

# The cycle of workplace bias and how to interrupt it

Nicole M. Stephens<sup>a,\*</sup>, Lauren A. Rivera<sup>a</sup>, Sarah S.M. Townsend<sup>b</sup>

<sup>a</sup> Management and Organizations Department, Kellogg School of Management, Northwestern University, USA

<sup>b</sup> Management and Organization Department, Marshall School of Business, University of Southern California, USA



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## ABSTRACT

A rich body of research throughout the social sciences demonstrates that bias—people's tendency to display group-based preferences—is a major obstacle in the way of promoting diversity, equity, and inclusion in the workplace. The current article moves beyond the single-level focus of prior theories of workplace bias to propose a novel theoretical model that conceptualizes workplace bias as a multilevel cycle. First, we discuss the theoretical foundations of our bias cycle theory and describe why understanding the nature of workplace bias—and effectively reducing it—requires considering the reciprocal influences of both individual and organizational levels of the cycle. Specifically, we describe how workplace bias operates as a cycle and then propose that successfully reducing workplace bias requires multilevel interventions that interrupt bias across both the individual and organizational levels of the cycle. Second, because workplace bias is reproduced through both of these levels, we review and bring together literatures that are often considered separately: psychology research on reducing bias at the individual level and sociology and management research on reducing bias at the organizational level. Third, we use our bias cycle theory to formulate general principles for determining how to begin and how to pair interventions across levels. Finally, we conclude by discussing our theoretical contributions and outlining directions for future research.

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## The cycle of workplace bias and how to interrupt it

The diversity, equity, and inclusion space is a booming “big business” (Zelevansky, 2019). By some estimates, organizations in the United States spend \$8 billion annually (Mehta, 2019). Despite organizations' widespread interest in improving diversity, equity, and inclusion, one key obstacle that stands in the way is *bias*: the tendency to show a disproportionate preference for people or groups based on social group membership (e.g., gender, race, sexuality, social class; Allport, 1954; Banaji & Greenwald, 2016; Eberhardt, 2019). Bias can emerge due to reliance on group-based stereotypes and/or prejudice toward social groups—i.e., animosity or antipathy.

For decades, scholars across disciplines have sought to develop theories to better understand the sources, functions, and consequences of bias. Most theories of bias focus on a single level without considering the other level. That is, they consider bias at *either* the individual level (i.e., in hearts and minds) or organizational level (i.e., policies and practices; Banaji & Greenwald, 2016;

Bielby, 2000; Dovidio et al., 2008; Eberhardt, 2019; Petersen & Saporta, 2004). Just as prior theories of bias have focused on a single level, so too have interventions to reduce bias (e.g., a diversity training; Bezrukova, Spell, Perry, & Jehn, 2016; Onyeador, Hudson, & Lewis, 2021; Stephens, Markus, & Fryberg, 2012).

In this article, we move beyond this “single-level” focus to propose a novel theoretical model that conceptualizes workplace bias as a multilevel cycle (the “workplace bias cycle”). Consistent with research on the interdependence between people and their social contexts (Hamedani & Markus, 2019; Markus & Kitayama, 2010; Plaut, 2010; Stephens, Fryberg, Markus, Johnson, & Covarrubias, 2012), we theorize that workplace bias is produced and reproduced through the ongoing cycle through which individuals and organizations reciprocally influence each other. Given the cyclical nature of bias, our theory helps to explain why single-level interventions that change *either* the individual *or* organizational level in isolation often fail to reduce bias. Building on this insight, our theory also suggests that successfully reducing workplace bias requires multilevel interventions that interrupt the workplace bias cycle at both the individual level (i.e., changing hearts and minds) and the organizational level (i.e., redesigning policies and practices).

We proceed as follows. First, we discuss the theoretical foundations of our bias cycle theory and describe why

\* Corresponding author at: Kellogg School of Management, Northwestern University, 2211 Campus Drive, Evanston, IL 60208, USA.

E-mail address: [n-stephens@kellogg.northwestern.edu](mailto:n-stephens@kellogg.northwestern.edu) (N.M. Stephens).

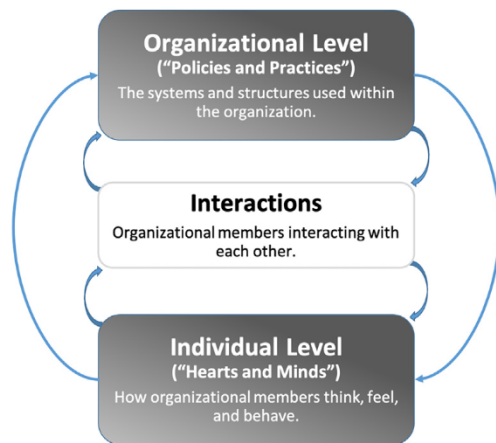


Fig. 1. The cycle of workplace bias.

understanding the nature of workplace bias—and effectively reducing it—requires considering the reciprocal influences of both individual and organizational levels of the bias cycle. Second, we review empirically supported interventions for reducing the expression of bias in the workplace. Because workplace bias is reproduced through both individual and organizational levels of the bias cycle, we review and bring together literatures that are often considered separately: psychology research on reducing bias at the individual level and sociology and management research on reducing bias at the organizational level. Third, we use our bias cycle theory to formulate general principles for determining how to begin and how to pair interventions across levels. We conclude by discussing our theoretical contributions and outlining promising directions for future research.

### Workplace bias operates as a cycle

Bias can occur at either an implicit or explicit level—that is, either outside of or within the bounds of conscious awareness (e.g., Dovidio, Kawakami, & Gaertner, 2002; Greenwald & Banaji, 1995). At the more implicit level, bias involves automatic associations, including stereotypes based on social group membership (e.g., Bodenhausen, 1990; Greenwald & Banaji, 1995). Such associations develop, in part, due to humans' cognitive limitations and resulting need for heuristics or mental shortcuts (Tversky & Kahneman, 1974). At the more explicit level, bias involves *prejudice*, typically defined by more conscious feelings of negative affect or antipathy toward individuals or groups based on their social group membership (Allport, 1954). Throughout this article, we use the term *bias* to broadly refer to the preference for people and social groups based on the use of stereotypes and/or reliance on prejudice.

As noted above, existing theories of bias tend to focus on either the individual or organizational level of the bias cycle. Indeed, research in psychology often examines how and why bias emerges at an individual level, considering how bias becomes embedded in and expressed through individuals' attitudes and behavior, as well as how these attitudes and behavior can affect the nature and quality of their interactions with others (e.g., Banaji & Greenwald, 2016; Dovidio et al., 2002; Eberhardt, 2019). Likewise, research in sociology and management more often examines how bias becomes embedded in—and reproduced through—policies and practices at an organizational level (e.g., Correll, 2017; Kalev, 2009; Pedulla & Thébaud, 2015; Stamarski & Son Hing, 2015).

