**Presence and Power: Teams with Hierarchical Representation of Underrepresented
Minorities are More Attractive**

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Abstract

Across four studies ($N = 1,555$) we find that individuals perceive teams with *hierarchical representation* (i.e., minority employees represented throughout their hierarchy) as more attractive than equally diverse teams that lack hierarchical representation. Teams with hierarchical representation are perceived as more diverse and as having superior team functioning (Study 1). Furthermore, the effect of hierarchical representation on team attractiveness did not differ between racial minority and majority participants (Studies 2-3), suggesting that attitudes about race among racial majority members might have evolved since a previous study found only racial minorities to be concerned with hierarchical representation. Additionally, diverse teams without hierarchical representation are perceived as no more attractive than hierarchical teams with objectively lower diversity (Study 3) and non-hierarchical teams without diversity (Study 4). These studies highlight the importance of minority representation across every echelon of a hierarchy rather than only at lower levels.

Keywords: diversity, hierarchy, organizational attractiveness, intergroup relations

A growing number of organizations strive to project a commitment to diversity, equity, and inclusion (DEI)—conveying their commitment through advertisements and recruitment materials (e.g., Avery & McKay, 2006; Purdie-Vaughns et al., 2008; Walker et al., 2012), mission statements (e.g., Plaut et al., 2009; Wolsko et al., 2000), and public pledges (Friedman, 2020). A primary goal of these efforts is to attract minority applicants to pursue employment opportunities (Avery, 2003), and thereby diversify their employee base. By appearing more diverse, they hope to portray the image of an inclusive and equitable organization in which everyone feels accepted and valued (e.g., Chen & Hamilton, 2015; Cheryan et al., 2009).

Almost invariably, organizations' public commitments to DEI focus on simple numerical diversity—for example, they show both White and minority employees in their recruitment advertisements (e.g., Perkins et al., 2000), or state explicit goals for the demographic distribution of their employees (Chang et al., 2019; Kirgios et al., 2021). Yet this strategy of focusing on numerical representation often masks the *vertical* distribution of minorities throughout the organizational hierarchy, and whether minority employees hold managerial positions (Cox, 1991). For example, while Amazon's 2014 diversity report touted that Black and Latinx employees comprised 25% of their total workforce, in reality only 8% of these employees held managerial positions, whereas White (71%) and Asian-American (18%) employees were overrepresented in higher-ranked positions (Greene, 2015; Mac, 2014).

In the current research, we argue that organizations who seek to appear truly committed to DEI must project that they have not only numerical diversity, but also *hierarchical representation*, or diversity that is distributed across all hierarchical levels (Unzueta & Binning, 2012). In four preregistered studies we investigate whether individuals are more attracted to organizational teams with hierarchical representation compared to those with numerical

diversity, but in which minority employees are concentrated at lower levels of the hierarchy. We also examine why diversity represented throughout a hierarchy makes an organizational team more attractive than teams in which diversity is concentrated more in lower ranked positions, and whether White and minority group individuals respond similarly to hierarchical representation.

The effect of perceived diversity on team functioning

Organizations seen as more diverse are viewed more positively along many dimensions (see Shemla et al., 2016 for a review). For instance, more diverse companies are seen as fairer (Gündemir et al., 2017; Kaiser et al., 2013) and as providing a stronger sense of belonging, especially for minorities (e.g., Cheryan et al., 2009; Good et al., 2012; Purdie-Vaughns et al., 2008). Further, more perceived diversity is associated with more positive evaluations of team effectiveness (van Knippenberg & Mell, 2016; Williams & O'Reilly, 1998), higher performance (Allen et al., 2008; Christian et al., 2006; Jehn & Bezrukova, 2004), and enhanced social integration (Harrison et al., 2002).

However, whether people view an organization as diverse and committed to DEI is likely to depend not only on its numerical diversity but also its hierarchical representation. As with Amazon, organizations that have employees from underrepresented groups only in low hierarchical positions might not be viewed as being particularly diverse, even if they have numerical diversity. Within these contexts, people may observe a salient demographic faultline that is negatively associated with perceived commitment to DEI (Wilton et al., 2020) and team functioning (e.g., Lau & Murnighan, 2005; Thatcher et al., 2003). For example, the more people perceive subgroup divisions in their team, the more inclined they are to form coalitions, engage in conflict with others, and experience lower team satisfaction (Jehn & Bezrukova, 2010). We propose that when teams embrace diversity via both numerical *and* hierarchical representation,

people will perceive teams as more committed to diversity, as having more positive team functioning, and in turn be more attracted to such an organization.

The importance of hierarchical representation

Hierarchical structures endow some individuals more control over resources and higher status than others (e.g., Blau, 1968; Emerson, 1962; Ravlin & Thomas, 2005; Tost et al., 2013). Those higher in the hierarchy have more power (Pfeffer, 1981), prestige (Blau, 1977), freedom and autonomy (Keltner et al., 2003), and enjoy better access to scarce resources (Magee & Galinsky, 2008) than those lower in the hierarchy. If higher-ranked positions are disproportionately occupied by White men and lower-ranked positions disproportionately occupied by minorities, outside perceivers may question the organization's commitment to DEI (Wilton et al., 2020). A lack of hierarchical representation among minorities would signal inequity in the distribution of rewards, resources, and career opportunities, such that White employees are treated better than minorities and are given more opportunities to succeed (Bertrand & Hallock, 2001; Cohen & Broschak, 2013; Cohen & Huffman, 2007). Indeed, a study by Unzueta and Binning (2012) found that participants' perceptions of an organization's diversity were shaped by hierarchical representation in addition to numerical diversity, such that organizations were seen as diverse only if they were numerically diverse *and* had hierarchical representation.

We aimed to build from Unzueta and Binning (2012) and test whether hierarchical representation affects not only perceptions of diversity, but also attraction to the organization – namely, the ultimate goal of organizations' public commitments to DEI. To date, we know of only one study that examined the effects of hierarchical representation on attraction to the organization. Avery (2003) manipulated organizational recruitment materials, depicting either

high or low numerical diversity in the organization, and either high or low hierarchical representation. That study found that hierarchical representation was viewed more positively than numerical diversity without hierarchical representation. However, it found no difference between hierarchical representation and low numerical diversity; the organization with numerical diversity and hierarchical representation was no more attractive than the organization with low numerical diversity. This perplexing finding might have been due to the relatively low sample sizes by today's standards. Further, Avery (2003) did not examine mechanisms, or why hierarchical representation might boost attractiveness. Finally, Avery (2003) found that only Black participants viewed the organization with hierarchical representation as more attractive. As we outline in the next section, there is reason to believe the effects of hierarchical representation extend to White individuals at this point in our history.

As such, we investigate whether the hierarchical representation of minority employees signals a greater perceived diversity and, thus, more positive team perceptions.

H1: Hierarchical representation leads to greater perceived team attraction.

H2: Hierarchical representation leads to greater perceived diversity and more positive perceptions of team functioning.

Does group membership moderate the effects of hierarchical representation?

Some prior work suggests that underrepresented minorities (URM) may be more attentive to hierarchical representation compared to non-URM individuals.¹ For instance, Unzueta and Binning (2012) found that minority group members (e.g., Black/African-Americans) define

¹ Based on U.S. employment statistics, we consider people who identify as Black/African-American, Latinx/Hispanic (non-White), American Indian/Alaska Native, and Native Hawaiian as underrepresented minorities (URMs) throughout our studies (Wilson et al., 2021). We consider White (non-Hispanic) and Asian-Americans as non-URMs because of each population's overrepresentation across several professional occupations, including those studied here.

diversity more stringently than do majority group members (i.e., White Americans), considering organizations to be diverse only when minorities are represented both numerically and hierarchically (also see Binning & Unzueta, 2013). In contrast, White Americans considered organizations to be diverse when minorities were represented numerically, even if they lacked hierarchical representation. Likewise, as mentioned above, Avery (2003) found Black recruits were more attracted to firms that represented Black employees in managerial positions, but White recruits' attraction to firms was not dependent on having Black employees in managerial roles.

