall et al., 2018). Recent work is more generally beginning to address support for diversity by members of high-status groups, examining the conditions under which members of high-status groups may offer support, for example as allies, and the effects this support can have (e.g., Saguy et al., 2008; Fingerhut, 2011; Becker et al., 2013; Saguy and Dovidio, 2013; Cihangir et al., 2014; Drury and Kaiser, 2014; Brown, 2015; Simon and O'Brien, 2015; Droogendyk et al., 2016; Emina et al., 2018; Good et al., 2018). In our own work, we are examining, for example, support in military and police organizations, examining whether men become more aware of gender inequality in their organization through contact with women, and effects of this contact on their support for gender-related social change.

Importance of Ingroup Ties and Support

In lieu of or in addition to identity safety or support from the high-status majority group in the workplace, ingroup support can also provide a resource to mitigate threat. Obtaining workplace ingroup support can become more difficult if one's group is underrepresented and if the stigma is concealed or not visible. However, ingroup support outside the organization can then offer additional possibilities. Positive effects of a connection with the ingroup when under threat is predicted by various social-psychological models, including the rejection-identification model (Branscombe et al., 1999b), and the stereotype inoculation model which shows ingroup members to function as "social vaccines," who inoculate and strengthen fellow group members (Dasgupta, 2011), and backed up by substantial evidence (e.g., Correll and Park, 2005; Haslam et al., 2005; Bakouri and Staerklé, 2015; see also Richman et al., 2011 – but see Begeny and Huo, 2017, 2018 for potential negative effects of increased cognitive salience following identification). People are particularly likely to seek ingroup support when identity threat is high or pervasive (Branscombe et al., 2012). Such support helps individuals overcome various negative effects of threat (e.g., Cohen et al., 2000; McLeroy et al., 2001; Ostberg and Lennartsson, 2007; Rosenthal et al., 2013), increases psychological well-being, and decreases distress (Turner, 1981; Haslam et al., 2005). Ingroup support may also encourage people to pursue (rather than avoid) activities in which they are negatively stereotyped. Men, for instance, are more likely to increase engagement in HEED domains and increase HEED occupational aspirations when told that other men support and value communal characteristics (Van Grootel et al., 2018). Even through mere presence of similar others, support can lift self-esteem, improve mood (Frable et al., 1998), and provide a buffer for social identity threat (Levin et al., 2006; Richman et al., 2011).

A particular case of ingroup support comes through support from ingroup leaders and role models (see also, Unzueta and Binning, 2012). For members of stigmatized groups, demographic similarity with supervisors (e.g., ethnic or gender similarity) is related to reduced absenteeism and tardiness, and increased intent to remain in the organization (Avery et al., 2012). Also, seeing examples of successful members of one's stigmatized group has been found to improve self-evaluations and performance, give inspiration and proof others can do it, and increase aspirations and motivation (Lockwood and Kunda, 1999; Marx and Roman, 2002; McIntyre et al., 2003, 2005; Lockwood, 2006; Marx et al., 2009; O'Brien et al., 2016; Dennehy and Dasgupta, 2017). For men too, having male role models in HEED domains increases interest in elementary teaching and nursing (e.g., Cochran and Brassard, 1979). Recent work by Morgenroth et al. (2015) suggests that role models have three distinct functions: acting as behavioral models, representing the possible, and being inspirational.

Conclusions Regarding the Effects of Supportive Factors in Work Environment

In conclusion, research on identity safety, diversity climates, and ingroup and outgroup support suggests various ways in which supportive factors in the workplace may buffer threat or help cope with threat. Supportive factors may also moderate which self-regulation and coping are available and used to deal with threat (and this would be an interesting avenue for future research). For instance, the presence of supportive (minority) networks in the organization makes it easier to display and find solace in an identity, and to show resistance when identity-threatening experiences do occur. Meanwhile, hiding and distancing are more likely when such supportive networks or positive diversity climates are not available. This – and the work reviewed above – also highlights the benefits for members of stigmatized groups to maintain their links with other members of their group for the protection of well-being, motivation, and performance in the workplace. In addition, support from the dominant group may be key as majority individuals are still more likely to be in positions of power and seen as legitimate sources of workplace information (Drury and Kaiser, 2014). Hence, ingroup and outgroup support processes can contribute to efforts to address workplace inequality.

POTENTIAL HIDDEN COSTS OF DEALING WITH STIGMA

As outlined above, we have quite good understanding of the potential threats facing members of stigmatized groups in work settings. While the threats can be significant, we also know that individuals have various coping strategies at their disposal, and environments can offer important sources of support. Nevertheless, dealing with stigma – even if seemingly effectively – can have important unintended and hidden costs, either for the stigmatized individuals themselves or for other members of their group. These costs are often not at all obvious, and understanding these potential costs is important to effectively address workplace equality in the long run. Below, we discuss costs that can be particularly consequential

in the workplace: costs of (not) confronting bias, costs of concealing identity and distancing from one's group, and cognitive and emotional depletion following stigma regulation.

Costs of (Not) Confronting Bias

One of the hardest tasks members of stigmatized groups face is deciding whether to confront or not confront the injustice they experience in the workplace, because confronting others with claims of bias or discrimination entails risks. Research has shown that members of stigmatized groups who confront bias are less likely to be believed and are evaluated less favorably than members of majority groups addressing the same bias. This is true even when the bias is acknowledged and blatant (e.g., Swim and Hyers, 1999; Czopp and Monteith, 2003; Kaiser and Miller, 2003; Czopp et al., 2006; Kaiser, 2006; Shelton et al., 2006; Rasinski and Czopp, 2010; Becker et al., 2011, 2014; Eliezer and Major, 2012; Gervais and Hillard, 2014). Also, given that bias cues have become more subtle, these costs can become even higher as the legitimacy of bias attributions is more ambiguous.

Deciding whether to confront or not can thus be a very difficult decision, and members of stigmatized groups may ruminate extensively on what is best. Even when they do not confront, this rumination about whether they should have confronted can last long after the situation has passed. Also, when they do not confront, members of stigmatized groups can face costs, such as guilt or shame about not confronting injustice, or feeling they have let down or sold out the group (Shelton et al., 2006). Also, non-confrontation may leave members of stigmatized groups feeling inauthentic, feeling they failed to be loyal to their true selves and personal goals. Such dissonance has been found to be so aversive that people who do not confront sometimes minimize the seriousness of the bias claim to restore a positive sense-of-self (Rasinski et al., 2013).

Costs of Hiding, Displaying, and Distancing

Potential costs can also result from coping strategies that involve hiding threatened identities; emphasizing outgroup characteristics; and from distancing from the negatively stereotyped group more generally. These costs can be incurred by the self as well as by other ingroup members.

First, hiding, concealing, or distancing from an identity in the workplace can be a costly strategy for the self. Individuals hide, conceal, and distance because they believe others will view them more favorably when they minimize their stigmatized identity, and that they will thus be less likely to experience bias or discrimination (Quinn, 2017, 2018). Also, they believe that distancing from the stigmatized identity will increase their chances for acceptance and belonging (Newheiser and Barreto, 2014). However, research has shown that concealment often tends to have the opposite effect: leading individuals to feel lower belonging and acceptance (Newheiser et al., 2017). This is driven in part by people reducing their self-disclosure also of other self-relevant information beyond the stigmatized identity, and by feeling less authentic in interactions (Newheiser and Barreto, 2014). Also, research has shown that hiding (vs. revealing) a stigmatized identity is detected by external observers and by non-stigmatized interaction partners, who have less positive impressions of the person, and of the interaction, when the person conceals an identity (Newheiser and Barreto, 2014). Moreover, as with failure to confront, members of stigmatized groups may feel disloyal to their ingroup following distancing (Goldman and Kernis, 2002; Shelton et al., 2005). Distancing also lowers opportunities to obtain support from the ingroup, further increasing negative consequences for the self (Branscombe et al., 1999b; Haslam et al., 2005; Van Laar et al., 2014; Derks et al., 2016). Such findings show that distancing from one's stigmatized identity in an organization can be a costly strategy.

Not only the self, but others too may experience costs from hiding or distancing. Recent research suggests that self-group distancing behavior by women in leadership positions has harmful effects for junior women exposed to this behavior (Sterk et al., 2018). Behaviors such as the denial of gender bias and expressions of negative views of women may be taken at face value when shown by a woman, while seen as bias when shown by a man (see also Ni and Huo, 2018). As members of one's own group are often assumed to have positive intent toward the ingroup (Hornsey et al., 2002; Hornsey and Imani, 2004), these expressions may remain unchallenged and not counter argued by the self, and in this way affect self-evaluations and well-being (Barreto and Ellemers, 2005; Sterk et al., 2018; c.f., Ni and Huo, 2018)[1]. Thus, while self-group distancing can allow leaders who are members of stigmatized groups to cope with experienced threats, it may increase negative consequences for subordinates coming up in the ranks.

Other work has shown that distancing behaviors may have more general negative effects for addressing workplace equality. While members of stigmatized groups are unlikely to see self-group distancing behavior as bias, it is even less likely that members of the dominant group will do so. People tend to believe that representatives of groups have their groups' interests at heart (Sutton et al., 2006) – and thus members of stigmatized groups expressing stereotypical views of their own group (e.g., as having lower abilities or being less committed), or denying the existence of discrimination against their group, may be perceived as presenting the objective truth as to the current degree of inequality. This has important ramifications, as members of dominant groups can play a valuable role in addressing workplace inequality. Hence, an important avenue for future research is to examine to what extent members of non-stigmatized groups indeed start to believe inequality is less of a problem when successful members of stigmatized groups (e.g., female leaders) deny the existence of discrimination and express negative stereotypes of their own group.

Also in other ways, distancing has costs for the organization at large: members of stigmatized groups trying to hide, fit in, and assimilate into the organizational context undermines the organization's potential to profit from diversity (e.g., see Ellemers and Rink, 2016). Again then, distancing from the

[1]Ni and Huo's results suggest that the demotivating effects of perceiving outgroup bias can outweigh negative effects of internalizing ingroup bias, and indeed we agree that both these processes can have negative effects.

group – like other responses to threat such as exiting when one feels low fit – reduces the likelihood that organizations will actually change to become more welcoming to members of stigmatized groups. While distancing behaviors result from social inequality, they can then also contribute to the maintenance of workplace inequality.

Cognitive and Emotional Depletion

A third set of potential costs of coping with stigma is cognitive and emotional costs for the individual. As described earlier, coping with threat can at first boost energy and resources: individuals often try extra hard to overcome stereotypes and recruit extra resources to do so (Hoyt and Blascovich, 2007, 2010; Ståhl et al., 2012a). In fact, the prevention focus or vigilance that accompanies stereotype threat may be especially useful to recruit such resources (Seibt and Förster, 2004; Koch et al., 2008, 2009; Ståhl et al., 2012b; see also van Peer et al., 2007; Putman and Roelofs, 2011) and to more effectively differentiate (and thus choose) between signals and environments offering threat versus safety (Seligman, 1971; Öhman and Mineka, 2001; Ståhl et al., 2012b). However, coping with workplace stigma has many aspects: constant vigilance for threat, especially among those highly identified with their stigmatized group (Begeny and Huo, 2017, 2018); managing and suppressing stereotype-relevant thoughts and feelings; effectively negotiating threatening contexts; choosing to confront or not confront bias; avoiding mistakes and the confirmation of group-relevant stereotypes; and more generally regulating threat (emotional coping, accepting, or resisting). To some degree, targets can become better at – and habituated to – responding to stigma, such that those who have more frequent experiences and practice dealing with stigma become better at doing so and suffer fewer cognitive costs (Crisp et al., 2009; Johnson et al., 2010). Nevertheless, all of these aspects take cognitive and emotional energy and can eventually lead to exhaustion (e.g., Schmader and Johns, 2003; Johns et al., 2008; Logel et al., 2009; Ståhl et al., 2012a; Hall et al., 2015; c.f., Baumeister et al., 1998; Muraven and Baumeister, 2000). Research has shown that this exhaustion has negative consequences for later similar tasks as well as for other domains (e.g., reducing regulation of learning behaviors, lowering persistence on physical tasks, and increasing unhealthy eating behavior – for an overview, see Schmader et al., 2008; Inzlicht et al., 2011; Ståhl et al., 2012a).