The current article moves beyond this single-level focus to propose that it is necessary to understand that workplace bias is reproduced in a multilevel cycle. As shown in Fig. 1, understanding

workplace bias as a cycle means recognizing the reciprocal influences of bias across individual and organizational levels: biased attitudes and behavior give rise to biased policies and practices, and, in turn, biased policies and practices fuel biased attitudes and behavior (Hamedani & Markus, 2019; Markus & Kitayama, 2010; Stephens, Fryberg et al., 2012; Stephens, Markus, & Phillips, 2014). Specifically, biased attitudes can foster intergroup interactions that are infrequent and low quality (i.e., stressful and depleting),<sup>1</sup> and lead to a preference for biased policies and practices at the organizational level. In turn, biased policies and practices can lead to infrequent and low-quality intergroup interactions, and sustain and perpetuate biased attitudes and behavior at the individual level. By emphasizing the reciprocal influences of bias across levels, our theory broadens our understanding of the sources of bias and enhances our understanding of how bias is produced and reproduced.

To illustrate how the workplace bias cycle operates, as a starting point, consider how bias at the individual level can both shape interactions with others, as well as the policies and practices that are adopted at the organizational level. Take, for example, the situation of a manager who endorses the negative stereotype that women are not suited for leadership positions because they are too relational (Cuddy, Glick, & Beninger, 2011; Cuddy, Fiske, & Glick, 2004; Glick & Fiske, 2001). Given this biased view, research suggests the manager will have lower quality interactions with women in their organization (e.g., Kray, Kennedy, & Van Zant, 2014; Richeson, Trawalter, & Shelton, 2005; Richeson & Shelton, 2007), and be less likely to mentor or promote them (Milkman, Akinola, & Chugh, 2012; Moss-Racusin, Dovidio, Brescoll, Graham, & Handelsman, 2012). Moreover, they will also be more likely to prefer—and ultimately, be more likely to enact—policies and practices that reflect their biased preferences (Cech & Blair-Loy, 2010; Cunningham & Sartore, 2010; Soni, 2000). In the case of establishing the criteria for hiring, they may be more likely to define merit based on the characteristics that are stereotypically linked to masculinity in our society (Bian, Leslie, & Cimpian, 2017; Ensmenger, 2010; Gaucher, Friesen, & Kay, 2011; Kray & Kennedy, 2017; Lerchenmueller, Sorenson, & Jena, 2019). For example, they may include confidence, the ability to challenge others' opinions, or even willingness to work on nights and weekends. In other words, they are likely to define merit based on a masculine default or ideal (Cheryan & Markus, 2020).

After these masculine ideals become embedded in policies and practices, the cycle continues. Consider how bias embedded at an organizational level (e.g., biased hiring criteria) can further shape and amplify bias in individuals' attitudes and behavior, as well as in interactions with others. For example, to the extent that the manager relies on the masculine criteria for hiring, the manager would assume that "good" job candidates are those who display more stereotypically masculine qualities and are therefore more likely to be men. Accordingly, the manager would likely find interactions with women to be more stressful or depleting, rate women as less qualified than men, and hire women less frequently (e.g., Cuddy et al., 2004). Now that these masculine criteria are institutionalized as part of the hiring process, they may further encourage the manager to see merit through the lens of gender stereotypes. This gendered view of merit may lead the manager to use these criteria to evaluate members of their team and to generally assume that their female colleagues have less merit and potential than their male counterparts (e.g., Turco, 2010). As a result, they may be even less likely to seek out opportunities to

<sup>1</sup> Research suggests that biased attitudes foster interactions characterized by emotional and cognitive depletion, stress, and threat for both parties involved in the intergroup interactions (e.g., Richeson et al., 2005; Richeson & Shelton, 2007).



work with women and to advocate for or promote women (e.g., Castilla & Benard, 2010; Heilman, Manzi, & Caleo, 2019; Joshi, Son, & Roh, 2015; Milkman, Akinola, & Chugh, 2015). As the cycle continues, workplace bias across levels of the cycle will be reproduced, sustained, and ultimately even more entrenched over time.

### *The cycle of workplace bias informs intervention*

Our theory extends single-level theories of bias by emphasizing that bias is produced via a multilevel cycle. Theories of bias not only guide scholars' understanding of the nature of how bias operates, but also the interventions that they develop to reduce the expression of bias. Indeed, the single-level focus of prior theories has inspired interventions that target a single level (e.g., a diversity training; Bendick, Egan, & Lofhjelm, 2001; Chang et al., 2019; Cox, 1994). In psychology, interventions typically seek to reduce bias embedded in individuals' hearts and minds<sup>2,3</sup> (e.g., Dixon, Levine, Reicher, & Durrheim, 2012; Onyeador et al., 2021; Paluck, Porat, Clark, & Green, 2021; Paluck & Green, 2009). We refer to these as *individual level* interventions. Conversely, in sociology and management, interventions often seek to reduce bias embedded in organizational level policies or practices (e.g., Kalev, 2009; Kalev, Dobbin, & Kelly, 2006; Pedulla & Thébaud, 2015; Reskin, 2000; Stamarski & Son Hing, 2015). We refer to these as *organizational level* interventions.

### *Why single-level approaches to intervention so often fail*

By conceptualizing workplace bias as a multilevel cycle, our theory explains why interventions at a single level are often fragile or hard to sustain, or just plain ineffective (Bezrukova et al., 2016; Kalev et al., 2006; Onyeador et al., 2021). Indeed, an individual level intervention on its own is likely to be ineffective. Interventions that target the individual level, such as countering stereotypes or perspective taking, have been shown to reduce the reliance on group-based stereotypes, reduce prejudice toward outgroups, and improve the quality of intergroup interactions (e.g., Brambilla, Ravenna, & Hewstone, 2012; Galinsky & Moskowitz, 2000; Todd, Bodenhausen, Richeson, & Galinsky, 2011). However, given that workplace bias operates as a cycle, changing the individual level on its own (e.g., reducing the tendency to express bias in behavior) will not necessarily lead to a reduction in biased outcomes (e.g., hiring or promotion decisions) unless individual level interventions are paired with organizational level changes to policies and practices. For example, encouraging intergroup contact could reduce individual employees' prejudice toward other employees and increase their motivation to make more fair and less biased hiring decisions. However, if an organization's policy for sourcing job applications or scoring re'sume's results in an interview pool that is homogenous, managers will have limited ability to act on intentions to make less biased decisions. Thus, even when individuals are motivated to avoid bias, the policies and practices that guide their decisions can nevertheless be conduits of bias (e.g., Kalev, 2009; Pedulla & Thébaud, 2015; Stamarski & Son Hing, 2015).