However, it is also possible that hierarchical representation boosts both URM and non-URM individuals' attraction to a team or an organization. White Americans' attitudes about diversity have become increasingly positive over time. Charlesworth and Banaji (2019) found that implicit attitudes towards Black Americans became more positive between 2007-2016—namely, since Avery's (2003) publication. The Black Lives Matter movement (Sawyer & Gampa, 2018) and the election of Barack Obama (Dasgupta & Asgari, 2004; Dasgupta & Greenwald, 2001; Dasgupta & Rivera, 2008) seem to have contributed, in part, to these more positive implicit attitudes. Ballinger and Crocker (2021) also found that White Americans have become increasingly supportive of affirmative action policies between 2008-2018, and have become more doubtful that affirmative action policies hurt White Americans (e.g., zero-sum beliefs). Indeed, White Americans' more positive attitudes about diversity might have contributed to a weakened “white leadership standard” and more racially inclusive leadership perceptions over this time (Ubaka et al., 2021).

These findings leave open the question of whether the effect of hierarchical representation on perceived attractiveness differs between URM and non-URM individuals. As such, we test two competing hypotheses:

H3a: URM participants' attraction to organizational teams, and their perceptions of those teams' diversity and functioning, will be more affected by hierarchical representation than non-URM participants' attraction to and perceptions of those teams.

H3b: There will be no significant difference in perceived attractiveness, perceived diversity, and perceived team functioning between URM and non-URM participants as a function of hierarchical representation.

Overview of studies

Across four studies, we examine whether people are more attracted to organizational teams that represent diversity throughout their hierarchy, why they are, and whether URM and non-URM participants respond similarly or differently to hierarchical representation. Study 1 examined whether people were more attracted to teams that hierarchically represent minority employees in high rank positions (i.e., teams with hierarchical representation) compared to teams that had identical numerical diversity but only represented White men in high rank positions (i.e., teams without hierarchical representation). In Study 2, we tested whether the effect of hierarchical representation on team attractiveness differed between URM and non-URM participants. We also examined the extent to which hierarchical representation led people to be more attracted to the team, the team's leadership, or the organization overall. In Study 3, we manipulated the numerical diversity of the teams, which allowed us to compare perceptions of diverse teams without hierarchical representation to teams with less numerical diversity. Finally, in Study 4 we manipulated the hierarchical structure and the numerical diversity of the team to

examine how teams with hierarchical representation are perceived relative to non-hierarchical teams. Across all studies, we also tested whether the relationship between hierarchical representation and attraction was mediated by perceived diversity and positive perceptions of team functioning.

All studies were preregistered, and all materials, data, and syntax are publicly available on the Open Science Framework (OSF) at the following link:

https://osf.io/zxp8y/?view_only=51668b72cbd64f879d6a8c944c6acde4). We report all participants and conditions for each study.

Study 1

In Study 1 we tested the hypothesis that people will perceive diverse teams with hierarchical representation (i.e., women and racial minorities represented throughout the team hierarchy) as more attractive than equally diverse teams with no hierarchical representation (i.e., women and racial minorities represented only at low levels of the hierarchy). This experiment was preregistered on AsPredicted.org (https://aspredicted.org/MBZ_9YR)

Method

Participants

We recruited 476 participants through Amazon Mechanical Turk (MTurk) to participate in this experiment in exchange for \$0.65. As preregistered, we excluded participants who did not pass the attention check ($N = 32$), leaving a final sample of 444 participants (58% men, 41% women; $M_{age} = 37$, $SD_{age} = 11$; 69.2% White (non-Hispanic), 8.4% Hispanic, 11.8% Black/African-American, 9.1% Asian/Asian-American, 0.7% Native American/American Indian, and 0.9% Other).

Procedure and design

Participants were randomly assigned to view one of four possible images portraying a company team. The team was comprised of the same fourteen headshots across conditions: four White men, four White women, three Black men, and three Black women. Each team was also organized by job role to make its hierarchy salient: The Project Manager (1 person) was above the Senior Associates (3 people), who were above the Associates (5 people), who were above the Analysts (5 people). See Figure 1.

We kept numerical racial and gender diversity constant by using the same headshots across all conditions. However, across conditions we manipulated whether Black women, Black men, and White women occupied positions at higher levels of the hierarchy (i.e., hierarchical representation) or only positions at lower levels (i.e., no hierarchical representation). We collapsed teams led by Black women, Black men, and White women into a single hierarchical representation condition. Thus, this study had two conditions: hierarchical representation (teams led by Black women, White women, or Black men) or no hierarchical representation (teams led by White men).

[INSERT FIGURE 1 ABOUT HERE]

Measures

Perceived attractiveness. We assessed perceived team attractiveness with two items ($r = .83$): “I would be happy working for this team” and “This would be a great team to work in,” which were rated from 1 (*strongly disagree*) to 7 (*strongly agree*).

Perceived diversity. Participants rated the team’s diversity, equity, and inclusion across seven items (see Online Supplement for full items). Four items (e.g., “How diverse is this team?”) were rated from 1 (*not at all*) to 7 (*extremely*). Three items (e.g., “This team includes people from a variety of different backgrounds”) were rated from 1 (*strongly disagree*) to 7

(*strongly agree*). We standardized all items and created a composite measure of perceived diversity ($\alpha = .91$)².

Perceived team functioning. Participants completed four separate measures regarding the team's functioning: perceived fairness, interpersonal cohesion, performance, and sense of social fit (see Online Supplement for full items). While these measures are conceptually distinct, they correlated very highly with each other ($\alpha = .98$), and a principal components factor analysis using a Varimax rotation revealed that items from the four measures all loaded onto a single factor that explained 62.8% of the variance. Therefore, we standardized each item created a composite measure of perceived team functioning.

Results

Perceived attractiveness

To test our primary hypothesis—that people are more attracted to teams with hierarchical representation compared to teams without it, even when both teams are equally diverse numerically—we conducted an independent samples *t*-test, collapsing across the three *hierarchical representation* conditions. Supporting H1a, participants were more attracted to teams with hierarchical representation ($M = 5.50, SD = 1.32$) than to teams with no hierarchical representation ($M = 4.78, SD = 1.54$), $t(138) = 4.18, p < .001, d = 0.62$.³

We also conducted a one-way ANOVA to explore differences between Black women, Black men, White women, and White men's hierarchical representation on perceived team attractiveness. Results revealed a significant main effect of hierarchical representation on team attractiveness, $F(3, 439) = 9.35, p < .001, \eta_p^2 = .06$. An exploratory post hoc Tukey analysis

² We report descriptive statistics for all individual, unstandardized scale items using in the Table S1.