Conclusions Regarding Potential Hidden Costs of Coping With Stigma in the Workplace

In summary then, while we know individuals have various creative strategies available to cope with negative stereotypes, prejudice and discrimination, the regulation involved can take a significant toll. Members of negatively stereotyped groups face not only the usual workplace task demands but also juggle regulation of stigma with all its consequences. This regulation includes complex choices about whether to confront or not confront injustice and whether to display or hide one's identity – staying with or distancing from the stigmatized group. Moreover, regulation strategies successful for the individual may have unintended negative consequences for other group members. Also, regulating threat may have its own consequences – including cognitive depletion and emotional exhaustion, potentially leading to less effective functioning over time. This can have serious consequences for the self, the organization, and the ironic reinforcement of the stereotypes that caused the initial depletion and exhaustion. Fatigue from daily management of such issues may lead members of negatively stereotyped groups to opt out: leaving contexts and domains in which they are stigmatized and entering domains where they face fewer such challenges (Crocker et al., 1998; Ryan et al., 2008; Stephens and Levine, 2011; Kossek et al., 2016). Crucially, these phenomena are unlikely to be recognized as responses to identity threat and may instead be seen as individual problems and "choices" (Ryan et al., 2008; Stephens and Levine, 2011). Also, even if each specific cost were to be small, they can build up and accumulate. Important future research directions thus include obtaining a much greater understanding of these cumulative costs of facing stigma (for examples see, Pascoe and Smart Richman, 2009; Kogan et al., 2015; Van Dijk and van Engen, 2019).

IMPLICATIONS FOR ORGANIZATIONS

A threat, support, and hidden costs approach to targets' responses to stigma helps us understand why current workplace diversity efforts that tend to focus on either "fixing the perpetrator" (e.g., anti-bias training) or "fixing the victim" (mentoring programs etc.) are not always successful in attracting and retaining members of stigmatized groups, and provides insights as to how we can more effectively reduce workplace inequality. A fixing the perpetrator or victim approach is much too simple of an understanding that ignores much of the complex human cognition and behavior through which in- and exclusion takes place. As reviewed here, processes of in- and exclusion include inadvertent automatic stereotypes and biases and subtle devaluations. These are harder to identity but potentially even more potent. A fixing the perpetrator or victim approach tends to look for sources within individuals rather than in the larger work environment or interaction between individuals. A threat, support, and hidden costs approach to targets' responses to stigma helps us understand why members of negatively stereotyped groups may experience higher levels of stress, depletion, and burn out in organizations; may underperform or appear less committed or motivated; and may not always take available opportunities. These responses should be understood not as dysfunctional responses – or as inherent group differences – but as consequences of the regulation of identity threat in efforts to maintain multiple and sometimes conflicting goals for esteem, belonging, and achievement. This regulation can also entail important, but less obvious hidden costs. Extra vigilance for stigma may mean members of stigmatized groups recruit extra resources and perform well or even excellently in the short run. However, they may also show cognitive depletion and exhaustion over time. Similarly, moving up on the organizational ladder

importantly benefits enhancement of self, but may leave members of negatively stereotyped groups as loners in predominantly outgroup organizations much in need of identity safety and ingroup support, or may lead them to distance themselves from other members of their group in an attempt to fit in, leaving the status quo unchanged and the benefits of diversity for organizations uncultivated.

Key in this focus on threats, coping, support, and hidden costs is also that this approach considers members of stigmatized groups not as passive recipients of negative stereotypes and bias, but as active individuals pursuing multiple goals for esteem, belonging, and achievement. This approach is thus part of a shift away from a perspective on members of majority groups as perpetrators and members of stigmatized groups as victims, to a social psychology of intergroup relations that examines the interacting role of the high-status dominant group and the low-status stigmatized group within the contexts in which these interactions occur (Ellemers and Barreto, 2015).

Based on the insights described in this paper, a number of specific implications for organizations arise. First, organizations can do more to create awareness: awareness of how sometimes very subtle identity threats occur in work contexts and in daily interactions through underrepresentation, stereotypes, and an emphasis on domains associated with the dominant group. This also includes an awareness of which supportive contextual factors can reduce threat, and the potential hidden costs of regulating negative stereotypes, prejudice, and discrimination. Such awareness is particularly important among employees who function as gatekeepers in evaluation, selection, and promotion functions and committees, and among people in leadership positions who strongly impact organizational norms, climates, and policies.

Creating awareness should be approached using good state-of-the-art methods, and it is vital for organizations to understand that offered diversity training programs – and diversity initiatives more generally – are not always consistent with the research state-of-the-art and may backfire or actually increase stereotypes (Kalev et al., 2006; Dobbin and Kalev, 2013, 2018; Kaiser et al., 2013; Roberson et al., 2013; Dover et al., 2014; Moss-Racusin et al., 2014; Brady et al., 2015; Kirby et al., 2015; Gündemir and Galinsky, 2017). This is especially the case when such programs emphasize group membership and stereotypical differences; focus on "fixing the faults" of members of stigmatized groups; or when employees who are members of groups currently overrepresented in the organization feel that these efforts find their group at fault or put their group at a disadvantage. Additionally, for programs to be effective, it is important that they provide insight into how potential threats often manifest themselves in subtle ways in daily workplace interactions. Increased awareness of what is actually important in order to address threats, support, and hidden costs for members of stigmatized groups then allows the tackling of the subtle barriers involved. These approaches are often quite different than what is currently common in the organization: for instance, an organizational diversity contact point where employees can notify someone when experiencing discrimination is not likely to pick up on (and hence address) subtle daily devaluation cues. Instead, counteracting such cues involves systematically scanning the workplace for cues in organizational materials, images, policies and advertisements, and in task and position assignments. Also, it means understanding how these cues and stereotypes become salient in the day-to-day workplace – e.g., in interactions between colleagues, and creating attention to this in the organization.

Second, organizations can create better structures and procedures that take into account this knowledge on threat, coping, support, and hidden costs. We know from much research that we cannot get rid of stereotypes easily, but we can set up recruitment, selection, evaluation, and promotion procedures in organizations such that there is less opportunity for stereotypes to affect outcomes. These structures and procedures go against individuals' inclinations as busy and time-stressed human beings, leaving less opportunity for biases to impact decisions. The diversity literature has extensive guidelines on how to do this, including the monitoring and feedback of diversity progress (e.g., through the organization's demographic statistics), and ensuring accountability for this progress; the use of more standardized and transparent recruitment, selection, and promotion procedures; and extra efforts to support networks, mentoring, and the availability of role models and supportive career planning for members of stigmatized groups (see e.g., Bias Interrupters for a comprehensive site monitoring and continually updating the best state-of-the-art on structures and procedures to increase diversity at work).

Finally, organizations should concentrate on creating "identity-safe" environments in which identities are not negatively viewed but positively valued – paying particular attention to what the current identity cues communicate regarding the safety of different identities in the organization. Organizations can make use of the increasing knowledge with regard to the impact of daily hassles and cues; the positive impact of identity affirmation; and work on reducing the various potential triggers of threats to increase workplace equality. Organizations can pay specific attention to the availability of outgroup and ingroup support – also through networks, role models, and people in authority within the organization. As part of this, checking for representation of stigmatized groups is important, addressing both numerical underrepresentation and organizational visibility, also at different levels of the organizational hierarchy. The presence of a critical mass in the organization is key (often around 30% in the case of gender), making the category much less relevant and reducing the salience of stereotypes. Indeed, studies show that critical mass protects workplace satisfaction and performance by decreasing identity concerns (Allmendinger and Hackman, 1995; Niemann and Dovidio, 1998; Inzlicht and Ben-Zeev, 2000, 2003; Sekaquaptewa and Thompson, 2002, 2003). However, increased representation is not always possible, especially in the case of true minorities (e.g., sexual minorities) and then reducing any negative salience of these identities and providing positive value to identity becomes even more important. Also, as noted, creating an identity-safe environment includes attention to members of the majority or dominant group, making sure members of dominant majority groups too are included and have their perspectives valued (see also Kaiser et al., 2013; Dover et al., 2016). Identity safety also involves scanning the workplace for an inadvertent focus on

domains traditionally associated with some (but not other) groups, and checking the necessity of this emphasis in job descriptions, organizational communications, reward structures, and organizational culture (see also, Danbold and Huo, 2017; Danbold and Bendersky, 2018). For example, the same job or task can often be described in different ways, such that it is less focused on one group's traditional qualities and therefore becomes attractive to employees from different groups. Consistent with this, describing STEM careers as more communal (i.e., stressing collaboration and apprentice or mentoring models rather than independence; stressing societal benefits) increases women's positivity toward STEM careers while not harming men's positivity (Diekman et al., 2011). Of course, these are solutions that do not challenge existing stereotypical views of who excels in which domain, and thus a long-term and broader solution involves the reduction of stereotypes through which certain domains and characteristics are automatically linked to specific groups (Eagly and Karau, 2002; Else-Quest et al., 2010).

CONCLUSION

Our current understanding of social inequality and how targets cope has followed a history from a focus on members of dominant groups as perpetrators and members of stigmatized groups as passive victims, to a focus on members of stigmatized groups as active agents regulating identity threat. Today, there is a much better understanding of how targets are affected by and deal with workplace stereotypes, prejudice, and discrimination: we know that workplaces differ in the amount and kinds of social identity threat, and how these manifest themselves in increasingly subtle ways. Members of stigmatized groups cope with these threats in various ways; protecting their goals and their well-being, motivation, and performance. Support, particularly contextual support, can play an important role in mitigating threat and supporting self-regulation. Recent research also increasingly shows the costs of threat regulation: costs for individuals, for their ingroup, and for organizations. Together, these insights provide important starting points for how organizations can more effectively reduce workplace inequalities.

AUTHOR CONTRIBUTIONS

CL wrote a first set-up and draft of the paper. LM, JV, SG, NS and CJ made adjustments and wrote additions. All authors provided literature and several rounds of feedback on different versions of the manuscript, and approved it for publication.

FUNDING

This work was supported by an Odysseus grant to CL (grant number G.O.E66.14N), a post-doctoral grant to LM (grant number 12X4718N) and a fellowship grant to JV (grant number 11A2418N), all from the Research Foundation of Flanders; and a University of Leuven Excellence Interdisciplinary Grant to CL (grant number ZKD4298).

ACKNOWLEDGMENTS

The authors would like to thank Daan Vandermeulen, Hannah Meijlaers, Sevgi Yakın, and Sarah Delcourt for their assistance.

REFERENCES

Ahlqvist, S., London, B., and Rosenthal, L. (2013). Unstable identity compatibility: how gender rejection sensitivity undermines the success of women in science, technology, engineering, and mathematics fields. *Psychol. Sci.* 24, 1644–1652. doi: 10.1177/0956797613476048

Allmendinger, J., and Hackman, J. R. (1995). The more, the better? A four-nation study of the inclusion of women in symphony orchestras. *Soc. Forces* 74, 423–460. doi: 10.1093/sf/74.2.423

Anisman-Razin, M., and Saguy, T. (2016). Reactions to tokenism: the role of individual characteristics in shaping responses to token decisions. *Eur. J. Soc. Psychol.* 46, 716–731. doi: 10.1002/ejsp.2215

Archbold, C. A., Hassell, K. D., and Stichman, A. J. (2010). Comparing promotion aspirations among female and male police officers. *Int. J. Police Sci. Manag.* 12, 287–303. doi: 10.1350/ijps.2010.12.2.175

Aronson, J., Quinn, D. M., and Spencer, S. J. (1998). "Stereotype threat and the academic underperformance of minorities and women" in *Prejudice: The target's perspective*. eds. J. K. Swim and C. Stangor (San Diego, CA: Academic Press), 83–103.