Conversely, organizational level interventions in the absence of individual level interventions are also likely to fail to reduce

workplace bias over time. Indeed, a lack of internal support for diversity programs is a major reason why they are not successfully adopted (Dobbin, Kim, & Kalev, 2011). If individuals are not open to diversity and motivated to reduce bias, organizational efforts to reduce bias are likely to have little impact or even elicit resistance among employees. Indeed, employees may actively resist these organizational level changes and refuse to adopt them (Dobbin, Schrage, & Kalev, 2015; Plant & Devine, 2001). In sum, a single-level approach is likely to fail because of the ongoing bias cycle through which both individual and organizational levels influence one another to sustain biased outcomes.

### *Interrupting workplace bias requires multilevel intervention*

By conceptualizing bias as a mutually reinforcing cycle, our theory goes beyond illuminating why single-level approaches often fail to suggest that effectively interrupting workplace bias requires multilevel intervention. That is, interventions should interrupt the workplace bias cycle at both the individual level (i.e., changing hearts and minds) and the organizational level (i.e., redesigning policies and practices). Intervening at both levels should render the desired changes more likely to endure because reducing bias at one level tends to reinforce and amplify the reduction of bias at the other level in an ongoing cycle.

Consider the impact of a multilevel intervention with the example of the manager who endorses gender stereotypes. To reduce the impact of these stereotypes and reduce gender disparities in hiring, an organization could pair an individual level intervention to counter group-based stereotypes with an organizational level intervention to reduce the influence of stereotypes on hiring decisions. By reducing bias in the manager's attitudes, the individual level intervention should increase their motivation to behave in less biased ways. As a result, they should have higher quality interactions with female employees and be more open to mentoring and supporting them. To capitalize on the manager's newfound motivation to reduce bias, our theory suggests that the organization should also implement policies to reduce bias at the organizational level. In turn, when the manager engages with the new egalitarian policies, this behavior should reinforce and increase their motivation to behave in less biased ways.

Just as our theory suggests that interventions to reduce bias should be multilevel, so too does it suggest that indicators of successful bias reduction should be evident across both individual and organizational levels. Focusing on the goal of reducing gender disparities in hiring outcomes, at an individual level, there should be improvements in individual employees' attitudes and behavior (e.g., more receptiveness toward gender diversity, higher quality cross-gender interactions). At an organizational level, there should be parallel improvements in the equity of hiring outcomes (e.g., resume screens, hiring decisions). These multilevel improvements should persist over time and serve to increase gender diversity.

In sum, our bias cycle theory clearly suggests that interventions to reduce workplace bias should target multiple levels. In the section below, we therefore review and bring together empirically supported interventions for reducing bias across both individual and organizational levels. We first review the individual level and then the organizational level separately. Afterward, we offer a discussion of multilevel intervention principles to determine how to begin to intervene in an organization and how to pair interventions across levels.

## **Individual level interventions to reduce bias**

In this section, we review psychology research on reducing bias at the individual level (e.g., in attitudes and behavior). We first provide a brief overview of research on *diversity training* because it is the applied, multifaceted approach that is most commonly used

<sup>2</sup> Individual level interventions—those designed to change hearts and minds—can be delivered to individuals in isolation or through interactions (e.g., intergroup interactions).

<sup>3</sup> We do not include construal interventions in our article because these interventions are not designed to reduce bias (Walton & Wilson, 2018). Instead, they tend to focus on changing the mindsets of negatively stereotyped and/or lower status individuals in a way that can empower them to improve their academic performance.

by organizations (Bendick et al., 2001; Cox, 1994). Second, we highlight five promising individual level interventions that can be incorporated into diversity training to make it more effective: increasing intergroup contact, countering stereotypes, encouraging perspective taking, finding common ground, and leveraging social influence.

To identify these five interventions, we drew from psychology research on interventions that seek to reduce bias in hearts and minds (e.g., Paluck et al., 2021). We focused on interventions that met the following four criteria: (a) are organizationally relevant, (b) have the stated goal of reducing bias, (c) have some empirical support for their effects, and (d) are conceptually distinct<sup>4</sup> from each other. Although these five interventions are not an exhaustive or comprehensive list of all potential individual level interventions, they represent some of the more promising options for organizations to reduce bias at this level.

### Diversity training

Diversity training is a broad, heterogeneous category that can incorporate many different types of content (e.g., awareness of bias, strategies to reduce bias) and use various formats (i.e., lecture, video, group activities). Diversity training has been defined as a “distinct set of instructional programs aimed at facilitating positive intergroup interactions, reducing prejudice and discrimination, and enhancing the skills, knowledge, and motivation of participants to interact with diverse others” (Bezrukova et al., 2016, p. 1228). In a recent review of individual level interventions, Paluck et al. (2021) explained that diversity training “typically involve(s) more than one theoretical mechanism, and so experiments testing their outcomes are more akin to program evaluations than to theoretical tests” (p. 541). At a high level, what these trainings share in common is their efforts to increase people’s understanding of what bias is and how it affects behavior.

Although such training is ubiquitous in today’s Fortune 500 organizations (Bendick et al., 2001; Cox, 1994), there are very few rigorous evaluations of its efficacy in changing individual attitudes and behavior. For example, Paluck et al. (2021) counted only six experimental studies examining the efficacy of diversity training in the past decade. Furthermore, they identified the Chang et al. (2019) study as the only experimental study to test the outcomes associated with a diversity training in an actual organization.

Given the heterogeneity of content included in diversity training, evaluations of its impact often produce inconsistent results. Review papers that compare its efficacy to other types of individual level interventions find that diversity training is among the least effective (i.e., based on effect sizes) for changing attitudes and behavior (Paluck et al., 2021). The small body of research on the efficacy of diversity training suggests that, under optimal conditions, diversity training can have small benefits. Specifically, it can help individuals acquire new knowledge about diversity, change implicit and explicit attitudes, and even increase behaviors that foster diversity (e.g., Carnes et al., 2012; Devine, Forscher, Austin, & Cox, 2012; Lai, Hoffman, & Nosek, 2013; Shields, Zawadzki, & Johnson, 2011).

In sum, diversity training—the most commonly used applied approach to reduce bias in organizations—has potential to increase people’s understanding of and motivation to reduce bias. However, we suggest diversity training will be more effective to the extent that it incorporates empirically supported individual level interventions.

<sup>4</sup> For example, we did not include educational programs such as intergroup dialogues or cross-cultural training because they incorporate interventions such as perspective-taking and countering stereotypes that we review elsewhere.