³ Given the difference in sample sizes across our conditions ($n_{HierRep} = 346, n_{NoHierRep} = 97$), Levene's Test for Equal Variances was significant ($F = 6.75, p = .01$), thus we report the results from Welch's *t*-test above.

revealed a marginally significant difference in perceived attractiveness between teams led by White men ($M = 4.78$, $SD = 1.54$) and teams led by White women ($M = 5.25$, $SD = 1.43$; $t(439) = -2.47$, $p = .066$, $d = -0.34$). Further, teams led by White men were perceived as significantly less attractive than teams led by Black men ($M = 5.51$, $SD = 1.36$; $t(439) = -3.92$, $p = .001$, $d = -0.54$) and Black women ($M = 5.72$, $SD = 1.12$; $t(439) = -5.04$, $p < .001$, $d = -0.69$). See Table 1 for full results from post hoc analysis.

[INSERT TABLE 1 ABOUT HERE]

Perceived diversity and team functioning

We conducted an independent samples t -test to determine whether team hierarchical representation shaped individuals' perceptions of the team's diversity—even though all teams were equal in numerical representation. Results indicated that participants perceived teams with hierarchical representation ($M = 0.15$, $SD = 0.73$) as more diverse than teams without it ($M = -0.43$, $SD = 0.87$), $t(136) = 6.02$, $p < .001$, $d = 0.77$. Participants also perceived teams with hierarchical minority representation ($M = 0.12$, $SD = 0.74$) as higher functioning—that is, as more ethical, more interpersonally cohesive, providing a greater sense of social fit, and higher performing—compared to teams without hierarchical representation ($M = -0.34$, $SD = 0.82$), $t(143) = 5.08$, $p < .001$, $d = 0.62$. See Supplemental Table 2 for post hoc analyses across perceived diversity and perceived team functioning.

Mediation

Next, we conducted an exploratory serial mediation to examine whether perceived diversity and perceived team functioning mediated the relationship between hierarchical representation and team attractiveness using Model 6 of the PROCESS macro (Hayes, 2013) with 10,000 bootstrapped samples. We entered hierarchical representation as the independent

variable, perceived diversity as the first mediator, perceived team functioning as the second mediator, and team attractiveness as the dependent variable. This analysis revealed a significant indirect effect of the full serial mediation model, $b = 0.75$, $SE = 0.13$, 95% CI [0.50, 1.00] (see Figure 2). Relative to the team with no hierarchical representation condition, participants perceived teams with hierarchical representation as more diverse, which in turn correlated with more positive perceptions of team functioning, which correlated with team attractiveness.

As a conservative check of the theorized serial mediation path, we specified the same serial mediation model but with perceived team functioning as the first mediator and perceived diversity as the second mediator. Results revealed a nonsignificant indirect effect of this flipped full serial mediation, $b = 0.06$, $SE = 0.04$, 95% CI [-0.01, 0.15]. This finding provides further support for perceived diversity as a function of hierarchical representation and as an important predictor of team evaluations.

[INSERT FIGURE 2 ABOUT HERE]

Discussion

Study 1 provided initial support for our prediction that people are more attracted to diverse teams when underrepresented minorities are represented throughout the hierarchy, as opposed to concentrated in low-ranking positions. We also found that participants perceived teams with hierarchical representation as more diverse than teams with no hierarchical representation, even though the numerical level of diversity was the same in each team. This study also revealed that differences in perceived diversity helped explain why participants were more attracted to teams with hierarchical representation relative to teams without it. Specifically, participants perceived teams with hierarchical minority representation as more diverse, which

mediated more positive perceptions of team functioning and, in turn, greater attraction towards the team.

Prior work suggests that majority and minority group members perceive hierarchical representation differently (e.g., Avery, 2003; Unzueta & Binning, 2012). However, we found no significant interaction between hierarchical representation and participant race on perceived attractiveness, $F(1, 439) = 0.03, p = .864$. While this alludes to the possibility that non-URM and URM group members respond to hierarchical representation similarly, the distribution of White and non-White participants in the Study 1 sample is imbalanced. Thus, we recruited equivalent samples of URM and non-URM participants in Study 2.

In Study 2, we also sought to address an unanswered question from Study 1. It remains unclear whether individuals focused on the team's hierarchical representation as a whole or focused specifically on the sole individual represented as the leader. For example, did participants view teams in the hierarchical representation conditions more positively because of their hierarchical representation overall, or simply because they had a woman or underrepresented minority at the top of the hierarchy? Relatedly, we are also unable to discern whether individuals are making inferences about the hierarchy as characteristic of the organization broadly, of the team specifically, or of the team leader. It is possible that participants responded more positively in the hierarchical representation conditions because they viewed the broader organization in which the team was embedded, the team itself, or the team leader as more attractive.

Study 2

In Study 2, we examined competing predictions regarding whether non-URM and URM participants differ in their perceptions of teams as a function of the hierarchical representation of

minorities within such work groups. On the one hand, URM participants may respond more positively to teams with hierarchical minority representation than non-URM participants do (H3a). Support for this prediction would be consistent with existing research suggesting that perceptions of diversity align with group-serving biases (e.g., Unzueta & Binning, 2012). On the other hand, URM and non-URM participants may not differ in how attracted they are towards teams with hierarchical minority representation (H3b), because White Americans' attitudes about diversity have become more positive over time (Ballinger & Crocker, 2021). To explore this question, we recruited roughly equivalent samples of non-URM (i.e., White and Asian-American) and URM individuals.

We also investigated whether participants made different attributions about the team based on the teams presented to them. One possibility is that hierarchical representation led people to be more attracted to the *team* because hierarchical representation signaled a more diverse and highly-functioning team. Another possibility is that hierarchical representation led participants to be more attracted to the team's *leader*. Yet another possibility is that hierarchical representation led participants to be more attracted to the *organization* in which the team was embedded. As in Study 1, we predicted that groups with hierarchical representation will be perceived as more attractive than groups without it. We did not, however, specify an a priori prediction as to whether attributions of the team, leader, or organization would drive our results, instead treating this issue as an open research question.

We preregistered this experiment on AsPredicted.org (https://aspredicted.org/G3V_6K6).

Method

Participants

We recruited 231 participants ($N = 126$ URM participants) through MTurk to participate in exchange for \$1.50. In line with our preregistration, we excluded participants who correctly guessed our hypothesis ($N = 13$), leaving us with a final sample of 218 participants (46% women, 54% men; $M_{age} = 37$, $SD_{age} = 11$). The non-URM sample ($N = 111$) was 87% White (non-Hispanic) and 13% Asian/Asian-American. The URM sample ($N = 107$) was 89.7% Black/African-American, 3.7% Hispanic/Latinx, and 6.5% Native American.

Procedure and materials

Participants were asked to view an image of a team within an ostensible organization, SalesSpark, Inc. All participants saw an image of a 14-person team organized in the same hierarchy as in Study 1. Participants were randomly presented a diverse team without hierarchical representation or a diverse team with hierarchical representation.⁴ Next, participants indicated their perceptions of the organization, the team, and the team leader, presented in counterbalanced order. Thus, we used a 2 (hierarchical representation: hierarchical representation vs. no hierarchical representation) x 2 (participant race: non-URM vs. URM) x 3 (attribution level: organization vs. team vs. leader) mixed design ANOVA with hierarchical representation and participant race as between-subjects factors and attribution level as the within-subjects factor for each dependent variable.

Measures

Perceived attractiveness. Participants rated the attractiveness of the leader, team, and the organization with four items for each attribution level (e.g., “I would be happy working for SalesSpark Inc.”). See Online Supplement for full item list. We standardized and averaged all

⁴ As previously, participants in the diverse team with hierarchical representation condition were randomly presented a team with either Black women ($N = 39$), Black men ($N = 39$), or White women ($N = 33$) represented in the highest hierarchical positions.

items to create separate composite measures of perceived attractiveness for the organization ($\alpha = .96$), the team ($\alpha = .95$), and the leader ($\alpha = .95$).