Avery, D. R., McKay, P. F., Wilson, D. C., and Tonidandel, S. (2007). Unequal attendance: The relationships between race, organizational diversity cues, and absenteeism. *Pers. Psychol.* 60, 875–902. doi: 10.1111/j.1744-6570.2007.00094.x

Avery, D. R., McKay, P. F., and Wilson, D. C. (2008). What are the odds? How demographic similarity affects the prevalence of perceived employment discrimination. *J. Appl. Psychol.* 93, 235–249. doi: 10.1037/0021-9010.93.2.235

Avery, D. R., Volpone, S. D., Mckay, P. F., King, E. B., and Wilson, D. C. (2012). Is relational demography relative? How employment status influences effects of supervisor-subordinate demographic similarity. *J. Bus. Psychol.* 27, 83–98. doi: 10.1007/s10869-011-9230-9

Avery, D. R., Volpone, S. D., Stewart, R. W., Luksyte, A., Hernandez, M., McKay, P. F., et al. (2013). Examining the draw of diversity: how diversity climate perceptions affect job-pursuit intentions. *Hum. Resour. Manag.* 52, 175–194. doi: 10.1002/hrm.21524

Bakouri, M., and Staerklé, C. (2015). Coping with structural disadvantage: overcoming negative effects of perceived barriers through bonding identities. *Br. J. Soc. Psychol.* 54, 648–670. doi: 10.1111/bjso.12102

Barreto, M. (2014). "Experiencing and coping with social stigma" in *APA handbook of personality and social psychology.* Vol. 2, eds. M. Mikulincer, P. R. Shaver, J. F. Dovidio and J. A. Simpson (Washington, DC, US: American Psychological Association), 473–506.

Barreto, M., and Ellemers, N. (2005). The perils of political correctness: men's and women's responses to old-fashioned and modern sexist views. *Soc. Psychol. Q.* 68, 75–88. doi: 10.1177/019027250506800106

Baruch-Feldman, C., Brondolo, E., Ben-Dayan, D., and Schwartz, J. (2002). Sources of social support and burnout, job satisfaction, and productivity. *J. Occup. Health Psychol.* 7, 84–93. doi: 10.1037/1076-8998.7.1.84

Baumeister, R. F., Bratslavsky, E., Muraven, M., and Tice, D. M. (1998). Ego depletion: is the active self a limited resource? *J. Pers. Soc. Psychol.* 74, 1252–1265. doi: 10.1037/0022-3514.74.5.1252

Baysu, G., Phalet, K., and Brown, R. (2014). Relative group size and minority school success: the role of intergroup friendship and discrimination experiences. *Br. J. Soc. Psychol.* 53, 328–349. doi: 10.1111/bjso.12035

Becker, J. C. (2012). The system-stabilizing role of identity management strategies: social creativity can undermine collective action for social change. *J. Pers. Soc. Psychol.* 103, 647–662. doi: 10.1037/a0029240

Becker, J. C., Glick, P., Ilic, M., and Bohner, G. (2011). Damned if she does, damned if she doesn't: consequences of accepting versus confronting patronizing help for the female target and male actor. *Eur. J. Soc. Psychol.* 41, 761–773. doi: 10.1002/ejsp.823

Becker, J. C., and Tausch, N. (2014). When group memberships are negative: the concept, measurement, and behavioral implications of psychological disidentification. *Self Identity* 13, 294–321. doi: 10.1080/15298868.2013.819991

Becker, J. C., Wright, S. C., Lubensky, M. E., and Zhou, S. (2013). Friend or ally whether cross-group contact undermines collective action depends on what advantaged group members say (or don't say). *Personal. Soc. Psychol. Bull.* 39, 442–455. doi: 10.1177/0146167213477155

Becker, J. C., Zawadzki, M. J., and Shields, S. A. (2014). Confronting and reducing sexism: a call for research on intervention. *J. Soc. Issues* 70, 603–614. doi: 10.1111/josi.12081

Begeny, C. T., and Huo, Y. J. (2017). When identity hurts: how positive intragroup experiences can yield negative mental health implications for ethnic and sexual minorities. *Eur. J. Soc. Psychol.* 47, 803–817. doi: 10.1002/ejsp.2292

Begeny, C. T., and Huo, Y. J. (2018). Is it always good to feel valued? The psychological benefits and costs of higher perceived status in one's ethnic minority group. *Group Process. Intergroup Relat.* 21, 193–213. doi: 10.1177/1368430216656922

Bell-Scriber, M. J. (2008). Nursing education research: warming the nursing education climate for traditional-age learners who are male. *Nurs. Educ. Perspect.* 29, 143–150.

Biernat, M., Vescio, T. K., and Green, M. L. (1996). Selective self-stereotyping. *J. Pers. Soc. Psychol.* 71, 1194–1209. doi: 10.1037/0022-3514.71.6.1194

Blascovich, J., Mendes, W. B., Hunter, S. B., and Lickel, B. (2000). "Stigma, threat, and social interactions" in *The social psychology of stigma*. eds. T. F. Heatherton, R. E. Kleck, M. R. Hebl and J. G. Hull (New York, NY, US: Guilford Press), 307–333.

Blascovich, J., Spencer, S. J., Quinn, D., and Steele, C. (2001). African Americans and high blood pressure: the role of stereotype threat. *Psychol. Sci.* 12, 225–229. doi: 10.1111/1467-9280.00340

Boen, F., and Vanbeselaere, N. (2000). Responding to membership of a low-status group: the effects of stablility, permeability and individual ability. *Group Process. Intergroup Relat.* 3, 41–62. doi: 10.1177/1368430200031003

Bongiorno, R., Bain, P. G., and David, B. (2014). If you're going to be a leader, at least act like it! Prejudice towards women who are tentative in leader roles. *Br. J. Soc. Psychol.* 53, 217–234. doi: 10.1111/bjso.12032

Brady, L. M., Kaiser, C. R., Major, B., and Kirby, T. A. (2015). It's fair for us: diversity structures cause women to legitimize discrimination. *J. Exp. Soc. Psychol.* 57, 100–110. doi: 10.1016/j.jesp.2014.11.010

Branscombe, N. R., Ellemers, N., Spears, R., and Doosje, B. (1999a). "The context and content of social identity threat" in *Social identity: Context, commitment, content*. eds. N. Ellemers, R. Spears and B. Doosje (Oxford, UK: Blackwell), 35–58.

Branscombe, N. R., Fernández, S., Gómez, A., and Cronin, T. (2012). "Moving toward or away from a group identity: different strategies for coping with pervasive discrimination" in *The social cure: Identity, health and well-being*. eds. J. Jetten and S. A. Haslam (New York: Psychology Press), 115–131.

Branscombe, N. R., Schmitt, M. T., and Harvey, R. D. (1999b). Perceiving pervasive discrimination among African Americans: implications for group identification and well-being. *J. Pers. Soc. Psychol.* 77, 135–149. doi: 10.1037/0022-3514.77.1.135,

Brown, K. T. (2015). Perceiving allies from the perspective of non-dominant group members: comparisons to friends and activists. *Curr. Psychol.* 34, 713–722. doi: 10.1007/s12144-014-9284-8

Burkley, A., and Blanton, H. (2008). Endorsing a negative in-group stereotype as a self-protective strategy: sacrificing the group to save the self. *J. Exp. Soc. Psychol.* 44, 37–49. doi: 10.1016/j.jesp.2007.01.008

Cadinu, M., Maass, A., Rosabianca, A., and Kiesner, J. (2005). Why do women underperform under stereotype threat? Evidence for the role of negative thinking. *Psychol. Sci.* 16, 572–578. doi: 10.1111/j.0956-7976.2005.01577.x

Carver, C. S., and Scheier, M. F. (1998). *On the self-regulation of behavior*. Cambridge: Cambridge University Press.

Carver, C. S., and Scheier, M. F. (2002). Control processes and self-organization as complementary principles underlying behavior. *Personal. Soc. Psychol. Rev.* 6, 304–315. doi: 10.1207/S15327957PSPR0604_05

Cejka, M. A., and Eagly, A. H. (1999). Gender stereotypic images of occupations correspond to the sex segregation of employment. *Personal. Soc. Psychol. Bull.* 25, 413–423. doi: 10.1177/0146167299025004002

Chaney, K. E., Sanchez, D. T., and Remedios, J. D. (2016). Organizational identity safety cue transfers. *Personal. Soc. Psychol. Bull.* 42, 1564–1576. doi: 10.1177/0146167216665096

Cheryan, S., Plaut, V. C., Davies, P. G., and Steele, C. M. (2009). Ambient belonging: how stereotypical cues impact gender participation in computer science. *J. Pers. Soc. Psychol.* 97, 1045–1060. doi: 10.1037/a0016239

Cheryan, S., Ziegler, S. A., Montoya, A. K., and Jiang, L. (2017). Why are some STEM fields more gender balanced than others? *Psychol. Bull.* 143, 1–35. doi: 10.1037/bul0000052

Choi, S., and Rainey, H. G. (2013). Organizational fairness and diversity management in public organizations: does fairness matter in managing diversity? *Rev. Public Pers. Adm.* 34, 307–331. doi: 10.1177/0734371X13486489

Cihangir, S., Barreto, M., and Ellemers, N. (2014). Men as allies against sexism: the positive effects of a suggestion of sexism by male (vs. female) sources. *SAGE Open* 4, 1–12. doi: 10.1177/2158244014539168

Cochran, M. M., and Brassard, J. A. (1979). Child development and personal social networks. *Child Dev.* 50, 601–616. doi: 10.2307/1128926

Cohen, G. L., and Garcia, J. (2005). "I Am Us": negative stereotypes as collective threats. *J. Pers. Soc. Psychol.* 89, 566–582. doi: 10.1037/0022-3514.89.4.566

Cohen, L. L., and Swim, J. K. (1995). The differential impact of gender ratios on women and men: tokenism, self-confidence, and expectations. *Personal. Soc. Psychol. Bull.* 21, 876–884. doi: 10.1177/0146167295219001

Cohen, S., Underwood, L. G., and Gottlieb, B. H. (2000). *Social support measurement and intervention*. New York: Oxford University Press.

Cohen, S., and Wills, T. A. (1985). Stress, social support, and the buffering hypothesis. *Psychol. Bull.* 98, 310–357. doi: 10.1037/0033-2909.98.2.310

Cole, E. R. (2009). Intersectionality and research in psychology. *Am. Psychol.* 64, 170–180. doi: 10.1037/a0014564

Compas, B. E., Connor-Smith, J. K., Saltzman, H., Thomsen, A. H., and Wadsworth, M. E. (2001). Coping with stress during childhood and adolescence: problems, progress, and potential in theory and research. *Psychol. Bull.* 127, 87–127. doi: 10.1037/0033-2909.127.1.87

Connor-Smith, J. K., Compas, B. E., Wadsworth, M. E., Thomsen, A. H., and Saltzman, H. (2000). Responses to stress in adolescence: measurement of coping and involuntary stress responses. *J. Consult. Clin. Psychol.* 68, 976–992. doi: 10.1037/0022-006X.68.6.976

Correll, J., and Park, B. (2005). A model of the ingroup as a social resource. *Personal. Soc. Psychol. Rev.* 9, 341–359. doi: 10.1207/s15327957pspr0904_4

Cortina, L. (2008). Unseen injustice: incivility as modern discrimination in organizations. *Acad. Manag. Rev.* 33, 55–75. doi: 10.5465/amr.2008.27745097

Crandall, C. S., Merman, A., and Hebl, M. (2009). "Anti-fat prejudice" in *Handbook of prejudice, stereotyping, and discrimination*. ed. T. D. Nelson (New York, NY: Psychology Press), 469–487.

Creed, W. E. D. (2006). "Seven conversations about the same thing: homophobia and heterosexism in the workplace" in *Handbook of workplace diversity*. eds. A. M. Konrad, P. Prasad and J. K. Pringle (Thousand Oaks, CA: Sage Publications), 371–400.

Crisp, R. J., Bache, L. M., and Maitner, A. T. (2009). Dynamics of social comparison in counter-stereotypic domains: stereotype boost, not stereotype threat, for women engineering majors. *Soc. Influ.* 4, 171–184. doi: 10.1080/15534510802607953

Crocker, J., and Major, B. (1989). Social stigma and self-esteem: the self-protective properties of stigma. *Psychol. Rev.* 96, 608–630. doi: 10.1037/0033-295X.96.4.608

Crocker, J., Major, B., and Steele, C. M. (1998). "Social stigma" in *The handbook of social psychology.* Vol. 4, eds. D. T. Gilbert, S. T. Fiske and G. Lindzey (Boston, MA: Mcgraw-Hill), 504–553.

Croft, A., Schmader, T., and Block, K. (2015). An underexamined inequality: cultural and psychological barriers to men's engagement with communal roles. *Personal. Soc. Psychol. Rev.* 19, 343–370. doi: 10.1177/1088868314564789

Crosby, F. J., Cordova, D. I., and Jaskar, K. (1993). "On the failure to see oneself as disadvantaged: cognitive and emotional components" in *Group motivation: Social psychological perspectives*. eds. M. A. Hogg and D. Abrams (London, UK: Harvester Wheatsheaf), 87–104.