### Empirically supported individual level interventions

The individual level interventions that have the most empirical support in the psychological literature on prejudice reduction include: increasing intergroup contact, countering stereotypes, encouraging perspective taking, finding common ground, and leveraging social influence (Paluck et al., 2021). Although these individual level interventions are widely examined by psychologists, they are typically studied in the laboratory.<sup>5</sup> Despite few studies that test these interventions in the workplace, our bias cycle theory clearly points to the need to leverage—and also test—these individual level interventions in the workplace.

#### Increasing intergroup contact

The most studied individual level intervention for reducing the affective dimensions of bias—namely, group-based prejudice—is intergroup contact. *Intergroup contact* simply means participating in an interaction with people who are members of an outgroup (Allport, 1954).<sup>6</sup>

Research clearly shows that intergroup contact interventions can improve attitudes and reduce prejudice toward outgroups (e.g., race, social class, religion; Boag & Wilson, 2014; Dovidio, Gaertner, & Kawakami, 2003; Lemmer & Wagner, 2015; Lowe, 2021; Pettigrew & Tropp, 2006; Scacco & Warren, 2018; Schroeder & Risen, 2016). Intergroup contact interventions have sought to reduce bias in various ways. For example, intergroup contact interventions have assigned soldiers to live with roommates from different ethnic backgrounds (Finseraas & Kotsadam, 2017); encouraged Iraqi Christians and Muslims to play soccer together on the same team (Mousa, 2020); and asked college students from different racial backgrounds to complete a bonding task involving self-disclosure (Page-Gould, Mendoza-Denton, & Tropp, 2008).

#### Countering stereotypes

A second intervention that can be used to reduce bias at the individual level of the bias cycle is countering stereotypes. *Countering stereotypes* refers to being presented with or imagining a member of an outgroup who is inconsistent with a stereotype of their group (e.g., based on attributes or behavior). According to Paluck et al. (2021), the goal of these interventions is to “alter a particular aspect of a person’s cognitive association with or assessment of an outgroup through practice or repeated contradictory pairings” (p. 543). In other words, these interventions seek to interrupt and alter people’s automatic, stereotypic associations with outgroups.

Research finds that providing counter-stereotypic information can reduce the activation of stereotypes, suppress the expression of prejudice, and reduce discriminatory behavior (Dasgupta & Greenwald, 2001; Devine & Monteith, 1999; Kawakami, Dovidio, Moll, Hermsen, & Russin, 2000; King & Ahmad, 2010; King, Shapiro, Hebl, Singletary, & Turner, 2006; Mendoza, Gollwitzer, & Amodio, 2010; Olson & Fazio, 2006; Singletary & Hebl, 2009). Interventions that seek to counter people’s stereotypes of outgroups have done so in various ways. For example, these interventions have provided counter-stereotypic information

<sup>5</sup> Among the interventions we review, to our knowledge, the only one that has been examined in the workplace is intergroup contact. The few studies that have been conducted on intergroup contact in the workplace suggest that this intervention is beneficial for reducing bias in the workplace (e.g., the impact of ageism on hiring; Fasbender & Wang, 2017; Pagotto, Voci, & Maculan, 2010).

<sup>6</sup> The original contact hypothesis proposed that the benefits of intergroup contact only occur in situations that have equal status, intergroup cooperation, common goals, and institutional support (Allport, 1954). More recent research, however, found no empirical support for the claim that these conditions are necessary to realize the benefits of intergroup contact (Pettigrew & Tropp, 2006).



about Muslims (e.g., in a resume; King & Ahmad, 2010), exposed people to counter-stereotypic representations of women (e.g., as strong and capable; Blair, Ma, & Lenton, 2001), and trained people to have positive reactions when encountering Black people (e.g., an “approach response”; Kawakami, Phillips, Steele, & Dovidio, 2007; Stewart & Payne, 2008).<sup>7</sup>

#### Encouraging perspective taking

A third intervention that can be used to reduce bias at the individual level of the bias cycle is perspective taking. *Perspective taking* means actively considering others’ psychological experiences (e.g., thoughts or emotions; Dovidio et al., 2004). This could be accomplished by either imagining how another person feels or imagining how you would feel if you were in another person’s situation. In either case, these interventions work to decrease bias toward outgroups by “lead[ing] to a merging of the self and the other, in which the perspective-taker’s thoughts toward the target become more ‘selflike’” (Galinsky & Moskowitz, 2000, p. 709; see also Davis, Conklin, Smith, & Luce, 1996). By connecting outgroups to the self—and therefore to one’s ingroup, this intervention can redirect typical ingroup favoritism processes so that the positive evaluation typically reserved for one’s ingroup is extended to outgroups.

Research from both the laboratory and the field finds that perspective taking interventions can reduce bias toward outgroups—i.e., reduce the accessibility and application of stereotypes, foster more positive emotions or attitudes, and create more approach-oriented behaviors (e.g., Batson et al., 1997; Berthold, Leicht, Methner, & Gaum, 2013; Broockman & Kalla, 2016; Finlay & Stephan, 2000; Galinsky & Moskowitz, 2000; Todd et al., 2011; Vescio, Sechrist, & Paolucci, 2003). Interventions that have encouraged perspective taking have done so in various ways. For example, they have asked people to adopt the perspective of a Black man in a video or photograph (Todd et al., 2011); asked people to write an essay describing the experience of a person from a negatively stereotyped group (e.g., Álvarez-Castillo, Equizábal, Cámara, & González, 2014); and used virtual reality to encourage people to actually “see” themselves in someone else’s shoes (e.g., Banakou, Hanumanthu, & Slater, 2016; Oh, Bailenson, Weisz, & Zaki, 2016).

#### Finding common ground

A fourth intervention that can be used to reduce bias at the individual level of the bias cycle is finding common ground. *Finding common ground* means finding something in common with an outgroup member—for example, a common experience or activity, value, preference, background, or identity. The literature has referred to this intervention as creating a “common ingroup identity” or a “superordinate identity” (Gaertner, Dovidio, Nier, Ward, & Banker, 1999; Gaertner et al., 2000).

Finding common ground builds on some of the key tenets of social identity theory: the idea people prefer their ingroups to outgroups and that simply categorizing people as “ingroup” is enough to shift that preference (Tajfel, 1974; Turner, 1975; Turner, Brown, & Tajfel, 1979). Accordingly, finding common ground works by broadening the circle of others included in one’s ingroup or by altering how groups are perceived within existing group

boundaries. If outgroups are viewed instead as part of and connected to that self and one’s ingroup, then people should show the same kind of “ingroup” preference for people or groups previously viewed as “outgroup.”