Perceived diversity. Participants indicated perceived diversity at the leader attribution level ($\alpha = .91$) using three items and at the team ($\alpha = .92$) and organization attribution levels ($\alpha = .93$) with four items (e.g., “How equitable does the organization, SalesSpark Inc. seem?”). See Online Supplement for full item list. We standardized and averaged all items to create a composite measure such that positive scores indicated greater perceived diversity.

Perceived functioning. Similar to Study 1, we created composite variables to represent perceived functioning of the team and the organization by standardizing and averaging the items from the perceived fairness, interpersonal cohesion, and sense of social fit scales (see Online Supplement).⁵ Once again, even though these constructs are conceptually distinct, these composite scales correlated very highly with each other ($\alpha_{team} = .98$, $\alpha_{organization} = .99$). A principal components factor analysis (using the Varimax rotation) revealed that all items loaded onto single factors, explaining 72.21% and 72.35% and of the variance for team and organization perceptions, respectively. Therefore, we combined these measures together.

Results

Perceived attractiveness.

We conducted a mixed-design ANOVA with hierarchical representation and participant race as between-subjects factors, and attribution level (the organization, the team, or the leader) as a within-subjects factor. Results revealed a significant main effect of hierarchical representation on attractiveness, $F(1, 214) = 37.53$, $p < .001$, $\eta_p^2 = .15$. Participants reported higher perceived attractiveness in the hierarchical representation condition ($M = 0.36$, $SD = 0.66$)

⁵ Since these items are assessed at the group level, we did not collect these measures at the leader attribution level.

than in the no hierarchical representation condition ($M = -0.32$, $SD = 1.02$). This result replicates our finding from Study 1.

We did not find a significant main effect of participant race on perceived attractiveness, $F(1, 214) = 0.15$, $p = .704$, or a significant interaction between participant race and hierarchical representation, $F(1, 214) = 0.16$, $p = .694$ (see Figure 3). This suggests that White and underrepresented minority participants responded to hierarchical representation similarly.

[INSERT FIGURE 3 ABOUT HERE]

Results did not reveal a significant main effect of attribution level on perceived attractiveness, $F(2, 428) = 0.08$, $p = .922$. There was a significant but weak interaction between hierarchical representation and attribution level, $F(2, 428) = 3.12$, $p = .045$, $\eta_p^2 = .014$.

Participants in the hierarchical representation condition ($M = 0.40$, $SD = 0.65$) rated the leader as more attractive than participants in the no hierarchical representation condition ($M = -0.36$, $SD = 1.01$), $t(179) = -6.59$, $p < .001$, $d = -0.90$. They also rated the team as more attractive ($M = 0.40$, $SD = 0.65$) than participants in the no hierarchical representation condition ($M = -0.36$, $SD = 1.01$), $t(186) = -5.17$, $p < .001$, $d = -0.71$. And they rated the organization as more attractive ($M = 0.40$, $SD = 0.65$) than participants in the no hierarchical representation condition ($M = -0.36$, $SD = 1.01$), $t(179) = -5.65$, $p < .001$, $d = -0.77$. Together, this interaction suggests that hierarchical representation increased attractiveness at all attribution levels, though the effect was strongest for the leader attribution. There was not a significant participant race x attribution level interaction, $F(2, 428) = 0.26$, $p = .772$. Finally, there was not a significant three-way interaction, $F(2, 428) = 0.48$, $p = .621$.

Perceived diversity

Results revealed a significant main effect of hierarchical representation on perceived diversity, $F(1, 214) = 44.01, p < .001, \eta_p^2 = .17$. Replicating Study 1, participants perceived teams with hierarchical minority representation ($M = 0.38, SD = 0.57$) as more diverse than teams with no hierarchical minority representation ($M = -0.34, SD = 1.03$), even though the teams were equally numerically diverse. There was no main effect of participant race, $F(1, 214) < 0.001, p = .993$, and the interaction between hierarchical representation and participant race was not significant, $F(1, 214) = 0.75, p = .387$. We found no significant main effect or any interactions with attribution level (see Online Supplement).

Perceived team functioning

Results revealed a significant main effect of hierarchical representation on perceived team functioning, such that participants perceived teams with hierarchical representation ($M = 0.30, SD = 0.57$) as more highly functioning than teams without it ($M = -0.26, SD = 0.95$), $F(1, 214) = 28.65, p < .001, \eta_p^2 = .12$. We found no significant main effect of participant race, $F(1, 214) = 0.02, p = .887$, and no significant hierarchical representation x participant race interaction, $F(1, 214) = 0.13, p = .716$, on perceived team functioning. We found no significant main effect or any interactions with attribution level (see Online Supplement).

Mediation

As in Study 1, we conducted a serial mediation to examine whether perceived diversity and perceived team functioning mediated the relationship between hierarchical representation and team attractiveness. Given the non-significant main effect of attribution level on perceived attractiveness, diversity, and team functioning, we report the serial mediation model for all variables at the team attribution level here. We include serial mediation models for variables collected at the leader and organization attribution levels in the Online Supplement.

Using Model 6 of the PROCESS macro (Hayes, 2013) with 10,000 bootstrapped samples, we entered hierarchical representation as the independent variable, perceived diversity as the first mediator, perceived team functioning as the second mediator, and team attractiveness as the dependent variable. This analysis revealed a significant indirect effect of the full serial mediation model, $b = 0.35$, $SE = 0.08$, 95% CI [0.21, 0.51] (see Figure 4). This replicates the serial mediation pathway from Study 1. Relative to participants assigned to the no hierarchical representation condition, participants assigned to the hierarchical representation condition perceived such teams as more diverse, which in turn was associated with more positive perceptions of team functioning, and this greater perception of team functioning correlated with greater perceived team attractiveness.

Once again, we specified the same serial mediation model but with perceived team functioning as the first mediator and perceived diversity as the second mediator. Contrary to Study 1, this analysis also revealed a significant indirect effect of the flipped serial mediation pathway, $b = 0.20$, $SE = 0.05$, 95% CI [0.11, 0.30]. These results indicate that the effect of hierarchical representation has a positive effect on perceived attractiveness through perceived diversity and team functioning. However, mediation results reveal that perceived diversity and team functioning are both significant mediators associated with the effect on perceived attractiveness.

[INSERT FIGURE 4 ABOUT HERE]

Discussion

The results of Study 2 suggest that individuals perceive teams with hierarchical representation as more attractive than teams without it, thus replicating the primary result from Study 1. This study also revealed two additional insights. First, we found that non-URM and

URM participants alike perceived teams with hierarchical representation as more attractive than teams with no hierarchical representation. Hierarchical minority representation was associated with greater perceived attractiveness by both majority group (White) and minority group (URM) perceivers. Of note, our comparison of non-URM (White and Asian) and URM (Black, Hispanic/Latinx, Native American) participants differed from the comparisons made in previous research (Unzueta & Binning, 2012), which was between racial majority (e.g., White) and racial minority (e.g., Black and Asian) group members; this might explain the difference in findings. Second, we observed that the effect of hierarchical representation held up across perceptions of the organization, the team, and the team leader. The small but significant interaction between hierarchical representation and attribution level indicated participants responded most strongly to the leader.