Czopp, A. M., and Monteith, M. J. (2003). Confronting prejudice (literally): reactions to confrontations of racial and gender bias. *Personal. Soc. Psychol. Bull.* 29, 532–544. doi: 10.1177/0146167202250923

Czopp, A. M., Monteith, M. J., and Mark, A. Y. (2006). Standing up for a change: reducing bias through interpersonal confrontation. *J. Pers. Soc. Psychol.* 90, 784–803. doi: 10.1037/0022-3514.90.5.784

Danbold, F., and Bendersky, C. (2018). Inverting professional prototypes increases the valuation of women in male-dominated professions. *Acad. Manag. Proc.* 2018:17406. doi: 10.5465/AMBPP.2018.200

Danbold, F., and Huo, Y. J. (2017). Men's defense of their prototypicality undermines the success of women in STEM initiatives. *J. Exp. Soc. Psychol.* 72, 57–66. doi: 10.1016/j.jesp.2016.12.014

Dasgupta, N. (2011). Ingroup experts and peers as social vaccines who inoculate the self-concept: the stereotype inoculation model. *Psychol. Inq.* 22, 231–246. doi: 10.1080/1047840X.2011.607313

Davies, P. G., Spencer, S. J., and Steele, C. M. (2005). Clearing the air: identity safety moderates the effects of stereotype threat on women's leadership aspirations. *J. Pers. Soc. Psychol.* 88, 276–287. doi: 10.1037/0022-3514.88.2.276

De Lemus, S., Bukowski, M., Spears, R., and Telga, M. (2015). Reactance to (or acceptance of) stereotypes: implicit and explicit responses to group identity threat. *J. Psychol.* 223, 236–246. doi: 10.1027/2151-2604/a000225

De Lemus, S., Spears, R., Bukowski, M., Moya, M., and Lupiáñez, J. (2013). Reversing implicit gender stereotype activation as a function of exposure to traditional gender roles. *Soc. Psychol.* 44, 109–116. doi: 10.1027/1864-9335/a000140

De Lemus, S., Spears, R., Van Breen, J. A., and Telga, M. (2016). "Coping with identity threat: from implicit resistance to active control" in *Coping with lack of control in a social world*. eds. M. Bukowski, I. Fritsche, A. Guinote and M. Kofta (London: Routledge), 151–169.

Deaux, K., and Lafrance, M. (1998). "Gender" in *The handbook of social psychology*. Vol. 2, eds. D. Gilbert, S. Fiske and G. Lindzey (New York, NY: McGraw-Hill), 788–827.

Dennehy, T. C., and Dasgupta, N. (2017). Female peer mentors early in college increase women's positive academic experiences and retention in engineering. *Proc. Natl. Acad. Sci. USA* 114, 5964–5969. doi: 10.1073/pnas.1613117114

Derks, B., Ellemers, N., Van Laar, C., and de Groot, K. (2011a). Do sexist organizational cultures create the queen bee? *Br. J. Soc. Psychol.* 50, 519–535. doi: 10.1348/014466610X525280

Derks, B., Scheepers, D., Van Laar, C., and Ellemers, N. (2011b). The threat vs. the challenge of car parking for women: how self-group and group affirmation affect cardiovascular responses. *J. Exp. Soc. Psychol.* 47, 178–183. doi: 10.1016/j.jesp.2010.08.016

Derks, B., Van Laar, C., and Ellemers, N. (2006). Striving for success in outgroup settings: effects of contextually emphasizing ingroup dimensions on stigmatized group members' social identity and performance styles. *Personal. Soc. Psychol. Bull.* 32, 576–588. doi: 10.1177/0146167205283336

Derks, B., Van Laar, C., and Ellemers, N. (2007a). Social creativity strikes back: improving motivated performance of low status group members by valuing ingroup dimensions. *Eur. J. Soc. Psychol.* 37, 490–493. doi: 10.1002/ejsp.375

Derks, B., Van Laar, C., and Ellemers, N. (2007b). The beneficial effects of social identity protection on the performance motivation of members of devalued groups. *Soc. Issues Policy Rev.* 1, 217–256. doi: 10.1111/j.1751-2409.2007.00008.x

Derks, B., Van Laar, C., and Ellemers, N. (2009). Working for the self or working for the group: how self- versus group affirmation affects collective behavior in low-status groups. *J. Pers. Soc. Psychol.* 96, 183–202. doi: 10.1037/a0013068

Derks, B., Van Laar, C., and Ellemers, N. (2016). The queen bee phenomenon: why women leaders distance themselves from junior women. *Leadersh. Q.* 27, 456–469. doi: 10.1016/j.leaqua.2015.12.007

Derks, B., Van Laar, C., Ellemers, N., and de Groot, K. (2011c). Gender-bias primes elicit queen-bee responses among senior policewomen. *Psychol. Sci.* 22, 1243–1249. doi: 10.1177/0956797611417258

Derks, B., Van Laar, C., Ellemers, N., and Raghoe, G. (2015). Extending the queen bee effect: how Hindustani workers cope with disadvantage by distancing the self from the group. *J. Soc. Issues* 71, 476–496. doi: 10.1111/josi.12124

Diekman, A. B., Clark, E. K., Johnston, A. M., Brown, E. R., and Steinberg, M. (2011). Malleability in communal goals and beliefs influences attraction to stem careers: evidence for a goal congruity perspective. *J. Pers. Soc. Psychol.* 101, 902–918. doi: 10.1037/a0025199

Diekman, A. B., and Hirnisey, L. (2007). The effect of context on the silver ceiling: a role congruity perspective on prejudiced responses. *Personal. Soc. Psychol. Bull.* 33, 1353–1366. doi: 10.1177/0146167207303019

Dobbin, F., and Kalev, A. (2013). "The origins and effects of corporate diversity programs" in *Oxford handbook of diversity and work*. ed. Q. M. Roberson (New York, NY: Oxford University Press), 253–281.

Dobbin, F., and Kalev, A. (2018). Why diversity training doesn't work: the challenge for industry and academia. *Anthropol. Now* 10, 48–55. doi: 10.1080/19428200.2018.1493182

Dover, T., Major, B., and Kaiser, C. R. (2014). Diversity initiatives, status, and system-justifying beliefs: when and how diversity efforts de-legitimize discrimination claims. *Group Process. Intergroup Relat.* 17, 485–493. doi: 10.1177/1368430213502560

Dover, T., Major, B., and Kaiser, C. (2016). Members of high-status groups are threatened by pro-diversity organizational messages. *J. Exp. Soc. Psychol.* 62, 58–67. doi: 10.1016/j.jesp.2015.10.006,

Dovidio, J. F. (2001). On the nature of contemporary prejudice: the third wave. *J. Soc. Issues* 57, 829–849. doi: 10.1111/0022-4537.00244

Dovidio, J. F., Gaertner, S. L., and Kawakami, K. (2010a). "Racism" in *The SAGE handbook of prejudice, stereotyping, and discrimination*. eds. J. F. Dovidio, M. Hewstone, P. Glick and V. M. Esses (London, UK: Sage), 312–327.

Dovidio, J. F., Hewstone, M., Glick, P., and Esses, V. M. (2010b). "Prejudice, stereotyping and discrimination: theoretical and empirical overview" in *The SAGE handbook of prejudice, stereotyping, and discrimination*. eds. J. F. Dovidio, M. Hewstone, P. Glick and V. M. Esses (London, UK: Sage), 3–28.

Droogendyk, L., Wright, S. C., Lubensky, M., and Louis, W. R. (2016). Acting in solidarity: cross-group contact between disadvantaged group members and advantaged group allies. *J. Soc. Issues* 72, 315–334. doi: 10.1111/josi.12168

Drury, B. J., and Kaiser, C. R. (2014). Allies against sexism: the role of men in confronting sexism. *J. Soc. Issues* 70, 637–652. doi: 10.1111/josi.12083,

Duguid, M. (2011). Female tokens in high-prestige work groups: catalysts or inhibitors of group diversification? *Organ. Behav. Hum. Decis. Process.* 116, 104–115. doi: 10.1016/j.obhdp.2011.05.009

Eagly, A. H. (2016). When passionate advocates meet research on diversity, does the honest broker stand a chance? *J. Soc. Issues* 72, 199–222. doi: 10.1111/josi.12163

Eagly, A. H., and Karau, S. J. (2002). Role congruity theory of prejudice toward female leaders. *Psychol. Rev.* 109, 573–598. doi: 10.1037/0033-295X.109.3.573

Eccles, J. S. (1994). Understanding women's educational and occupational choices: applying the Eccles et al. model of achievement-related choices. *Psychol. Women Q.* 18, 585–609. doi: 10.1111/j.1471-6402.1994.tb01049.x

Eguchi, S. (2009). Negotiating hegemonic masculinity: the rhetorical strategy of "straight-acting" among gay men. *J. Intercult. Commun. Res.* 38, 193–209. doi: 10.1080/17475759.2009.508892

Eliezer, D., and Major, B. (2012). It's not your fault: the social costs of claiming discrimination on behalf of someone else. *Group Process. Intergroup Relat.* 15, 487–502. doi: 10.1177/1368430211432894

Ellemers, N., and Barreto, M. (2015). Modern discrimination: how perpetrators and targets interactively perpetuate social disadvantage. *Curr. Opin. Behav. Sci.* 3, 142–146. doi: 10.1016/j.cobeha.2015.04.001

Ellemers, N., and Rink, F. (2016). Diversity in work groups. *Curr. Opin. Psychol.* 11, 49–53. doi: 10.1016/j.copsyc.2016.06.001

Ellemers, N., Spears, R., and Doosje, B. (1999). *Social identity: Context, commitment, content*. Oxford, UK: Blackwell.

Ellemers, N., Spears, R., and Doosje, B. (2002). Self and social identity. *Annu. Rev. Psychol.* 53, 161–186. doi: 10.1146/annurev.psych.53.100901.135228

Ellemers, N., van den Heuvel, H., de Gilder, D., Maass, A., and Bonvini, A. (2004). The underrepresentation of women in science: differential commitment or the queen bee syndrome? *Br. J. Soc. Psychol.* 43, 315–338. doi: 10.1348/0144666042037999

Ellemers, N., and Van Laar, C. (2010). "Individual mobility" in *The SAGE handbook of prejudice, stereotyping, and discrimination*. eds. J. Dovidio, M. Hewstone, P. Glick and V. Esses (London, UK: Sage), 561–576.

Else-Quest, N. M., Hyde, J. S., and Linn, M. C. (2010). Cross-national patterns of gender differences in mathematics: a meta-analysis. *Psychol. Bull.* 136, 103–127. doi: 10.1037/a0018053

Emerson, K. T. U., and Murphy, M. C. (2014). Identity threat at work: how social identity threat and situational cues contribute to racial and ethnic disparities in the workplace. *Cult. Divers. Ethn. Minor. Psychol.* 20, 508–520. doi: 10.1037/a0035403

Emina, S., Hardacre, S., Elton, B., Branscombe, N. R., Ryan, M. K., and Reynolds, K. J. (2018). "We for She": mobilising men and women to act in solidarity for gender equality. *Group Process. Intergroup Relat.* 21, 707–724. doi: 10.1177/1368430218763272

Faniko, K., Ellemers, N., Derks, B., and Lorenzi-Cioldi, F. (2017). Nothing changes, really: why women who break through the glass ceiling end up reinforcing it. *Personal. Soc. Psychol. Bull.* 43, 638–651. doi: 10.1177/0146167217695551

Fingerhut, A. W. (2011). Straight allies: what predicts heterosexuals' alliance with the LGBT community? *J. Appl. Soc. Psychol.* 41, 2230–2248. doi: 10.1111/j.1559-1816.2011.00807.x

Fiske, S. T. (2004). *Social Beings: A core motives approach to social psychology*. New York: Wiley.

Fiske, S. T. (2008). "Core social motivations: views from the couch, consciousness, classroom, computers, and collectives" in *Handbook of motivation science*. eds. J. Y. Shah and W. L. Gardner (New York, NY, US: Guilford Press), 3–22.