Research suggests that finding common ground can help to reduce bias against outgroup members—i.e., increase positive attitudes and decrease intergroup threat (Craig & Richeson, 2012; Gaertner & Dovidio, 2000; Gaertner, Dovidio, Anastasio, Bachman, & Rust, 1993; Hall, Crisp, & Suen, 2009). Interventions have encouraged people to find common ground in various ways. For example, finding common ground interventions have made a shared “American” identity salient among Democrats and Republicans (Riek, Mania, Gaertner, McDonald, & Lamoreaux, 2010); asked people to write about characteristics that the ingroup and outgroup have in common (Hall et al., 2009); and reminded different disadvantaged groups (e.g., racial and sexual minorities) of their common experiences of discrimination (Cortland et al., 2017).

#### Leveraging social influence

A fifth intervention that can be used to reduce bias at the individual level of the bias cycle is leveraging social influence (Blanchard, Crandall, Brigham, & Vaughn, 1994; Crandall, Eshleman, & O’Brien, 2002; Monteith, Deneen, & Tooman, 1996; Sechrist & Stangor, 2001; Stangor, Sechrist, & Jost, 2001). *Leveraging social influence* means using social norms or pressure (e.g., from peers or ingroup members) to reduce bias. The literature has referred to these types of interventions as “social norm” or “social consensus” interventions.

These interventions build on theories of the power of social norms to guide and change people’s attitudes and behavior (e.g., Cialdini, Reno, & Kallgren, 1990). These interventions work by changing people’s views about which attitudes or behaviors are normative, desirable, or appropriate (e.g., among their peers; Goldstein, Cialdini, & Griskevicius, 2008; Paluck et al., 2021; Prentice & Paluck, 2020). Based on these altered norms, people then shift their attitudes or behavior to bring them into alignment with the norms.

Research from both the laboratory and the field suggests that leveraging social influence can help to reduce endorsement of group-based stereotypes as well as the expression of prejudice (Blanchard et al., 1994; Crandall et al., 2002; Gómez, Tropp, Vázquez, Voci, & Hewstone, 2018; Monteith et al., 1996; Patel, 2013; Robinson, 2010; Sechrist & Milford-Szafran, 2011; Sechrist & Stangor, 2001; Stangor et al., 2001). Interventions have leveraged peer influence to reduce bias in various ways. For example, they have made salient non-prejudiced norms toward gay men (Monteith et al., 1996); shared peer group norms about the frequency of others’ cross-group friendships (Gómez et al., 2018); and provided consensus information about others’ different beliefs about racial groups (Stangor et al., 2001).

#### Summary

In this section, we provided an overview of research on diversity training, as well as the individual interventions that have the most empirical support in the psychological literature on prejudice reduction. Although these individual level interventions can be incorporated into diversity training, they could also be used in other ways. For example, organizations could increase intergroup contact by holding regular events or workplace gatherings, training sessions, or ad-hoc initiatives in which diverse employees are likely to interact in meaningful ways.

Enacting one or more of these individual level interventions should, on average, help employees to become more aware of and motivated to reduce bias. However, given that bias operates as a

<sup>7</sup> Although most of these studies about countering stereotypes focus on reducing people’s reliance on stereotypes of outgroups, stereotypes are widely shared and culturally produced (e.g., stereotypes about women are held by both men and women; Banaji & Greenwald, 2016; Correll, 2017; Eberhardt, 2019; Reuben, Sapienza, & Zingales, 2014; Ridgeway, 2011). Interventions for countering stereotypes should therefore be broadly relevant and effective in reducing the use of group-based stereotypes more generally, even when those stereotypes are about ingroups (see Kawakami, Dovidio, & Van Kamp, 2007 for example).

cycle, changing the individual level on its own often fails to produce long term changes in attitudes and behavior. Although employees who benefit from individual level interventions should become more receptive to changes in organizational policies and practices aimed at reducing bias, good intentions are not enough. Individual level interventions often fail because, as part of the workplace bias cycle, individuals' attitudes and behavior are continually shaped by the biases that are embedded in policies and practices at an organizational level (e.g., Kalev, 2009; Pedulla & Thébaud, 2015; Stamarski & Son Hing, 2015). Our bias cycle theory therefore suggests that successfully reducing bias requires intervening not only at the individual level, but also at the organizational level.

### Empirically supported organizational level interventions

Given the importance of also intervening at the organizational level, in this section, we drew from research from sociology and management to highlight some possible interventions that seek to reduce bias in policies and practices. To identify the interventions to include in our review, we first selected interventions that met the following three criteria: (a) are organizationally relevant, (b) have the stated goal of reducing bias, and (c) have some empirical support for their effects. We then categorized these interventions into four conceptually distinct, overarching categories: diversifying opportunity, increasing transparency, making evaluation more systematic, and creating accountability.<sup>8</sup> Although these five interventions are not an exhaustive or comprehensive list of all potential organizational level interventions, they represent some of the more promising options for organizations to reduce bias at this level.

#### Diversifying opportunity

The first category of interventions that can be used to reduce bias at the organizational level of the bias cycle is aimed at *diversifying opportunity*: adopting organizational policies and practices that widen the pool of individuals considered for jobs, work assignments, and sponsorship opportunities (e.g., Johnson, Hekman, & Chan, 2016). Diversifying opportunity can reduce bias by reducing the influence of managers' biased personal preferences about whom to hire or work with.

In hiring, diversifying opportunity entails widening the channels companies use to source talent. Many organizations rely on recruitment channels (e.g., super-elite colleges and universities) that are biased against groups that are underrepresented in their context (e.g., Rivera, 2012a, 2015a, b). Organizations can reduce such pipeline bias by recruiting talent from a wider and more diverse array of sources, such as recruiting programs at Historically Black Colleges and Universities (Dobbin et al., 2015).

After employees gain access to jobs, organizations can diversify the opportunities available to underrepresented groups—and reduce bias in the process—by developing formal systems to equitably assign projects. Tracking assignments helps to ensure that work assignments are distributed equitably, rather than based on managers' group-based stereotypes (Madden, 2012; Tulshyan, 2018). Formal systems should also be used to assign all employees to a mentor or multiple mentors (Blau, Currie, Croson, & Ginther, 2010; Dobbin et al., 2015; Kalev et al., 2006). Such a system can distribute mentorship and/or sponsorship more equitably by

preventing potential mentors and mentees from falling prey to the biases that would otherwise inform this process (e.g., Ibarra, Carter, & Silva, 2010).

#### Increasing transparency

The second category of interventions that can be used to reduce bias at the organizational level of the bias cycle involves *increasing transparency*. Increasing transparency in policies and practices can help to reduce bias by more equitably providing access to information so that all employees, rather than just those from high status groups, are aware of opportunities and the “rules of the game” for how to succeed.