Study 3

Many teams and organizations in the real world have numerical diversity but lack hierarchical representation, in that they employ many women and underrepresented minorities, but those employees are clustered in lower positions in the hierarchy (Del Rey, 2021; Greene, 2015). In Study 3 we asked, does having numerical diversity on a team lead to higher perceived attractiveness if that team lacks hierarchical representation, or is such a team perceived similarly to one without numerical diversity? The key comparison in that question is between a) teams that are numerically diverse but lacking in hierarchical representation and b) teams that lack numerical diversity—a comparison we were unable to make in Studies 1 and 2 because all teams had equivalent numerical diversity. Therefore, in Study 3, in addition to manipulating hierarchical representation, we also manipulated the level of numerical diversity by adding a

third, low diversity condition, with fewer minority employees than the teams with numerical diversity.

We predicted that teams with hierarchical representation would be perceived as more attractive and more diverse than teams without it or teams with low overall diversity. We predicted a linear trend, such that teams with numerical diversity and hierarchical representation would be perceived as the most attractive, followed by teams with numerical diversity but no hierarchical representation, and then teams without numerical diversity. We continued examining perceived diversity and perceived team functioning as mechanisms for the observed effect between hierarchical representation and perceived attractiveness. As in Study 2, we recruited equivalent samples of URM and non-URM participants to examine whether participant race influenced perceived attractiveness, diversity, and team functioning. We preregistered this experiment on AsPredicted.org (https://aspredicted.org/RSB_4DV).

Method

Participants

We recruited 315 participants ($N = 156$ racial minority participants) through MTurk to participate in this experiment in exchange for \$0.65. In line with our preregistration, we excluded participants who did not pass our attention check ($N = 16$) or who correctly guessed that our study pertained to the hierarchical representation of diversity ($N = 3$). This resulted in a final sample of 296 participants (44% women; 56% men; $M_{age} = 36$, $SD_{age} = 11$). The racial majority group sample ($N = 153$) was 88.2% White (non-Hispanic) and 11.8% Asian/Asian-American. The racial minority group sample ($N = 143$) was 50.3% Black/African-American, 33.6% Hispanic/Latinx, 8.4% Native American, 2.1% Pacific Islander, and 5.6% who reported other ethnicities.

Procedure and materials

This study utilized a 3 (representation: diversity with hierarchical representation, diversity with no hierarchical representation, low diversity and no hierarchical representation) x 2 (participant race: majority vs. minority group) between-subjects design. Participants were randomly assigned to one of three conditions in which they viewed an image of a fourteen-person team organized in a hierarchy. We used the same hierarchical representation and no hierarchical representation conditions from Study 1.⁶ In the new, low diversity condition, however, participants viewed a team of ten White men, two White women, one Black man, and one Black woman and only White men were represented in the upper levels of the team hierarchy. After viewing the team, participants reported the team's attractiveness, the team's diversity, and its functioning. Finally, participants indicated their age, marital status, sexual orientation, education, household income, and political orientation.

Measures

Perceived attractiveness. We measured perceived team attractiveness using the same two-item measure from Study 1 ($r = .88$).

Perceived diversity. Participants assessed perceived diversity with eight items (e.g., "This team has a high level of diversity"; for the full list of items see Online Supplement). We standardized and averaged all items to create a measure of perceived diversity ($\alpha = .91$).

Perceived team functioning. We used the same measures of the perceived fairness, interpersonal cohesiveness, and sense of social fit scales from Studies 1 and 2. As before, these measures correlated very highly with each other ($\alpha = .98$) and a principal components factor

⁶ As in Study 1, we collapsed teams led by Black women, Black men, and White women into a single hierarchical representation condition.

analysis (using the Varimax rotation) revealed that all items loaded onto a single factor, explaining 64.87% of the variance. Therefore, we again combined the measures together.

Results

Preliminary analysis: Effect of participant race on team perceptions

We examined whether URM and non-URM participants differed in their responses to hierarchical representation by conducting a 3 (team composition) x 2 (participant race) ANOVA on perceived attractiveness, diversity, and team functioning. Results revealed no significant main effects of participant race nor any significant hierarchical representation x participant race interactions. We report full ANOVA results in the Online Supplement.

Perceived attractiveness

A one-way ANOVA revealed a significant main effect of hierarchical representation on perceived attractiveness, $F(2, 293) = 13.29, p < .001, \eta_p^2 = .083$ (see Figure 5). We found a linear trend of the team composition conditions on perceived attractiveness, $F(1, 293) = 17.48, p < .001$. Planned linear contrasts revealed that participants perceived the team with hierarchical representation ($M = 5.56, SD = 1.32$) as more attractive than the team with no hierarchical representation ($M = 4.52, SD = 1.63$), $t(293) = 4.73, p < .001, d = 0.68$, and than the team with low diversity ($M = 4.64, SD = 1.63$), $t(293) = 4.18, p < .001, d = 0.60$. However, participants did not perceive the team with diversity but no hierarchical representation as any different than the team with low diversity, $t(293) = -0.55, p = .581, d = -0.08$. Contrary to our prediction, this finding suggests that the trend is likely driven by differences between the hierarchical representation condition and the other team composition conditions (i.e., low diversity and no hierarchical representation) as opposed to differences between each individual condition. This

also suggests that increasing the number of minority members on the team does not make the team more attractive if that diversity is clustered at the bottom of team hierarchies.

[INSERT FIGURE 5 ABOUT HERE]

Perceived diversity and team functioning

A one-way ANOVA revealed a significant main effect of team composition on perceived diversity, $F(2, 293) = 26.39, p < .001, \eta^2 = .153$. Here we found a linear trend, $F(1, 293) = 51.06, p < .001$. Planned contrasts revealed that participants perceived the diverse team with hierarchical representation ($M = 0.43, SD = 0.71$) as more attractive than the diverse team with no hierarchical representation ($M = -0.07, SD = 0.75$), $t(293) = 4.77, p < .001, d = 0.68$, and than the team with low diversity ($M = -0.32, SD = 0.72$), $t(293) = 7.15, p < .001, d = 1.02$. Additionally, participants perceived the team with no hierarchical representation as significantly more diverse than the team with low diversity, $t(293) = 2.40, p = .017, d = 0.34$.

A one-way ANOVA revealed a significant main effect of team composition on perceived team functioning, $F(2, 293) = 10.62, p < .001, \eta^2 = .068$. We found a linear trend, $F(1, 293) = 12.82, p < .001$. Planned contrasts revealed that participants perceived the diverse team with hierarchical representation ($M = 0.30, SD = 0.69$) as more highly functioning than the diverse team with no hierarchical representation ($M = -0.18, SD = 0.83$), $t(293) = 4.32, p < .001, d = 0.62$, and than the team with low diversity ($M = -0.09, SD = 0.80$), $t(293) = 3.58, p < .001, d = 0.51$. However, perceptions of team functioning were not significantly different between the diverse team with no hierarchical representation and the team with low diversity, $t(293) = -0.75, p = .455, d = -0.11$. Given this nonsignificant difference, we cannot conclude that we find support of the predicted significant linear trend.

Mediation

We tested the serial mediation model using Model 6 of the PROCESS macro (Hayes, 2013) with 10,000 bootstrapped samples. We first combined the low diversity team with the diverse team that lacked hierarchical representation, coded as 0, and compared those conditions to the diverse team with hierarchical representation condition, coded as 1. We entered hierarchical representation as the independent variable, perceived diversity as the first mediator, perceived team functioning as the second mediator, and perceived team attractiveness as the dependent variable. Results revealed a significant indirect effect of hierarchical representation on perceived attractiveness through perceived diversity and perceived team functioning, $b = 0.79$, $SE = 0.13$, 95% CI [0.55, 1.01]. See Figure 6. Relative to participants assigned to the no hierarchical representation or low diversity team conditions, participants in the hierarchical representation condition perceived the team as more diverse, which was associated with more positive perceived team functioning and, in turn, greater perceived attractiveness.⁷

[INSERT FIGURE 6 ABOUT HERE]

Discussion

The results of this study again supported our key hypothesis (H1): participants perceived teams with hierarchical representation as more attractive than teams without hierarchical representation. We also again found no differences between URM and non-URM participant perceptions of attractiveness, diversity, and team functioning. Additionally, Study 3 revealed that participants saw numerically diverse teams without hierarchical representation as unattractive as teams with numerically low diversity. This suggests that numerical diversity does not enhance perceived attractiveness unless that diversity is represented throughout the hierarchy.