Fiske, S. T., Bersoff, D. N., Borgida, E., Deaux, K., and Heilman, M. E. (1991). Social science research on trial: use of sex stereotyping research in Price Waterhouse v. Hopkins. *Am. Psychol.* 46, 1049–1060. doi: 10.1037/0003-066X.46.10.1049

Fiske, S. T., Cuddy, A. J. C., Glick, P., and Xu, J. (2002). A model of (often mixed) stereotype content: competence and warmth respectively follow from perceived status and competition. *J. Pers. Soc. Psychol.* 82, 878–902. doi: 10.1037/0022-3514.82.6.878

Frable, D. E. S., Platt, L., and Hoey, S. (1998). Concealable stigmas and positive self-perceptions: feeling better around similar others. *J. Pers. Soc. Psychol.* 74, 909–922. doi: 10.1037/0022-3514.74.4.909

Frey, F. E., and Tropp, L. R. (2006). Being seen as individuals versus as group members: extending research on metaperception to intergroup contexts. *Personal. Soc. Psychol. Rev.* 10, 265–280. doi: 10.1207/s15327957pspr1003_5

Gabriel, A. S., Butts, M. M., Yuan, Z., Rosen, R. L., and Sliter, M. T. (2017). Further understanding incivility in the workplace: the effects of gender, agency, and communion. *J. Appl. Psychol.* 103, 362–382. doi: 10.1037/apl0000289

Garcia, J. A., and Crocker, J. (2008). Reasons for disclosing depression matter: the consequences of having egosystem and ecosystem goals. *Soc. Sci. Med.* 67, 453–462. doi: 10.1016/j.socscimed.2008.03.016

Gaucher, D., Friesen, J., and Kay, A. C. (2011). Evidence that gendered wording in job advertisements exists and sustains gender inequality. *J. Pers. Soc. Psychol.* 101, 109–128. doi: 10.1037/a0022530

Gervais, S. J., and Hillard, A. L. (2014). Confronting sexism as persuasion: effects of a confrontation's recipient, source, message, and context. *J. Soc. Issues* 70, 653–667. doi: 10.1111/josi.12084

Ghavami, N., Fingerhut, A., Peplau, L. A., Grant, S. K., and Wittig, M. A. (2011). Testing a model of minority identity achievement, identity affirmation, and psychological well-being among ethnic minority and sexual minority individuals. *Cultur. Divers. Ethnic Minor. Psychol.* 17, 79–88. doi: 10.1037/a0022532

Goldman, B. M., and Kernis, M. H. (2002). The role of authenticity in healthy psychological functioning and subjective well-being. *Ann. Am. Psychother. Assoc.* 5, 18–20.

Gonzalez, J. A., and Denisi, A. S. (2009). Cross-level effects of demography and diversity climate on organizational attachment and firm effectiveness. *J. Organ. Behav.* 30, 21–40. doi: 10.1002/job.498

Good, J. J., Sanchez, D. T., and Moss-Racusin, C. A. (2018). A paternalistic duty to protect? Predicting men's decisions to confront sexism. *Psychol. Men Masculinity* 19, 14–24. doi: 10.1037/men0000077

Grimm, L. R., Markman, A. B., Maddox, W. T., and Baldwin, G. C. (2009). Stereotype threat reinterpreted as a regulatory mismatch. *J. Pers. Soc. Psychol.* 96, 288–304. doi: 10.1037/a0013463

Gündemir, S., and Galinsky, A. D. (2017). Multicolored blindfolds: how organizational multiculturalism can conceal racial discrimination and delegitimize racial discrimination claims. *Soc. Psychol. Personal. Sci.* 9, 825–834. doi: 10.1177/1948550617726830

Gündemir, S., Homan, A. C., Usova, A., and Galinsky, A. D. (2017). Multicultural meritocracy: the synergistic benefits of valuing diversity and merit. *J. Exp. Soc. Psychol.* 73, 34–41. doi: 10.1016/j.jesp.2017.06.002

Hall, W., Schmader, T., Aday, A., and Croft, E. (2019). Decoding the dynamics of social identity threat in the workplace: a within-person analysis of women's and men's interactions in STEM. *Soc. Psychol. Personal. Sci.* 10, 542–552. doi: 10.1177/1948550618772582

Hall, W., Schmader, T., Aday, A., Inness, M., and Croft, E. (2018). Climate control: the relationship between social identity threat and cues to an identity-safe culture. *J. Pers. Soc. Psychol.* 115, 446–467. doi: 10.1037/pspi0000137

Hall, W. M., Schmader, T., and Croft, A. (2015). Engineering exchanges: daily social identity threat predicts burnout among female engineers. *Soc. Psychol. Personal. Sci.* 6, 528–534. doi: 10.1177/1948550615572637

Hartman, H., and Hartman, M. (2008). How undergraduate engineering students perceive women's (and men's) problems in science, math and engineering. *Sex Roles* 58, 251–265. doi: 10.1007/s11199-007-9327-9

Haslam, S. A., O'Brien, A., Jetten, J., Vormedal, K., and Penna, S. (2005). Taking the strain: social identity, social support, and the experience of stress. *Br. J. Soc. Psychol.* 44, 355–370. doi: 10.1348/014466605X37468

Hebl, M. R., Foster, J. B., Mannix, L. M., and Dovidio, J. F. (2002). Formal and interpersonal discrimination: a field study of bias toward homosexual applicants. *Personal. Soc. Psychol. Bull.* 28, 815–825. doi: 10.1177/0146167202289010

Hebl, M. R. M., Law, C. L., and King, E. (2010). "Heterosexism" in *The SAGE handbook of prejudice, stereotyping and discrimination*. eds. J. F. Dovidio, M. Hewstone, P. Glick and V. M. Esses London, UK: Sage. 345–360.

Heilman, M. E. (1983). "Sex bias in work settings: the lack of fit model" in *Research in organizational behavior*. Vol. 5, eds. B. Staw and L. Cummings, (Greenwich, CT: JAI Press), 269–298.

Heilman, M. E. (2012). Gender stereotypes and workplace bias. *Res. Organ. Behav.* 32, 113–135. doi: 10.1016/j.riob.2012.11.003

Hentschel, T., Shemla, M., Wegge, J., and Kearney, E. (2013). Perceived diversity and team functioning: the role of diversity beliefs and affect. *Small Group Res.* 44, 33–61. doi: 10.1177/1046496412470725

Herek, G. M. (2009). "Sexual prejudice" in *Handbook of prejudice, stereotyping, and discrimination*. ed. T. D. Nelson (New York, NY, US: Psychology Press), 441–467.

Hersby, M. D., Ryan, M. K., and Jetten, J. (2009). Getting together to get ahead: the impact of social structure on women's networking. *Br. J. Manag.* 20, 415–430. doi: 10.1111/j.1467-8551.2008.00604.x

Higgins, E. T. (2012). Beyond pleasure and pain: how motivation works. *Am. Psychol.* 52, 1280–1300. doi: 10.1093/acprof:oso/9780199765829.001.0001

Hornsey, M. J., and Imani, A. (2004). Criticizing groups from the inside and the outside: an identity perspective on the intergroup sensitivity effect. *Personal. Soc. Psychol. Bull.* 30, 365–383. doi: 10.1177/0146167203261295

Hornsey, M. J., Oppes, T., and Svensson, A. (2002). "It's OK if we say it, but you can't": responses to intergroup and intragroup criticism. *Eur. J. Soc. Psychol.* 32, 293–307. doi: 10.1002/ejsp.90

House, J. S., Umberson, D., and Landis, K. R. (1988). Structures and processes of social support. *Annu. Rev. Sociol.* 14, 293–318. doi: 10.1146/annurev.so.14.080188.001453

Hoyt, C. L., and Blascovich, J. (2007). Leadership efficacy and women leaders' responses to stereotype activation. *Group Process. Intergroup Relat.* 10, 595–616. doi: 10.1177/1368430207084718

Hoyt, C. L., and Blascovich, J. (2010). The role of leadership self-efficacy and stereotype activation on cardiovascular, behavioral and self-report responses in the leadership domain. *Leadersh. Q.* 21, 89–103. doi: 10.1016/j.leaqua.2009.10.007

Hunt, C. J., Fasoli, F., Carnaghi, A., and Cadinu, M. (2016). Masculine self-presentation and distancing from femininity in gay men: an experimental examination of the role of masculinity threat. *Psychol. Men Masculinity* 17, 108–112. doi: 10.1037/a0039545

Huo, Y. J., and Molina, L. E. (2006). Is pluralism a viable model of diversity? The benefits and limits of subgroup respect. *Group Process. Intergroup Relat.* 9, 359–376. doi: 10.1177/1368430206064639

Inzlicht, M., and Ben-Zeev, T. (2000). A threatening intellectual environment: why females are susceptible to experiencing problem-solving deficits in the presence of males. *Psychol. Sci.* 11, 365–371. doi: 10.1111/1467-9280.00272

Inzlicht, M., and Ben-Zeev, T. (2003). Do high-achieving female students underperform in private? The implications of threatening environments on intellectual processing. *J. Educ. Psychol.* 95, 796–805. doi: 10.1037/0022-0663.95.4.796

Inzlicht, M., and Legault, L. (2014). "No pain, no gain: how distress underlies effective self-control (and unites diverse social psychological phenomena)"

in *Sydney symposium of social psychology. Motivation and its regulation: The control within*. eds. J. P. Forgas and E. Harmon-Jones (New York, NY: Psychology Press), 115–132.

Inzlicht, M., and Schmader, T. (2012). *Stereotype threat: Theory, process, and application*. New York, NY: Oxford University Press.

Inzlicht, M., Tullett, A. M., Legault, L., and Kang, S. K. (2011). Lingering effects: stereotype threat hurts more than you think. *Soc. Issues Policy Rev.* 5, 227–256. doi: 10.1111/j.1751-2409.2011.01031.x

Iyer, A., and Ryan, M. K. (2009). Why do men and women challenge gender discrimination in the workplace? The role of group status and in-group identification in predicting pathways to collective action. *J. Soc. Issues* 65, 791–814. doi: 10.1111/j.1540-4560.2009.01625.x

Jackson, P., Thoits, P., and Taylor, H. (1995). Composition of the workplace and psychological well-being: the effects of tokenism on America's black elite. *Soc. Forces* 74, 543–557. doi: 10.1093/sf/74.2.543

Jetten, J., Haslam, C., Haslam, S. A., Dingle, G., and Jones, J. M. (2014). How groups affect our health and well-being: the path from theory to policy. *Soc. Issues Policy Rev.* 8, 103–130. doi: 10.1111/sipr.12003

Johns, M., Inzlicht, M., and Schmader, T. (2008). Stereotype threat and executive resource depletion: examining the influence of emotion regulation. *J. Exp. Psychol. Gen.* 137, 691–705. doi: 10.1037/a0013834

Johnson, S. E., Mitchell, M. A., Bean, M. G., Richeson, J. A., and Shelton, J. N. (2010). Gender moderates the self-regulatory consequences of suppressing emotional reactions to sexism. *Group Process. Intergroup Relat.* 13, 215–226. doi: 10.1177/1368430209344867

Jones, K. P., Peddie, C. I., Gilrane, V. L., King, E. B., and Gray, A. L. (2016). Not so subtle: a meta-analytic investigation of the correlates of subtle and overt discrimination. *J. Manag.* 42, 1588–1613. doi: 10.1177/0149206313506466

Kaiser, C. R. (2006). "Dominant ideology threat and the interpersonal consequences of attributions to discrimination" in *Stigma and group inequality: Social psychological approaches*. eds. S. Levin and C. Van Laar (Mahwah, NJ: Lawrence Erlbaum), 45–64.