In the domain of hiring, firms can increase transparency by widely circulating job postings and by making the requirements of those jobs clear. Formal job posting systems, as opposed to filling roles through referrals and word-of-mouth, decrease bias by more equitably sharing the information needed to gain access to jobs (Baron & Bielby, 1980; Beaman, Keleher, & Magruder, 2018; DiPrete, 1989; Hodson & Kaufman, 1982; McDonald, Lin, & Ao, 2009; Pedulla & Pager, 2019; Reskin, 2000).

After entering an organization, transparency about promotions is critical for reducing bias in access to advancement opportunities (e.g., Garcia-Izquierdo, Moscoso, & Ramos-Villagrasa, 2012). Transparency can help to more equitably distribute information so that a broader range of employees gain access to the information needed to access promotions (see Kalev et al., 2006 for discussion). It is important to be transparent about the promotion process by providing clear job ladders: a map of job levels within an organization and the required pathways to achieve them. Another key step to be transparent about the process is to inform all employees when they are eligible to be promoted. This means that organizations should avoid relying on employees' self-nomination, a process that is typically informed by gender and racial biases (Bear, 2011; Bowles, Babcock, & McGinn, 2005; Leibbrandt & List, 2015). It is also critical to be transparent with employees by sharing the clear and specific criteria on which promotions will be based (Castilla, 2015).

#### Making evaluation more systematic

The third category of interventions that can be used to reduce bias at the organizational level of the bias cycle involves *making evaluation more systematic*. Making evaluation systematic has two components that we discuss in the sections below. We first discuss how to *de-bias evaluative tools* and then how to *de-bias evaluative procedures*. Making these evaluations more systematic works to reduce bias by reducing the influence of group-based stereotypes.

#### De-biasing evaluative tools

Organizations can reduce bias in hiring decisions by replacing open-ended interviews with structured interviews. Indeed, structured interviews are far less prone to bias than unstructured interviews (Huffcutt, 2011).<sup>9</sup> They reduce bias, in part, because they prevent evaluators from relying on group-based stereotypes, as well as “gut” feelings of “fit,” “chemistry” and “spark” (Rivera, 2012b, 2015a). One example of a structured interview is a behavioral interview, in which evaluators ask job candidates questions about how they handled themselves in specific situations that are relevant to performance on the job (e.g., in a

<sup>8</sup> Although some of these interventions could be used at an individual level (e.g., increasing accountability with goal setting), we categorize these interventions as “organizational level” because most of the research that supports them focuses on reducing bias in policies and practices.

<sup>9</sup> While using structured interviews is associated with reducing bias in hiring, organizations need to think carefully about whether the questions developed are themselves biased (for examples, see Dittmann et al., 2020; Rivera, 2015b).



client service role, “Tell me about a time when you had a difficult client and how you managed the situation.”).

Reducing bias in evaluative tools is also important for performance evaluations. The design of a performance appraisal method can make group-based stereotypes more or less salient. Stereotypes are more salient when individuals are asked to make subjective, category-dependent, relative evaluations (e.g., “Is this person tall?”) than when they are asked to make absolute evaluations (e.g., “Please list this person’s height in inches; [Biernat & Vescio, 2002](#)). Consequently, designing performance prompts in a way that elicits objective rather than subjective information can help reduce bias. For example, rather than asking if someone is a “rainmaker,” ask them how many clients or how much revenue they brought in.

#### *De-biasing evaluative procedures*

In addition to de-biasing evaluative tools, it is also necessary to de-bias the evaluative procedures. One key step is to make the criteria for evaluation more systematic. To do so, it is critical for organizations to specify—and to also ask employees to commit to—a set of evaluative criteria in advance ([Uhlmann & Cohen, 2005](#)). These systematic criteria should be used in resume screening, interviewing, performance evaluations, compensation setting, and promotion reviews. Without these criteria, evaluators frequently cherry pick criteria after the fact to justify their preferred employees ([Biernat & Vescio, 2002](#); see also, [Elvira & Graham, 2002](#)).<sup>10</sup>

Reducing bias in evaluative procedures also requires making the criteria for evaluation more equitable. To do so, it is critical to ensure that the criteria are based on the skills needed to succeed in an organization, rather than the characteristics common among high status social groups. Indeed, organizations often rely on criteria that reflect “masculine defaults” that are biased against members of underrepresented groups (e.g., [Acker, 1990](#); [Bem, 1993](#); [Cheryan & Markus, 2020](#); [Cox, 1994](#); [Dittmann, Stephens, & Townsend, 2020](#); [Gilligan, 1993](#); [Ridgeway, 2011](#)). For example, technology companies frequently evaluate employees based on stereotypically masculine defaults (e.g., advanced math skills, independent work, beliefs about innate brilliance) that can repel women from jobs in technology or computer science (see [Cheryan & Markus, 2020](#)).

#### *Increasing accountability*

The fourth category of interventions that can be used to reduce bias at the organizational level of the bias cycle involves *increasing accountability*: adopting organizational policies and practices that require people to report, explain, and/or justify their behavior to others. Accountability can help to reduce bias by increasing people’s awareness of how others will view them, and therefore encouraging them to engage in more thoughtful, careful, and less biased behavior (e.g., [Kruglanski & Freund, 1983](#)).

One key way that organizations can increase accountability is by creating positions or entities that are responsible for overseeing initiatives intended to increase workplace equity (e.g., an equity committee; [Kalev et al., 2006](#)). Creating these roles establishes authority and oversight to enforce adherence to policies intended to reduce bias. For example, an equity committee could hold employees accountable for making fair and equitable promotion

decisions ([Tetlock & Kim, 1987](#); [Tetlock, 1983](#); [Tetlock, 1985](#)). As part of this process, employees could be informed that the committee will review their decisions for fairness, and that they will also be asked to explain the rationale for their decisions (e.g., [Castilla, 2015](#)). Doing so encourages employees to be more thoughtful about the equity of their decisions ([Lerner & Tetlock, 1999](#)).

Another way that organizations can increase accountability is by setting specific and clear goals or targets for what the organization hopes to achieve with respect to reducing bias. For example, they might specify that the organization’s goal is to increase the percentage of Black employees from 2 to 4% over the next 2 years. For those making decisions about whom to hire, having these goals should reduce bias by leading them to make more careful decisions and also encouraging them to follow through on their desires or intentions (e.g., a commitment device; [Gollwitzer & Sheeran, 2006](#); [Kruglanski & Freund, 1983](#); [Milkman, Beshears, Choi, Laibson, & Madrian, 2011](#); [Rogers, Milkman, John, & Norton, 2015](#)).