⁷ We conducted a reverse serial mediation model, including perceived team functioning as M1 and perceived diversity and M2. Results indicated a significant indirect effect for the flipped mediation model. Full mediation results can be found in the Online Supplement.

Study 4

In Studies 1-3 we consistently found that teams with hierarchical representation were considered more attractive than teams without it. However, there are two ways this effect of hierarchical representation might be interpreted. First, hierarchical representation might make a team even more attractive than a flat team (i.e., a team with no hierarchy) with the same level of numerical diversity. We call this the *hierarchical representation is a bonus* account, because the hierarchical representation in a hierarchical team is viewed even more positively than the numerical diversity of a non-hierarchical team. Second, hierarchical representation might not make a team any more attractive than a flat and diverse team; instead, a hierarchical team without hierarchical representation might be viewed as unattractive as a flat team that lacks diversity. We call this the *hierarchical representation is a necessity* account because it suggests that if a diverse team is hierarchical, it must also have hierarchical representation to appear as diverse as a flat and diverse team. We pre-registered two competing hypothesis for this study on OSF (<https://osf.io/s24dt>)

To test these competing hypotheses, we included two new conditions in Study 4 and manipulated whether the teams had a hierarchy or not. Half of the participants viewed a team organized in the same pyramid-like hierarchy as in Studies 1-3 (i.e., *team with hierarchical representation* and *team without hierarchical representation* conditions). The other half of participants viewed a team with a flat non-hierarchical team, organized in a circle, consistent with prior research (e.g., Bunderson et al., 2016; Yu et al., 2019; Zitek & Tiedens, 2012). In one of these conditions—the *flat diverse* condition—participants viewed a team organized in a circle that was equally numerically diverse as the teams in the hierarchy conditions. In the other condition—the *flat non-diverse* condition—participants viewed a team organized in a circle that

was less diverse. Study 4 thus included four conditions: hierarchy with hierarchical representation, hierarchy without hierarchical representation, flat with numerical diversity, and flat without numerical diversity.

Method

Participants

We recruited 599 participants from Prolific to participate in this experiment in exchange for \$0.95. In line with our pre-registered exclusions, we excluded two people who correctly guessed our hypothesis. This resulted in a final sample of 597 participants (50.3% women, 48.6% men; $M_{age} = 35.84$, $SD_{age} = 13.09$; 61.3% White (non-Hispanic) and 21.6% Asian/Asian-American, 5.0% Black/African-American, 8.2% Hispanic/Latinx, 0.5% Native American, 0.2% Pacific Islander, 3.0% Multi-racial, and 0.2% who reported “Other”).

Procedure and materials

We randomly assigned participants to one of four conditions. Participants in the *no hierarchical representation* condition viewed the same team composition that participants did in the same condition in Study 1. Participants in the *hierarchical representation* condition viewed the Black-women led team from Study 1. Both of these stimuli presented a team with four White men, four White women, three Black men, and three Black women and thus had the same numerical diversity. Participants assigned to the *flat diverse* team condition viewed a team arranged in a circle that contained the same White men, White women, Black men, and Black women as the hierarchical representation conditions. Participants assigned to the *flat non-diverse* team condition viewed a team arranged in a circle with ten White men, two White women, one Black man, and one Black woman (see Figure 7) – the same team members in the low diversity

condition from Study 3. After viewing the team, participants reported perceived team attractiveness, diversity, and perceived team functioning.

[INSERT FIGURE 7 ABOUT HERE]

Measures

Perceived attractiveness. We measured perceived attractiveness using the same two-item measure from Study 1 ($r = .94$).

Perceived diversity. We measured perceived diversity using the same items from Study 3 ($\alpha = .95$). We standardized and averaged all items to create a composite measure such that positive scores indicated greater perceived diversity.

Perceived team functioning. We measured perceived team functioning using the same items from Study 3. We standardized and averaged all items to create a composite measure such that positive scores indicated more positive perceptions of team dynamics. This composite scale again demonstrated good reliability ($\alpha = .98$) and a principal components factor analysis (using the Varimax rotation) again revealed that all items loaded onto a single factor, explaining 69.20% of the variance.

Results

Perceived attractiveness

A one-way ANOVA revealed a significant omnibus effect of team composition condition on perceived attractiveness, $F(3, 593) = 54.27, p < .001, \eta^2 = .22$. All means are shown in Figure 8. Pairwise comparisons using the Tukey adjustment showed that participants perceived the hierarchical team with hierarchical representation ($M = 5.64, SD = 1.16$) more positively than the hierarchical team with no hierarchical representation ($M = 4.05, SD = 1.60, t(593) = -10.14, p < .001, d = 1.17$) thereby replicating our previous findings. Participants perceived the team with

hierarchical representation no differently than a flat team with the same level of diversity ($M = 5.45$, $SD = 1.16$; $t(593) = 1.23$, $p = .607$, $d = 0.14$). This null effect casts doubt on the *hierarchical representation is a bonus* account. Interestingly, participants perceived a hierarchical team with no hierarchical representation no differently than a flat non-diverse team ($M = 4.23$, $SD = 1.47$, $t(593) = -1.17$, $p = .647$, $d = -0.14$). See Table 2 for all post-hoc comparison between team composition conditions. Therefore, these findings support the *hierarchical representation is a necessity* account, by showing that if a team is hierarchically structured, it must have hierarchical representation to be considered as attractive as a diverse flat team. In contrast, if a hierarchical team does not have hierarchical representation, it is no more attractive than a flat team with low numerical diversity.

[INSERT FIGURE 8 ABOUT HERE]

[INSERT TABLE 2 ABOUT HERE]

Perceived diversity

We also found a significant omnibus effect of team composition condition on perceived diversity, $F(3, 593) = 128.06$, $p < .001$, $\eta^2 = .39$. Participants perceived the hierarchical team with hierarchical representation ($M = 0.57$, $SD = 0.56$) as more diverse than the hierarchical team with no hierarchical representation ($M = -0.39$, $SD = 0.78$; $t(593) = -12.20$, $p < .001$, $d = 1.41$). Participants perceived the hierarchical team with hierarchical representation no differently than the flat diverse team ($M = 0.50$, $SD = 0.58$; $t(593) = 0.891$, $p = .81$, $d = 0.10$). This null result provides further evidence against the *hierarchical representation is a bonus* account. Additionally, participants perceived the hierarchical team with no hierarchical representation as significantly more diverse than the flat non-diverse team ($M = -0.68$, $SD = 0.76$; $t(593) = 3.65$, $p = .002$, $d = 0.42$). See Table 2 for post-hoc comparisons.