Kaiser, C. R., Major, B., Jurcevic, I., Dover, T. L., Brady, L. M., and Shapiro, J. R. (2013). Presumed fair: ironic effects of organizational diversity structures. *J. Pers. Soc. Psychol.* 104, 504–519. doi: 10.1037/a0030838

Kaiser, C. R., and Miller, C. T. (2003). Derogating the victim: the interpersonal consequences of blaming events on discrimination. *Group Process. Intergroup Relat.* 6, 227–237. doi: 10.1177/13684302030063001

Kaiser, C. R., and Spalding, K. E. (2015). Do women who succeed in male-dominated domains help other women? The moderating role of gender identification. *Eur. J. Soc. Psychol.* 45, 599–608. doi: 10.1002/ejsp.2113

Kaiser, C. R., Vick, S. B., and Major, B. (2006). Prejudice expectations moderate preconscious attention to cues that are threatening to social identity. *Psychol. Sci.* 17, 332–338. doi: 10.1111/j.1467-9280.2006.01707.x

Kalev, A., Dobbin, F., and Kelly, E. (2006). Best practices or best guesses? Assessing the efficacy of corporate affirmative action and diversity policies. *Am. Sociol. Rev.* 71, 589–617. doi: 10.1177/000312240607100404

Kalokerinos, E., Kjelsaas, K., Bennetts, S., and Hippel, C. (2017). Men in pink collars: stereotype threat and disengagement among male teachers and child protection workers. *Eur. J. Soc. Psychol.* 47, 553–565. doi: 10.1002/ejsp.2246,

Kalokerinos, E. K., von Hippel, C., and Zacher, H. (2014). Is stereotype threat a useful construct for organizational psychology research and practice? *Ind. Organ. Psychol.* 7, 381–402. doi: 10.1111/iops.12167

Keller, J. (2007). When negative stereotypic expectancies turn into challenge or threat: the moderating role of regulatory focus. *Swiss J. Psychol.* 66, 163–168. doi: 10.1024/1421-0185.66.3.163

Kirby, T. A., Kaiser, C. R., and Major, B. (2015). Insidious procedures: diversity awards legitimize unfair organizational practices. *Soc. Justice Res* 28, 169–186. doi: 10.1007/s11211-015-0240-z

Koch, S., Holland, R. W., Hengstler, M., and Van Knippenberg, A. (2009). Body locomotion as regulatory process: stepping backward enhances cognitive control. *Psychol. Sci.* 20, 549–550. doi: 10.1111/j.1467-9280.2009.02342.x

Koch, S., Holland, R. W., and Van Knippenberg, A. (2008). Regulating cognitive control through approach-avoidance motor actions. *Cognition* 109, 133–142. doi: 10.1016/j.cognition.2008.07.014

Koenig, A. M., and Eagly, A. H. (2014). Extending role congruity theory of prejudice to men and women with sex-typed mental illnesses. *Basic Appl. Soc. Psychol.* 36, 70–82. doi: 10.1080/01973533.2013.856789

Kogan, S. M., Yu, T., Allen, K. A., and Brody, G. H. (2015). Racial microstressors, racial self-concept, and depressive symptoms among male African Americans during the transition to adulthood. *J. Youth Adolesc.* 44, 898–909. doi: 10.1007/s10964-014-0199-3

Kossek, E. E., Su, R., and Wu, L. (2016). "Opting out" or "pushed out"? Integrating perspectives on womens career equality for gender inclusion and interventions. *J. Manag.* 43, 1–27. doi: 10.1177/0149206316671582

Latrofa, M., Vaes, J., and Cadinu, M. (2012). Self-stereotyping: the central role of an ingroup threatening identity. *J. Soc. Psychol.* 152, 92–111. doi: 10.1080/00224545.2011.565382

Lazarus, R. S., and Folkman, S. (1984a). "Coping and adaptation" in *The Handbook of behavioral medicine*. ed. W. D. Gentry (New York: Guilford), 282–325.

Lazarus, R. S., and Folkman, S. (1984b). *Stress, appraisal, and coping*. New York, NY: Springer.

Leach, C. W., and Livingston, A. G. (2015). Contesting the meaning of inter-group disadvantage: towards a psychology of resistance. *J. Soc. Issues* 71, 614–632. doi: 10.1111/josi.12131

Leicht, C., Goclowska, M. A., Van Breen, J. A., de Lemus, S., and de Moura, G. R. (2017). Counter-stereotypes and feminism promote leadership aspirations in highly identified women. *Front. Psychol.* 8:883. doi: 10.3389/fpsyg.2017.00883

Levin, S., Van Laar, C., and Foote, W. (2006). Ethnic segregation and perceived discrimination in college: mutual influences and effects on social and academic life. *J. Appl. Soc. Psychol.* 36, 1471–1501. doi: 10.1111/j.0021-9029.2006.00068.x

Liao, H., Joshi, A., and Chuang, A. (2004). Sticking out like a sore thumb: employee dissimilarity and deviance at work. *Pers. Psychol.* 57, 969–1000. doi: 10.1111/j.1744-6570.2004.00012.x

Lockwood, P. (2006). "Someone like me can be successful": do college students need same-gender role models? *Psychol. Women Q.* 30, 36–46. doi: 10.1111/j.1471-6402.2006.00260.x

Lockwood, P., and Kunda, Z. (1999). Increasing the salience of one's best selves can undermine inspiration by outstanding role models. *J. Pers. Soc. Psychol.* 76, 214–228. doi: 10.1037/0022-3514.76.2.214

Logel, C., Iserman, E. C., Davies, P. G., Quinn, D. M., and Spencer, S. J. (2009). The perils of double consciousness: the role of thought suppression in stereotype threat. *J. Exp. Soc. Psychol.* 45, 299–312. doi: 10.1016/j.jesp.2008.07.016

London, B., Rosenthal, L., and Gonzalez, A. (2011a). Assessing the role of gender rejection sensitivity, identity, and support on the academic engagement of women in nontraditional fields using experience sampling methods. *J. Soc. Issues* 67, 510–530. doi: 10.1111/j.1540-4560.2011.01712.x

London, B., Rosenthal, L., Levy, S. R., and Lobel, M. (2011b). The influences of perceived identity compatibility and social support on women in nontraditional fields during the college transition. *Basic Appl. Soc. Psychol.* 33, 304–321. doi: 10.1080/01973533.2011.614166

Luijters, K., van der Zee, K. I., and Otten, S. (2008). Cultural diversity in organizations: enhancing identification by valuing differences. *Int. J. Intercult. Relat.* 32, 154–163. doi: 10.1016/j.ijintrel.2007.09.003

Lyness, K. S., and Heilman, M. E. (2006). When fit is fundamental: performance evaluations and promotions of upper-level female and male managers. *J. Appl. Psychol.* 91, 777–785. doi: 10.1037/0021-9010.91.4.777

Major, B., and O'Brien, L. T. (2005). The social psychology of stigma. *Annu. Rev. Psychol.* 56, 393–421. doi: 10.1146/annurev.psych.56.091103.070137

Marques, J., and Paez, D. (1994). The 'black sheep effect': social categorization, rejection of ingroup deviates, and perception of group variability. *Eur. Rev. Soc. Psychol.* 5, 37–68. doi: 10.1080/14792779543000011

Marx, D. M., Ko, S. J., and Friedman, R. A. (2009). The "Obama effect": how a salient role model reduces race-based performance differences. *J. Exp. Soc. Psychol.* 45, 953–956. doi: 10.1016/j.jesp.2009.03.012

Marx, D. M., and Roman, J. S. (2002). Female role models: protecting women's math test performance. *Personal. Soc. Psychol. Bull.* 28, 1183–1193. doi: 10.1177/01461672022812004

McIntyre, R. B., Lord, C. G., Gresky, D. M., Ten Eyck, L. L., Frye, G. D. J., and Bond, C. F. (2005). A social impact trend in the effects of role models on alleviating women's mathematics stereotype threat. *Curr. Res. Soc. Psychol.* 10, 116–136.

McIntyre, R. B., Paulson, R. M., and Lord, C. G. (2003). Alleviating women's mathematics stereotype threat through salience of group achievements. *J. Exp. Soc. Psychol.* 39, 83–90. doi: 10.1016/S0022-1031(02)00513-9

McLeroy, K. R., Gottlieb, N. H., and Heaney, C. A. (2001). "Social health" in *Health promotion in the workplace*. 3rd Edn. eds. M. P. O'Donnell and J. S. Harris (Albany, NY: Delmar).

Meeussen, L., Otten, S., and Phalet, K. (2014). Managing diversity: how leaders' multiculturalism and colorblindness affect work group functioning. *Group Process. Intergroup Relat.* 17, 629–644. doi: 10.1177/1368430214525809

Meeussen, L., Van Laar, C., and Van Grootel, S. (2019). How to foster male engagement tin traditionally female communal roles and occupations: Insights from research on gender norms and precarious manhood. To appear in: Social Issues and Policy Review.

Mendes, W. B., and Jamieson, J. (2012). "Embodied stereotype threat: exploring brain and body mechanisms underlying performance impairment" in *Stereotype threat: Theory, process, and application*. eds. M. Inzlicht and T. Schmader (New York, NY: Oxford University Press), 51–68.

Miller, C. T. (2006). "Social psychological perspectives on coping with stressors related to stigma" in *Stigma and group inequality: Social psychological approaches*. eds. S. Levin and C. Van Laar (Mahwah: Lawrence Erlbaum Associates Publishers), 21–44.

Miller, C. T., and Kaiser, C. R. (2001). A theoretical perspective on coping with stigma. *J. Soc. Issues* 57, 73–92. doi: 10.1111/0022-4537.00202

Miller, C. T., and Major, B. (2000). "Coping with stigma and prejudice" in *The social psychology of stigma*. eds. T. F. Heatherton, R. E. Kleck, M. R. Hebl and J. G. Hull (New York, NY, US: The Guilford Press), 243–272.

Morgenroth, T., Ryan, M. K., and Peters, K. (2015). The motivational theory of role modeling: how role models influence role aspirants' goals. *Rev. Gen. Psychol.* 19, 465–483. doi: 10.1037/gpr0000059

Moss-Racusin, C. A., Van Der Toorn, J., Dovidio, J. F., Brescoll, V. L., Graham, M. J., and Handelsman, J. (2014). Scientific diversity interventions. *Science* 343, 615–616. doi: 10.1126/science.1245936

Muraven, M., and Baumeister, R. F. (2000). Self-regulation and depletion of limited resources: does self-control resemble a muscle? *Psychol. Bull.* 126, 247–259. doi: 10.1037/0033-2909.126.2.247

Murphy, M. C., Steele, C. M., and Gross, J. J. (2007). Signaling threat: how situational cues affect women in math, science, and engineering settings. *Psychol. Sci.* 18, 879–885. doi: 10.1111/j.1467-9280.2007.01995.x

Murphy, M. C., and Taylor, V. J. (2012). "The role of situational cues in signaling and maintaining stereotype threat" in *Stereotype threat: Theory, process, and application*. eds. M. Inzlicht and T. Schmader (New York, NY, US: Oxford University Press), 17–33.

Nelson, T. D. (2009). *Handbook of prejudice, stereotyping, and discrimination*. New York, NY: Psychology Press.

Newheiser, A.-K., and Barreto, M. (2014). Hidden costs of hiding stigma: ironic interpersonal consequences of concealing a stigmatized identity in social interactions. *J. Exp. Soc. Psychol.* 52, 58–70. doi: 10.1016/j.jesp.2014.01.002

Newheiser, A.-K., Barreto, M., and Tiemersma, J. (2017). People like me don't belong here: identity concealment is associated with negative workplace experiences. *J. Soc. Issues* 73, 341–358. doi: 10.1111/josi.12220

Ni, H. W., and Huo, Y. J. (2018). Same-gender supervisors protect women's leadership aspirations after negative performance feedback. *J. Appl. Soc. Psychol.* 48, 437–447. doi: 10.1111/jasp.12523

Niemann, Y. F., and Dovidio, J. F. (1998). Relationship of solo status, academic rank, and perceived distinctiveness to job satisfaction of racial/ethnic minorities. *J. Appl. Psychol.* 83, 55–71. doi: 10.1037/0021-9010.83.1.55

Nishii, L. H. (2013). The benefits of climate for inclusion for gender-diverse groups. *Acad. Manag. J.* 56, 1754–1774. doi: 10.5465/amj.2009.0823

O'Brien, L. T., Blodorn, A., Adams, G., Garcia, D. M., and Hammer, E. (2015). Ethnic variation in gender-STEM stereotypes and STEM participation: an intersectional approach. *Cult. Divers. Ethn. Minor. Psychol.* 21, 169–180. doi: 10.1037/a0037944

O'Brien, L. T. O., Hitti, A., Shaffer, E., Van Camp, A. R., Henry, D., Gilbert, P. N., et al. (2016). Improving girls sense of fit in science: increasing the impact of role models. *Soc. Psychol. Personal. Sci.* 8, 301–309. doi: 10.1177/1948550616671997