#### *Summary*

In this section, we provided an overview of the organizational level interventions to reduce bias that have the most empirical support in the sociology and management literature. Enacting one or more of these organizational level interventions should, on average, help employees to engage in less biased and more equitable behavior. However, given that workplace bias operates as a cycle, changing the organizational level alone is unlikely to produce long term changes in attitudes and behavior. Organizational level interventions often fail because, as part of the workplace bias cycle, individuals often actively resist these organizational level changes and refuse to adopt them (e.g., [Dobbin et al., 2015](#)). In the next section, emphasizing the critical importance of multilevel interventions, we suggest general principles to determine how to begin and how to pair interventions across levels.

#### **Principles for designing effective multilevel interventions**

Before beginning any intervention effort, it is important to first identify the domain in which intervention is needed most. Although our workplace bias cycle theory does not speak directly to this decision, the selection of domain should be based on an analysis of where bias and its resulting group-based disparities are most pronounced in the organization ([Luca & Bazerman, 2020](#); [Wullert, Gilmartin, & Simard, 2019](#)). For example, if the largest group-based disparities emerge at the point of hiring, then one’s efforts to reduce bias should be focused on intervening in the domain of hiring (e.g., resume review, interview process). If, on the other hand, group-based disparities do not emerge until the point of promotion to managerial positions, then interventions should be focused on reducing bias in the domain of promotion (e.g., mentoring and developing talent, criteria for promotion).

Even after identifying the domain of focus, organizations must determine how to begin and choose from a wide range of potentially effective interventions at individual and organizational levels. How should an organization begin? And, which interventions and cross-level pairs of interventions should an organization choose? Our workplace bias cycle theory provides general principles for determining how to begin and how to pair interventions across levels.

#### *How to begin*

Our multilevel approach to reducing bias clearly suggests that an organization should begin by doing a multilevel assessment of

<sup>10</sup> When it comes to standardizing evaluation, some scholars advocate complete formalization in which criteria and scoring rubrics are fixed and managerial discretion is eliminated entirely (e.g., [Reskin, 2000](#)). Others have found that complete standardization can elicit resistance to the organization’s efforts ([Dobbin et al., 2015](#); [Jencks, 1998](#); [Steele & Aronson, 1998](#); [Walton, Spencer, & Erman, 2013](#)). What is clear is that evaluative criteria are needed, and that it is also important for managers to buy into these criteria ([Uhlmann & Cohen, 2005](#)).

the organization's current and previous efforts to reduce bias.<sup>11</sup> Focusing on the domain in which intervention is needed most (e.g., hiring), one should ask what kinds of bias reduction efforts are in place currently (or have been implemented previously) at both individual and organizational levels. Specifically, have there been interventions at one level, but not the other level? The bias cycle theory suggests that bias reduction interventions at one level will not have the intended effects without also changing the other level. Thus, organizations may benefit from implementing *new* interventions at the level where interventions have been absent, while continuing their efforts at the other level.

For example, if an organization has previously trained individuals to motivate them to reduce their bias in hiring decisions (e.g., a diversity training), but neglected the organizational level, then these individual level efforts on their own are unlikely to realize their intended benefits. In this case, employees may be motivated to make less biased decisions about whom to hire or promote, but their organization's hiring practices will still likely produce biased hiring decisions. Thus, to reduce bias in hiring, it is important to add new interventions at the organizational level (e.g., providing equitable and systematic criteria), while also continuing to build momentum at the individual level by introducing additional interventions (e.g., leveraging social influence or encouraging perspective taking; see [Correll, 2017](#)).

#### *How to pair interventions across levels*

After ensuring that an organization has addressed both levels, there are still a multitude of effective interventions at both levels that one might enact. Which specific interventions will be most effective to pair across levels? Our bias cycle theory suggests that it is important to pair interventions across both levels of the cycle in a way that capitalizes on their potential to reinforce and enable the benefits of each other. Since the two levels reinforce each other, we theorize that pairing interventions in a synergistic way can harness the cycle to reduce bias throughout the organization. We use the term *pairing* to emphasize the importance of simultaneously intervening at *both* the individual and organizational levels of the bias cycle. For the sake of simplicity, in our discussion below, we focus on how to pair a single intervention at one level with a single intervention at the other level. However, organizations may also opt to use multiple interventions at a given level to pair with a single intervention at the other level.

For example, diversifying the candidate pool at the organizational level could be paired with an intergroup contact intervention at the individual level. An intergroup contact intervention at the individual level could enable or amplify the benefits of the new policy to diversify the candidate pool. Specifically, by decreasing prejudice against potential new hires from diverse backgrounds, this intergroup contact intervention could encourage employees to support the effort to diversify the candidate pool and also encourage them to welcome the diverse hires into the organization. In turn, when employees take part in the new policy to diversify the candidate pool, they should have more intergroup contact as a result of this policy, further amplifying the benefits of the intergroup contact intervention.

As another example, an intervention to counter gender stereotypes at an individual level could be paired with an organizational level intervention to reduce gender bias in the criteria for promotions. Countering gender stereotypes should lead

managers to question the assumption that women are less qualified to be leaders, and potentially increase their support for women colleagues. Such changes in attitudes and behavior should also increase managers' motivation to make less biased promotion decisions. This individual level change can thereby facilitate and enable the benefits of the new policy to make and use promotion criteria that are more egalitarian and less gendered. In turn, by developing and employing the new, more equitable criteria, employees should avoid relying on stereotypes in their decisions, which should help to further challenge their stereotypes.

#### **General discussion**

In the United States and across the globe, the 2020 COVID-19 pandemic has served to widen existing racial and economic inequalities ([Pappas, 2020](#); [Thorbecke & Mitropoulos, 2020](#)). These inequalities have been accompanied by rising support for collective action and movements (e.g., Black Lives Matter) to improve racial and economic justice ([Cohn & Quealy, 2020](#)). These movements have increased pressure on organizations to take action to improve diversity, equity, and inclusion. Despite organizations' increased interest in improving their diversity, equity, and inclusion, *bias* is one key obstacle that still stands in the way of their efforts.

Extending prior theory and research, our workplace bias cycle theory provides several important theoretical contributions. First, it advances psychological and sociological understandings of the nature of bias. Existing theories of workplace bias typically focus on either the individual or organizational level in isolation. By focusing on a single level, they limit our understanding of the nature of bias and how it operates. Building on existing theories, our theory enhances our understanding of the sources of bias and how it operates in and through organizational systems. Specifically, our bias cycle theory clarifies that bias is never exclusively individual or organizational in nature. Instead, it is always dynamically produced through the reciprocal influences of *both* biased individual attitudes and behaviors, as well as biased organizational policies and practices.