Perceived team functioning

We found a significant omnibus effect of team composition condition on perceived team functioning, $F(3, 593) = 47.71, p < .001, \eta^2 = .19$. Participants perceived the team with hierarchical representation ($M = 0.40, SD = 0.67$) as more high functioning than the hierarchical team with no hierarchical representation ($M = -0.43, SD = 0.88; t(593) = -9.55, p < .001, d = 1.22$). However, participants perceived teams with hierarchical representation no differently than flat diverse teams ($M = 0.32, SD = 0.64; t(593) = 0.92, p = .80, d = 0.12$) in relation to team functioning. Finally, participants perceived teams with no hierarchical representation and the flat diverse team ($M = 0.32, SD = 0.64$) no differently than a flat non-diverse team ($M = -0.30, SD = 0.78, t(593) = -1.45, p = .47, d = -0.19$). See Table 2 for post-hoc comparisons.

Mediation

We tested the full serial mediation model using Model 6 of the PROCESS macro (Hayes, 2013) with 10,000 bootstrapped samples as in previous studies. We entered team composition as a multicategorical independent variable, perceived diversity as the first mediator, perceived team functioning as the second mediator, and perceived attractiveness as the dependent variable. Team composition was coded 0 for teams with no hierarchical representation, 1 for teams with hierarchical representation. Results revealed a significant indirect effect such that hierarchical teams with hierarchical representation were perceived as more diverse than hierarchical teams without hierarchical representation, which in turn predicted higher perceived team functioning and perceived attractiveness towards the team, $b = 0.94, SE = 0.10, 95\% CI [0.74, 1.14]$. See Online Supplement for full serial mediation results.

Discussion

Replicating our previous studies, participants perceived teams with hierarchical representation as more attractive than teams without it. The results of this study extended beyond our prior findings and provided support for the *hierarchical representation is a necessity* account: If a team had a hierarchical structure, it needed to also have hierarchical representation in order to be as attractive as a flat diverse team. If a team had a hierarchical structure but lacked hierarchical representation, it was no more attractive than a flat non-diverse team. Similar to Study 3, teams that had diversity only at lower levels of the hierarchy were no more attractive than teams with numerically less diversity. Furthermore, the team with hierarchical representation was again perceived as more diverse relative to the team with no hierarchical representation, which was associated with more positive evaluations of and greater attractiveness towards the team. Given that hierarchical representation and flat diverse teams were both seen as more diverse than the no hierarchical representation team, these results indicate that failing to represent diverse talent throughout the team hierarchy may dampen perceptions of diversity.

Internal Meta-Analysis

To examine the combined evidence across Studies 1-4, we conducted an internal meta-analysis to determine two aggregate effect sizes: (1) the effect of hierarchical representation (compared to no hierarchical representation) on perceived attractiveness and (2) the interaction between hierarchical representation and participant race in predicting perceived attractiveness. We computed the Study 2 effect size using the perceived team attractiveness variable—as opposed to the perceived leader and organization attractiveness variables—to be most comparable to the perceived attractiveness outcome variables in Studies 1, 3, and 4. The Study 3 and 4 effect sizes includes only the two primary conditions, the hierarchical representation and no hierarchical representation conditions, to be comparable to Studies 1 and 2. In total, this

internal meta-analysis included four effect size estimates from 1,156 participants.⁸ There was a significant meta-analytic effect of hierarchical representation on perceived attractiveness, $r = 0.364$, $SE = 0.05$, 95% CI [0.266, 0.461], $z = 7.31$, $p < .001$. See Figure 9. There was not a significant meta-analytic interaction between hierarchical representation x participant race in predicting perceived attractiveness, $r = 0.0141$, $SE = 0.03$, 95% CI [-0.044, 0.072], $z = 0.476$, $p = .634$. See Figure 10. With this combined sample size, we were equipped to detect a small interaction, specifically Cohen's $d = 0.209$, with 95% power for $\alpha = .05$.⁹ Therefore, this provides confidence that the null interaction effect was not due to a lack of statistical power.

[INSERT FIGURES 9-10 ABOUT HERE]

General Discussion

Across four studies, we found consistent evidence that individuals perceive teams with hierarchical representation of underrepresented minorities as more attractive than equally diverse teams that lacked hierarchical representation. When we held diversity constant across conditions, participants perceived teams with hierarchical representation as more attractive than teams with no hierarchical representation (Studies 1 and 2). When we manipulated team diversity, participants perceived no difference between teams without hierarchical representation and teams with lower numerical diversity (Study 3). When we manipulated both team diversity and hierarchy in, participants perceived diverse teams without hierarchical representation as less attractive than diverse teams with hierarchical representation and flat diverse teams (Study 4). Interestingly, we found no group differences between URM and non-URM participants in terms

⁸ This internal meta-analysis includes all studies that we conducted to test the relationship between hierarchical representation condition and participant race.

⁹ We used the `pwr()` package in *R* to conduct this sensitivity analysis using the following parameters: $k = 4$, $n = 393.5$, $sig.level = 0.05$, $power = 0.95$. We then translated cohen's $f(0.105)$ to cohen's d using this website: <https://www.escale.site/>

of how attractive participants perceived teams with hierarchical representation relative to teams without hierarchical representation. Finally, across all studies participants were more attracted to teams with hierarchical representation because hierarchically represented teams were perceived as more diverse and as having more positive team functioning. Collectively, these studies suggest that to the extent team hierarchies are deemed necessary, so too is having diversity represented throughout it.

Theoretical and practical implications

Beyond illustrating that individuals positively perceive diverse teams with hierarchical representation over those without it, our findings contribute to our theoretical understanding of the relationship between group diversity and organizational hierarchy. Past research has shown that hierarchical representation impacts organizational attractiveness (e.g., Avery, 2003; Lewis, 2020) independent of its effect on perceived diversity (Binning & Unzueta, 2013; Unzueta & Binning, 2012). Our results show that perceived diversity is an important determinant of the relationship between hierarchical representation and organizational perceptions, such as attractiveness and perceived team functioning.

The present research also contributes to the extant hierarchical representation literature (Avery, 2003; Unzueta & Binning, 2012) with findings that contrast it. Across three studies, we found no significant differences in how URM (i.e., Black, Latinx, Native American) and non-URM (i.e., White and Asian) participants perceived teams with hierarchical representation, on perceived attractiveness, diversity, and team functioning. Contrary to Unzueta and Binning (2012), we find no evidence that only URM participants consider hierarchical representation in addition to numerical representation. This finding raises the possibility that non-URMs defined diversity in a more specific manner when engaging with our stimuli, taking both numerical and

hierarchical representation into account, than found in previous research. These conflicting results nevertheless shed light on the importance of hierarchical representation on how people evaluate diversity and organizations trying to promote diversity.

Our finding that individuals consider numerical and hierarchical representation of minority group members also underscores the importance of accounting for horizontal *and* vertical member differences in organizational diversity research. It is well-documented in the diversity literature that group diversity can foment negative team processes (e.g., lower team cohesion, lower belonging, greater conflict) but this work often fails to consider hierarchical differences that may exist within such groups (see Bunderson & Van der Vegt, 2018 for review). However, when specific demographic characteristics (e.g., employee race and/or gender) are consistently related with low-ranking job positions, perceivers notice and adjust their assessments of the group accordingly. Thus, simply having racial and gender diversity is not enough to dissuade concerns about workplace diversity and belonging. In fact, failing to represent minorities throughout the hierarchy may send signals that the team is less ethical, less cohesive, and more socially exclusive to observers.

Practically, our results suggests that organizations have little to lose by ensuring diversity is represented at every level of their hierarchy. In fact, our results indicate that the failure to hierarchically represent minority employees obscures the diversity within the team, thereby counteracting the very diversity-valuing goals many organizations seek to advance. As such, organizations would benefit from setting (and attaining) goals that ensure people marginalized by racism and/or sexism are equitably represented at all levels of the hierarchy. Further, as research has shown that diversity in the form of representation is not adequate without efforts to increase inclusion (Wilton et al., 2020), it would benefit practitioners to expand upon our results and

ensure minorities are not simply represented in positions of status and power, but that they also feel a sense of belonging and psychological safety. Thus, it would be important for future research to explore the relationship more systematically between hierarchical representation and perceived inclusion.