Öhman, A., and Mineka, S. (2001). Fears, phobias, and preparedness: toward an evolved module of fear and fear learning. *Psychol. Rev.* 108, 483–522. doi: 10.1037//0033-295X.108.3.483

Operario, D., and Fiske, S. T. (2001). Ethnic identity moderates perceptions of prejudice: judgments of personal versus group discrimination and subtle versus blatant bias. *Personal. Soc. Psychol. Bull.* 27, 550–561. doi: 10.1177/0146167201275004

Ostberg, V., and Lennartsson, C. (2007). Getting by with a little help: the importance of various types of social support for health problems. *Scand. J. Public Health* 35, 197–204. doi: 10.1080/14034940600813032

Oswald, D. L., and Chapleau, K. M. (2010). Selective self-stereotyping and women's self-esteem maintenance. *Personal. Individ. Differ.* 49, 918–922. doi: 10.1016/j.paid.2010.07.030

Oyserman, D., and Swim, J. K. (2001). Stigma: an insider's view. *J. Soc. Issues* 57, 1–14. doi: 10.1111/0022-4537.00198

Pascoe, E. A., and Smart Richman, L. S. (2009). Perceived discrimination and health: a meta-analytic review. *Psychol. Bull.* 135, 531–554. doi: 10.1037/a0016059

Pennington, C. R., Heim, D., Levy, A. R., and Larkin, D. T. (2016). Twenty years of stereotype threat research: a review of psychological mediators. *PLoS One* 11:e0146487. doi: 10.1371/journal.pone.0146487

Plaut, V. C. (2010). Diversity science: who needs it? *Psychol. Inq.* 21, 168–174. doi: 10.1080/1047840X.2010.492753

Plaut, V. C., Garnett, F. G., Buffardi, L. E., and Sanchez-Burks, J. (2011). "What about me?" Perceptions of exclusion and Whites' reactions to multiculturalism. *J. Pers. Soc. Psychol.* 101, 337–353. doi: 10.1037/a0022832

Plaut, V. C., Thomas, K. M., and Goren, M. J. (2009). Is multiculturalism or color blindness better for minorities? *Psychol. Sci.* 20, 444–446. doi: 10.1111/j.1467-9280.2009.02318.x

Podsiadlowski, A., Gröschke, D., Kogler, M., Springer, C., and Van Der Zee, K. (2013). Managing a culturally diverse workforce: diversity perspectives in organizations. *Int. J. Intercult. Relat.* 37, 159–175. doi: 10.1016/j.ijintrel.2012.09.001

Pronin, E., Steele, C. M., and Ross, L. (2004). Identity bifurcation in response to stereotype threat: women and mathematics. *J. Exp. Soc. Psychol.* 40, 152–168. doi: 10.1016/S0022-1031(03)00088-X

Purdie-Vaughns, V., and Eibach, R. P. (2008). Intersectional invisibility: the distinctive advantages and disadvantages of multiple subordinate-group identities. *Sex Roles* 59, 377–391. doi: 10.1007/s11199-008-9424-4

Purdie-Vaughns, V., Steele, C. M., Davies, P. G., Ditlmann, R., and Crosby, J. R. (2008). Social identity contingencies: how diversity cues signal threat or safety for African Americans in mainstream institutions. *J. Pers. Soc. Psychol.* 94, 615–630. doi: 10.1037/0022-3514.94.4.615

Putman, P., and Roelofs, K. (2011). Effects of single cortisol administrations on human affect reviewed: coping with stress through adaptive regulation of automatic cognitive processing. *Psychoneuroendocrinology* 36, 439–448. doi: 10.1016/j.psyneuen.2010.12.001

Quinn, D. M. (2017). Identity concealment: multilevel predictors, moderators, and consequences. *J. Soc. Issues* 73, 230–239. doi: 10.1111/josi.12213

Quinn, D. M. (2018). "When stigma is concealable: the costs and benefits for health" in *The Oxford handbook of stigma, discrimination, and health*. eds. B. Major, J. F. Dovidio and B. G. Link (New York, NY: Oxford University Press), 287–299.

Rajacich, D., Kane, D., Williston, C., and Cameron, S. (2013). If they do call you a nurse, it is always a "male nurse": experiences of men in the nursing profession. *Nurs. Forum* 48, 71–80. doi: 10.1111/nuf.12008

Rasinski, H., and Czopp, A. (2010). The effect of target status on witnesses' reactions to confrontations of bias. *Basic Appl. Soc. Psychol.* 32, 8–16. doi: 10.1080/01973530903539754

Rasinski, H. M., Geers, A. L., and Czopp, A. M. (2013). "I guess what he said wasn't that bad": dissonance in nonconfronting targets of prejudice. *Personal. Soc. Psychol. Bull.* 39, 856–869. doi: 10.1177/0146167213484769

Remedios, J. D., and Snyder, S. H. (2018). Intersectional oppression: multiple stigmatized identities and perceptions of invisibility, discrimination, and stereotyping. *J. Soc. Issues* 74, 265–281. doi: 10.1111/josi.12268

Richman, L. S., VanDellen, M., and Wood, W. (2011). How women cope: being a numerical minority in a male-dominated profession. *J. Soc. Issues* 67, 492–509. doi: 10.1111/j.1540-4560.2011.01711.x

Riordan, C. M., Schaffer, B. S., and Stewart, M. M. (2004). "Relational demography within groups: through the lens of discrimination" in *Discrimination at work: The psychological and organizational bases*. eds. R. L. Dipboye and A. Collella (Mahwah, NJ: Erlbaum), 37–62.

Roberson, Q. M., Roberson, L., Kulik, C. T., and Tan, R. Y. (2013). "Effective diversity training" in *The Oxford handbook of diversity and work*. ed. Q. Roberson (New York, NY, US: Oxford University Press).

Rosenthal, L., Levy, S. R., London, B., Lobel, M., and Bazile, C. (2013). In pursuit of the MD: the impact of role models, identity compatibility, and

belonging among undergraduate women. *Sex Roles* 68, 464–473. doi: 10.1007/s11199-012-0257-9

Rudman, L. A., and Glick, P. (2001). Prescriptive gender stereotypes and backlash toward agentic women. *J. Soc. Issues* 57, 743–762. doi: 10.1111/0022-4537.00239,

Rudman, L. A., and Mescher, K. (2013). Penalizing men who request a family leave: is flexibility stigma a femininity stigma? *J. Soc. Issues* 69, 322–340. doi: 10.1111/josi.12017

Ryan, M. K., Haslam, S. A., Hersby, M. D., Kulich, C., and Atkins, C. (2008). Opting out or pushed off the edge? The glass cliff and the precariousness of women's leadership positions. *Soc. Personal. Psychol. Compass* 2, 266–279. doi: 10.1111/j.1751-9004.2007.00007.x

Saguy, T., and Dovidio, J. F. (2013). Insecure status relations shape preferences for the content of intergroup contact. *Personal. Soc. Psychol. Bull.* 39, 1030–1042. doi: 10.1177/0146167213487078

Saguy, T., Dovidio, J. F., and Pratto, F. (2008). Beyond contact: intergroup contact in the context of power relations. *Personal. Soc. Psychol. Bull.* 34, 432–445. doi: 10.1177/0146167207311200

Saguy, T., and Kteily, N. (2014). Power, negotiations, and the anticipation of intergroup encounters. *Eur. Rev. Soc. Psychol.* 25, 107–141. doi: 10.1080/10463283.2014.957579

Schmader, T., and Beilock, S. (2012). "An integration of processes that underlie stereotype threat" in *Stereotype threat: Theory, process, and application*. eds. M. Inzlicht and T. Schmader (New York, NY: Oxford University Press), 34–50.

Schmader, T., and Johns, M. (2003). Converging evidence that stereotype threat reduces working memory capacity. *J. Pers. Soc. Psychol.* 85, 440–452. doi: 10.1037/0022-3514.85.3.440

Schmader, T., Johns, M., and Forbes, C. (2008). An integrated process model of stereotype threat effects on performance. *Psychol. Rev.* 115, 336–356. doi: 10.1037/0033-295X.115.2.336

Schmader, T., and Sedikides, C. (2018). State authenticity as fit to environment: the implications for social identity for fit, authenticity and self-segregation. *Personal. Soc. Psychol. Rev.* 22, 228–259. doi: 10.1177/1088868317734080

Schmitt, M. T., Branscombe, N. R., Postmes, T., and Garcia, A. (2014). The consequences of perceived discrimination for psychological well-being: a meta-analytic review. *Psychol. Bull.* 140, 921–948. doi: 10.1037/a0035754

Seibt, B., and Förster, J. (2004). Stereotype threat and performance: how self-stereotypes influence processing by inducing regulatory foci. *J. Pers. Soc. Psychol.* 87, 38–56. doi: 10.1037/0022-3514.87.1.38

Sekaquaptewa, D., and Thompson, M. (2002). The differential effects of solo status on members of high- and low-status groups. *Personal. Soc. Psychol. Bull.* 28, 694–707. doi: 10.1177/0146167202288013

Sekaquaptewa, D., and Thompson, M. (2003). Solo status, stereotype threat, and performance expectancies: their effects on women's performance. *J. Exp. Soc. Psychol.* 39, 68–74. doi: 10.1016/S0022-1031(02)00508-5

Seligman, M. E. P. (1971). Phobias and preparedness. *Behav. Ther.* 2, 307–320. doi: 10.1016/S0005-7894(71)80064-3

Shelton, J. N., Alegre, J. M., and Son, D. (2010). Social stigma and disadvantage: current themes and future prospects. *J. Soc. Issues* 66, 618–633. doi: 10.1111/j.1540-4560.2010.01666.x

Shelton, J. N., Richeson, J. A., and Salvatore, J. (2005). Expecting to be the target of prejudice: implications for interethnic interactions. *Personal. Soc. Psychol. Bull.* 31, 1189–1202. doi: 10.1177/0146167205274894

Shelton, J. N., Richeson, J. A., Salvatore, J., and Hill, D. M. (2006). "Silence is not golden: the intrapersonal consequences of not confronting prejudice" in *Stigma and group inequality: Social psychological approaches*. eds. S. Levin and C. Van Laar (Mahwah, NJ: Erlbaum), 65–81.

Sherman, D. K., and Cohen, G. L. (2002). Accepting threatening information: self-affirmation and the reduction of defensive biases. *Curr. Dir. Psychol. Sci.* 11, 119–123. doi: 10.1111/1467-8721.00182

Sherman, D. K., Kinias, Z., Major, B., Kim, H. S., and Prenovost, M. (2007). The group as a resource: reducing biased attributions for group success and failure via group affirmation. *Personal. Soc. Psychol. Bull.* 33, 1100–1112. doi: 10.1177/0146167207303027

Shnabel, N., Nadler, A., Ullrich, J., Dovidio, J. F., and Carmi, D. (2009). Promoting reconciliation through the satisfaction of the emotional needs of victimized and perpetrating group members: the needs-based model of reconciliation. *Personal. Soc. Psychol. Bull.* 35, 1021–1030. doi: 10.1177/0146167209336610

Simon, S., and O'Brien, L. T. (2015). Confronting sexism: exploring the effect of nonsexist credentials on the costs of target confrontations. *Sex Roles* 73, 245–257. doi: 10.1007/s11199-015-0513-x

Smith, J. L., Sansone, C., and White, P. H. (2007). The stereotyped task engagement process: the role of interest and achievement motivation. *J. Educ. Psychol.* 99, 99–114. doi: 10.1037/0022-0663.99.1.99

Somvadee, C., and Morash, M. (2008). Dynamics of sexual harassment for policewomen working alongside men. *Policing* 31, 485–498. doi: 10.1108/13639510810895821

Spears, R., Doosje, B., and Ellemers, N. (1997). Self-stereotyping in the face of threats to group status and distinctiveness: the role of group identification. *Personal. Soc. Psychol. Bull.* 23, 538–553. doi: 10.1177/0146167297235009

Spencer, S. J., Logel, C., and Davies, P. G. (2016). Stereotype threat. *Annu. Rev. Psychol.* 67, 415–437. doi: 10.1146/annurev-psych-073115-103235

Spencer-Rodgers, J., Major, B., Foster, D. E., and Peng, K. (2016). The power of affirming group values: group affirmation buffers the self-esteem of women exposed to blatant sexism. *Self Identity* 15, 413–431. doi: 10.1080/15298868.2016.1145593

Ståhl, T., Van Laar, C., and Ellemers, N. (2012a). The role of prevention focus under stereotype threat: initial cognitive mobilization is followed by depletion. *J. Pers. Soc. Psychol.* 102, 1239–1251. doi: 10.1037/a0027678

Ståhl, T., Van Laar, C., Ellemers, N., and Derks, B. (2012b). Searching for acceptance: prejudice expectations direct attention towards social acceptance cues when under a promotion focus. *Group Process. Intergroup Relat.* 15, 523–538. doi: 10.1177/1368430211435485

Steele, C. M., and Aronson, J. (1995). Stereotype threat and the intellectual test performance of African Americans. *J. Pers. Soc. Psychol.* 69, 797–811. doi: 10.1037/0022-3514.69.5.797

Steele, C. M., Spencer, S. J., and Aronson, J. (2002). "Contending with group image: the psychology of stereotype and social identity threat" in *Advances in experimental social psychology*. ed. M. P. Zanna (San Diego, CA: Academic Press), 379–440.