Second, by conceptualizing workplace bias as a self-reinforcing, multilevel cycle, our theory explains why single-level interventions are likely to fail (e.g., [Kalev et al., 2006](#); [Kidder, Lankau, Chrobot-Mason, Mollica, & Friedman, 2004](#); [Naff & Kellough, 2003](#); [Rynes & Rosen, 1995](#); [Sidanius, Devereux, & Pratto, 1992](#)). Indeed, prior psychological and sociological theories of bias have inspired single-level interventions (e.g., diversity training) that are insufficient to successfully reduce bias on their own. However, our bias cycle theory reveals why interrupting workplace bias at a single level is not enough: individual behavior is not only shaped by individuals' attitudes, but also by organizational level policies and practices. Thus, a single-level intervention is unlikely to be enough to interrupt the full cycle through which workplace bias is reproduced.

Building on this theoretical insight about why single-level approaches fail, our third contribution is to propose that effectively reducing workplace bias requires multilevel interventions that interrupt the workplace bias cycle at both the individual level (e.g., changing attitudes and behaviors) and the organizational level (e.g., redesigning policies and practices). This contribution extends prior work that points to the benefits of multiple interventions (e.g., multiple training sessions over time or more than one type of intervention delivered simultaneously; [Bendick et al., 2001](#); [Bezrukova et al., 2016](#); [Carter et al., 2006](#); [Castillo, Brossart, Reyes, Conoley, & Phoummarath, 2007](#); [Dobbin & Kalev, 2016](#); [Earley, 1987](#)). Our bias cycle theory clarifies that more interventions may not always be better than fewer interventions. Instead, to harness the bias cycle to produce change, successfully reducing bias in an

<sup>11</sup> Support from top management might be considered a necessary precondition before enacting interventions (e.g., [Dobbin et al., 2015](#)). In other words, it will be challenging—if not impossible—to implement bias reduction interventions at the individual and organizational levels without support from top management.



organization requires *multilevel* interventions that target both individual and organizational levels.

Fourth, we used our bias cycle theory to formulate general principles for designing effective, multilevel interventions. Based on understanding bias as a multilevel cycle, we began to answer the questions of “how to begin” and “how to pair interventions” across levels. We suggested the importance of assessing an organization's prior and current efforts to reduce bias to ensure that both levels of bias have been addressed. We also suggested the principle of creating pairings of synergistic interventions that have the most potential to enable and amplify the effects of each other across levels.

### Limitations and future directions

One limitation of our review is that we did not include all possible interventions at an individual and organizational level. We only included interventions that have some empirical evidence, are conceptually distinct, are organizationally relevant, and have the stated goal of reducing bias. For example, there were many interventions we did not include based on the requirement that the research have the stated goal of reducing bias. Accordingly, our review did not include research on fostering belonging or inclusion (Cheryan, Plaut, Davies, & Steele, 2009; Friedman & Holtom, 2002; Stephens, Fryberg et al., 2012; Stephens, Townsend, Markus, & Phillips, 2012; Walton & Cohen, 2011), creating psychological safety (Bradley, Postlethwaite, Klotz, Hamdani, & Brown, 2012; Edmondson, 1999; Nembhard & Edmondson, 2006), or leveraging the strengths of diversity in groups and teams (Chatman, Greer, Sherman, & Doerr, 2019; Goncalo, Chatman, Duguid, & Kennedy, 2015; Homan & Greer, 2013). Although we did not review these research areas, we acknowledge that they are likely to be effective in reducing bias because they foster psychological experiences (e.g., inclusion) that tend to go hand-in-hand with bias reduction.

Moreover, because our review focused on reducing bias at the individual and the organizational level, another limitation of our article is that we did not discuss additional interventions that can be used to reduce bias in groups and teams.<sup>12</sup> Indeed, to the extent that groups and teams have their own policies or practices that diverge from the organizational level, bias reduction interventions could also be delivered to groups and teams. For example, to reduce group-based disparities in who speaks in team meetings, a manager could enact a turn-taking policy, such that all team members are expected to share their perspectives. A manager could also encourage team members to amplify the voices of other team members whose voices might otherwise be overlooked or unheard (Bain, Kreps, Meikle, & Tenney, 2021).

Despite these limitations, our bias cycle theory provides novel theoretical insights about how bias operates in organizations and how to reduce it. These insights point to several critical avenues for future research. First, moving beyond the typical single-level focus of most previous research, future work should do more to examine the reciprocal influences of bias across both levels of the cycle, specifically, how the expression of bias at one level shapes the other level and vice versa. That is, research should examine how bias in individuals' hearts and minds impacts support for organizational level policies and practices, as well as how bias in policies and practices can affect individuals' hearts and minds.

Second, our theory suggests that simultaneous interventions at multiple levels will more effectively reduce bias than the same

number of simultaneous interventions at a single level. Future research should test this claim in the field by comparing the effectiveness of multilevel and single-level intervention efforts in organizations over time. Third, our theory suggests that interventions should be paired in a synergistic way such that interventions at one level amplify the benefits of interventions at the other level. Future research should examine which specific pairings of interventions most effectively amplify the benefits of each other. To do so, research should more fully and concretely identify how interventions at one level amplify and enable the effects of the other. For example, at an organizational level, how does an intervention that makes evaluation more systematic alter employees' interactions with each other, and, in turn, their hearts and minds? How might the initiation of this set of processes amplify the benefits of an individual level interventions such as perspective-taking or intergroup contact?

### Conclusion: reducing bias is not enough

In this article, we introduced a novel workplace bias cycle theory that advances our understanding of how it operates in organizations. Because workplace bias is necessarily multilevel, interventions to reduce bias should also be multilevel—that is, they should target *both* individual and organizational levels. We therefore brought together and reviewed empirically supported interventions to reduce bias in individuals' hearts and minds and in organizations' policies and practices. By conceptualizing workplace bias as a mutually reinforcing cycle, our bias cycle theory also provides principles about how to design more effective, multilevel interventions to reduce bias.

Although our theory provides a clear path for better understanding the nature of bias and how to reduce it, it is important to recognize that reducing bias is only the first step in a two-step process of creating high performing, diverse, equitable, and inclusive organizations. Indeed, to increase diversity, organizations must first reduce bias throughout all levels of the organization. From a public-facing view, achieving this diversity might give organizations “diversity credentials.” However, these organizations and their employees will not fully benefit from this diversity without careful and systematic efforts to foster inclusion: taking steps to ensure that all employees from diverse backgrounds are fully engaged, empowered, and respected, and feel part of the organizational community.

### Conflict of interest

None.

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<sup>12</sup> There are other individual and organizational level interventions that could also be adapted to be used in the context of groups and teams. For example, a perspective taking intervention could be used to encourage teams to take other team members' perspectives, or accountability could be used to motivate team members to reduce bias in their behavior toward each other.

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