Limitations and Future Directions

While we find robust evidence that teams with hierarchical representation are perceived to be more attractive than teams with no hierarchical representation across our studies, the current research has several limitations. One primary limitation is that our findings are perceptual. Specifically, the lay-perceptions individuals have towards an ostensible team may not align with the perceptions people have when deciding whether (or not) to pursue certain jobs. A growing body of research has illustrated that job seekers take many factors into account when making job pursuit decisions, such as the congruence between leadership demographics and diversity statements (Abraham & Burbano, 2021) or recruitment materials (Avery, 2003; Wilton et al., 2020). It would be important for future research to systematically examine whether individuals are more likely to pursue and accept jobs with diverse teams with hierarchical representation and avoid (or abandon) jobs with teams with no hierarchical representation.

Although we sought to ensure the effect of hierarchical representation was not due to idiosyncratic features of representing a particular racial and/or gender group member in high-ranking positions, we unexpectedly found some differences between the hierarchical representation conditions in terms of perceived attractiveness, diversity, and team functioning (see Table 1 and Table S2). This suggests that perceivers distinguished between teams led by Black women, Black men, or White women when assessing the teams. However, we did not have enough power across studies to adequately examine the veracity of these differences at the

intersection of employee gender and race. Future research would greatly benefit from understanding whether (and how) hierarchical representation are shaped by intersectional identities.

Another limitation is that we relied on a similar hierarchical structure across studies. Recent research suggests that people have different mental representation of hierarchies (Yu et al., 2019), which shape how people perceive interpersonal relationships and organizational effectiveness (Fath et al., 2017; Halevy et al., 2011). For instance, pyramid-shaped hierarchies—akin to the hierarchies utilized in the current research—were associated with more positive social relationships and performance compared to ladder-shaped hierarchies (Yu et al., 2019). While we compared hierarchical teams to non-hierarchical teams in Study 4, we did not consider whether various hierarchical structures influenced individuals' perceptions of diversity and, thus, perceive attraction towards the team. We hope future research examines whether various hierarchical structures influence how people evaluate teams.

Conclusion

Despite the common practice of publicly portraying commitments to diversity, equity, and inclusion efforts within organizations, people marginalized by racism and/or sexism still remain vastly underrepresented in high-ranking positions. The present studies indicate that one way organizations can effectively signal a commitment to diversity is to ensure that minority employees are adequately represented throughout their hierarchy. Perhaps even more important, these findings highlight that when organizations fail to do so, they may obscure the level of diversity that may already exist within their firm. Thus, it is crucial that organizations find ways to achieve hierarchical representation as a way to effectively signal their commitment to diversity.

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Tables

Table 1

Post hoc comparisons of hierarchical representation conditions on perceived attractiveness (Study 1)

Contrast	Estimate	SE	df	<i>t</i>	<i>p</i>	<i>d</i>
White men - White women	-0.47	0.19	439	-2.47	0.066	-0.343
White men - Black men	-0.74	0.19	439	-3.92	0.001	-0.539
White men - Black women	-0.94	0.19	439	-5.04	< .001	-0.691
White women - Black men	-0.27	0.18	439	-1.48	0.450	-0.196
White women - Black women	-0.48	0.18	439	-2.64	0.043	-0.348
Black men - Black women	-0.21	0.18	439	-1.16	0.650	-0.152

Note. Post hoc comparison performed using the Tukey adjustment.

Table 2*Post hoc comparisons of team composition conditions in Study 4*

Outcome variable	Comparison	Estimate	SE	df	t	p
Perceived attractiveness	No HierRep vs. HierRep	-1.60	0.157	593	-10.14	<.001
	No HierRep vs. Flat diverse	-1.40	0.157	593	-8.91	<.001
	No HierRep vs. Flat non-diverse	-0.18	0.158	593	-1.17	.647
	HierRep vs. Flat diverse	0.19	0.157	593	1.23	.607
	HierRep vs. Flat non-diverse	1.41	0.157	593	8.98	<.001
	Flat diverse vs. Flat non-diverse	1.22	0.157	593	7.75	<.001
Perceived diversity	No HierRep vs. HierRep	-0.96	0.078	593	-12.20	<.001
	No HierRep vs. Flat diverse	-0.89	0.078	593	-11.31	<.001
	No HierRep vs. Flat non-diverse	0.29	0.079	593	3.65	.002
	HierRep vs. Flat diverse	0.07	0.078	593	0.89	.810
	HierRep vs. Flat non-diverse	1.24	0.078	593	15.88	<.001
	Flat diverse vs. Flat non-diverse	1.17	0.078	593	14.99	<.001
Perceived team functioning	No HierRep vs. HierRep	-0.83	0.087	593	-9.55	<.001
	No HierRep vs. Flat diverse	-0.75	0.087	593	-8.64	<.001
	No HierRep vs. Flat non-diverse	-0.13	0.087	593	-1.45	.466
	HierRep vs. Flat diverse	0.08	0.086	593	0.92	.795
	HierRep vs. Flat non-diverse	0.70	0.086	593	8.11	<.001
	Flat diverse vs. Flat non-diverse	0.62	0.086	593	7.19	<.001

Notes. Post hoc analysis performed using the Tukey adjustment. No HierRep = No hierarchical representation condition. HierRep = hierarchical representation condition.

Figures

Figure 1. Hierarchical representation conditions used in Study 1. Panels A-C display *hierarchical representation* conditions. Panel D displays the *no hierarchical representation* condition.

Figure 2. Serial mediation model illustrating the relationship between hierarchical representation on perceived team attractiveness, as mediated by perceived diversity and perceived team functioning in Study 1. Unstandardized coefficients are displayed. The direct effect of hierarchical representation on attractiveness is displayed in italics. * $p < .05$, *** $p < .001$.

Figure 3. The effect of hierarchical representation and participant race on perceived attractiveness. Perceived attractiveness ratings are standardized. Error bars represent $\pm$ standard error around the mean (SEM).

Figure 4. Serial mediation model illustrating the relationship between hierarchical representation on perceived team attractiveness, as mediated by perceived diversity and perceived team functioning in Study 2. Unstandardized coefficients are displayed. The direct effect of hierarchical representation on attractiveness is displayed in italics. *** $p < .001$.

Figure 5. Effect of hierarchical representation on perceived attractiveness in Study 3. Error bars represent $\pm$ SEM.

Figure 6. Serial mediation model illustrating the relationship between hierarchical representation on perceived team attractiveness, as mediated by perceived diversity and perceived team functioning in Study 3. Unstandardized coefficients are displayed. The direct effect of hierarchical representation on attractiveness is displayed in italics. *** $p < .001$.

Figure 7. Flat non-diverse (*left*) and flat diverse (*right*) conditions used in Study 4.

Figure 8. The effect of hierarchical representation on perceived attractiveness in Study 4. Brackets indicate significant differences at the $p < .001$ level. Error bars represent $\pm$ SEM.

Figure 9. The effect of hierarchical representation on perceived attractiveness across Studies 1-4. Internal meta-analysis conducted using the *metafor()* package in *R*.

Figure 10. The interactive effect between hierarchical representation and participant race on perceived attractiveness across Studies 1-4. Internal meta-analysis conducted using the *metafor()* package in *R*.