Stephens, N. M., Fryberg, S. A., Markus, H. R., Johnson, C. S., and Covarrubias, R. (2012a). Unseen disadvantage: how American universities' focus on independence undermines the academic performance of first-generation college students. *J. Pers. Soc. Psychol.* 102, 1178–1197. doi: 10.1037/a0027143

Stephens, N. M., and Levine, C. S. (2011). Opting out or denying discrimination? How the framework of free choice in American society influences perceptions of gender inequality. *Psychol. Sci.* 22, 1231–1236. doi: 10.1177/0956797611417260

Stephens, N. M., Markus, H. R., and Phillips, L. T. (2014). Social class culture cycles: how three gateway contexts shape selves and fuel inequality. *Annu. Rev. Psychol.* 65, 611–634. doi: 10.1146/annurev-psych-010213-115143

Stephens, N. M., Townsend, S. S. M., Hamedani, M. G., Destin, M., and Manzo, V. (2015). A difference-education intervention equips first-generation college students to thrive in the face of stressful college situations. *Psychol. Sci.* 26, 1556–1566. doi: 10.1177/0956797615593501

Stephens, N. M., Townsend, S. S. M., Markus, H. R., and Phillips, L. T. (2012b). A cultural mismatch: independent cultural norms produce greater increases in cortisol and more negative emotions among first-generation college students. *J. Exp. Soc. Psychol.* 48, 1389–1393. doi: 10.1016/j.jesp.2012.07.008

Sterk, N., Meeussen, L., and Van Laar, C. (2018). Perpetuating inequality: junior women do not see queen bee behavior as negative but are nonetheless negatively affected by it. *Front. Psychol.* 9:1690. doi: 10.3389/fpsyg.2018.01690,

Stevens, F. G., Plaut, V. C., and Sanchez-Burks, J. (2008). Unlocking the benefits of diversity: all-inclusive multiculturalism and positive organizational change. *J. Appl. Behav. Sci.* 44, 116–133. doi: 10.1177/0021886308314460

Sutton, R. M., Elder, T. J., and Douglas, K. M. (2006). Reactions to internal and external criticism of outgroups: social convention in the intergroup sensitivity effect. *Personal. Soc. Psychol. Bull.* 32, 563–575. doi: 10.1177/0146167205282992

Swim, J. K., Cohen, L. L., and Hyers, L. L. (1998). "Experiencing everyday prejudice and discrimination" in *Prejudice: The target's perspective*. eds. J. K. Swim and C. Stangor (San Diego, CA, US: Academic Press), 37–60.

Swim, J. K., and Hyers, L. L. (1999). Excuse me–What did you just say?!: women's public and private responses to sexist remarks. *J. Exp. Soc. Psychol.* 35, 68–88. doi: 10.1006/jesp.1998.1370

Swim, J. K., and Stangor, C. (1998). *Prejudice: The target's perspective*. San Diego, CA: Academic Press.

Swim, J. K., and Thomas, M. A. (2006). "Responding to everyday discrimination: a synthesis of research on goal directed, self-regulatory coping behaviors" in *Stigma and group inequality: Social psychological perspectives*. eds. S. Levin and C. Van Laar (Mahwah: Lawrence Erlbaum Associates Publishers), 105–126.

Tajfel, H., and Turner, J. C. (1979). "An integrative theory of intergroup conflict" in *The social psychology of intergroup relations*. eds. W. G. Austin and S. Worchel (Monterey, CA: Brooks/Cole), 33–47.

Turner, J. C. (1981). Towards a cognitive redefinition of the social group. *Curr. Psychol. Cogn.* 1, 93–118.

Turner, J. C., Hogg, M. A., Oakes, P. J., Reicher, S. D., and Wetherell, M. S. (1987). *Rediscovering the social group: A self-categorization theory*. Oxford, UK: Blackwell.

Unzueta, M. M., and Binning, K. R. (2012). Diversity is in the eye of the beholder: how concern for the in-group affects perceptions of racial diversity. *Personal. Soc. Psychol. Bull.* 38, 26–38. doi: 10.1177/0146167211418528

Van Breen, J. A., Spears, R., Kuppens, T., and De Lemus, S. (2018). Subliminal gender stereotypes: who can resist? *Personal. Soc. Psychol. Bull.* 44, 1648–1663. doi: 10.1177/0146167218771895

Van Dijk, H., and van Engen, M. L. (2019). The flywheel effect of gender role expectations in diverse work groups. *Front. Psychol.* 10:976. doi: 10.3389/fpsyg.2019.00976

Van Grootel, S., Van Laar, C., Meeussen, L., Schmader, T., and Sczesny, S. (2018). Uncovering pluralistic ignorance to change men's communal self-descriptions, attitudes, and behavioral intentions. *Front. Psychol.* 9:1344. doi: 10.3389/FPSYG.2018.01344

Van Knippenberg, D., Van Ginkel, W. P., and Homan, A. C. (2013). Diversity mindsets and the performance of diverse teams. *Organ. Behav. Hum. Decis. Process.* 121, 183–193. doi: 10.1016/j.obhdp.2013.03.003

Van Laar, C., Bleeker, D., Ellemers, N., and Meijer, E. (2014). Ingroup and outgroup support for upward mobility: divergent responses to ingroup identification in low status groups. *Eur. J. Soc. Psychol.* 44, 563–577. doi: 10.1002/ejsp.2046

Van Laar, C., Derks, B., and Ellemers, N. (2013). Motivation for education and work in young Muslim women: the importance of value for ingroup domains. *Basic Appl. Soc. Psychol.* 35, 64–74. doi: 10.1080/01973533.2012.746609

Van Laar, C., Derks, B., Ellemers, N., and Bleeker, D. (2010). Valuing social identity: consequences for motivation and performance in low-status groups. *J. Soc. Issues* 66, 602–617. doi: 10.1111/j.1540-4560.2010.01665.x

Van Laer, K. (2018). The role of co-workers in the production of (homo) sexuality at work: a Foucauldian approach to the sexual identity processes of gay and lesbian employees. *Hum. Relat.* 71, 229–255. doi: 10.1177/0018726717711236

van Peer, J. M., Roelofs, K., Rotteveel, M., van Dijk, J. G., Spinhoven, P., and Ridderinkhof, K. R. (2007). The effects of cortisol administration on approach–avoidance behavior: an event-related potential study. *Biol. Psychol.* 76, 135–146. doi: 10.1016/j.biopsycho.2007.07.003

Van Prooijen, A. M., and Ellemers, N. (2015). Does it pay to be moral? How indicators of morality and competence enhance organizational and work team attractiveness. *Br. J. Manag.* 26, 225–236. doi: 10.1111/1467-8551.12055

Veldman, J., Meeussen, L., and Van Laar, C. (2019). A social identity perspective on the social-class achievement gap: academic and social adjustment in the transition to university. *Group Process. Intergroup Relat.* 22, 403–418. doi: 10.1177/1368430218813442

Veldman, J., Meeussen, L., Van Laar, C., and Phalet, K. (2017). Women (do not) belong here: gender-work identity conflict among female police officers. *Front. Psychol.* 8:130. doi: 10.3389/fpsyg.2017.00130

Vignoles, V. L. (2011). "Identity motives" in *Handbook of identity theory and research*. eds. S. J. Schwartz, K. Luyckx and V. L. Vignoles (New York, NY, US: Springer Science + Business Media), 403–432.

Vignoles, V. L., Regalia, C., Manzi, C., Golledge, J., and Scabini, E. (2006). Beyond self-esteem: influence of multiple motives on identity construction. *J. Pers. Soc. Psychol.* 90, 308–333. doi: 10.1037/0022-3514.90.2.308

Von Hippel, C., Issa, M., Ma, R., and Stokes, A. (2011). Stereotype threat: antecedents and consequences for working women. *Eur. J. Soc. Psychol.* 41, 151–161. doi: 10.1002/ejsp.749

von Hippel, C., Kalokerinos, E. K., and Henry, J. D. (2013). Stereotype threat among older employees: relationship with job attitudes and turnover intentions. *Psychol. Aging* 28, 17–27. doi: 10.1037/a0029825

Walton, G. M., and Cohen, G. L. (2007). A question of belonging: race, social fit, and achievement. *J. Pers. Soc. Psychol.* 92, 82–96. doi: 10.1037/0022-3514.92.1.82

Wayne, J., and Cordeiro, H. (2003). Who Is a good organizational citizen? Social perception of male and female employees who use family leave. *Sex Roles* 49, 233–246. doi: 10.1023/A:1024600323316

Weiss, D., and Lang, F. (2012). "They" are old but "I" feel younger: age-group dissociation as a self-protective strategy in old age. *Psychol. Aging* 27, 153–163. doi: 10.1037/a0024887

Wilder, D. A. (1984). Predictions of belief of homogeneity and similarity following social categorization. *Br. J. Soc. Psychol.* 23, 323–333. doi: 10.1111/j.2044-8309.1984.tb00648.x

Williams, D. R., Neighbors, H. W., and Jackson, J. S. (2003). Racial/ethnic discrimination and health: findings from community studies. *Am. J. Public Health* 93, 200–208. doi: 10.2105/AJPH.93.2.200

Wills, T. A. (1985). "Supportive functions of interpersonal relationships" in *Social support and health*. eds. S. Cohen and S. L. Syme (San Diego, CA: Academic Press), 61–82.

Wilson-Kovacs, D., Ryan, M. K., Haslam, S. A., and Rabinovich, A. (2008). "Just because you can get a wheelchair in the building doesn't necessarily mean that you can still participate": barriers to the career advancement of disabled professionals. *Disabil. Soc.* 23, 705–717. doi: 10.1080/09687590802469198

Wright, S. C., and Taylor, D. M. (1999). Success under tokenism: co-option of the newcomer and the prevention of collective protest. *Br. J. Soc. Psychol.* 38, 369–396. doi: 10.1348/014466699164220

Wright, S. C., Taylor, D. M., and Moghaddam, F. M. (1990). Responding to membership in a disadvantaged group: from acceptance to collective protest. *J. Pers. Soc. Psychol.* 58, 994–1003. doi: 10.1037/0022-3514.58.6.994

Wrosch, C., Scheier, M. F., Carver, C. S., and Schulz, R. (2003). The importance of goal disengagement in adaptive self-regulation: when giving up is beneficial. *Self Identity* 2, 1–20. doi: 10.1080/15298860309021

Conflict of Interest Statement: The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Advantages of publishing in Frontiers

OPEN ACCESS
Articles are free to read for greatest visibility and readership

FAST PUBLICATION
Around 90 days from submission to decision

HIGH QUALITY PEER-REVIEW
Rigorous, collaborative, and constructive peer-review

TRANSPARENT PEER-REVIEW
Editors and reviewers acknowledged by name on published articles

Frontiers
Avenue du Tribunal-Fédéral 34
1005 Lausanne | Switzerland

Visit us: www.frontiersin.org
Contact us: info@frontiersin.org | +41 21 510 17 00

REPRODUCIBILITY OF RESEARCH
Support open data and methods to enhance research reproducibility

DIGITAL PUBLISHING
Articles designed for optimal readership across devices

FOLLOW US
@frontiersin

IMPACT METRICS
Advanced article metrics track visibility across digital media

EXTENSIVE PROMOTION
Marketing and promotion of impactful research

LOOP RESEARCH NETWORK
Our network increases your article's readership