Journal of Experimental Psychology: General

ISSN: 0096-3445

2024, Vol. 153, No. 11, 2715–2728
https://doi.org/10.1037/xge0001557

Contextual Influences on Individual Targets' Perceived Contributions to Group Diversity

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Many organizations want to achieve diversity, yet who "counts" as contributing to diversity is malleable. Across four experiments, we explore how contextual influences shape perceptions of diversity, including what happens when information at different contextual levels conflicts. In Study 1 ($N = 160$) and Study 2 ($N = 69$, preregistered), we find that when participants believe White women, White men, and Black men to be overrepresented in a profession at the national level, individuals with those identities are rated as contributing less to the diversity of a group of workers within that profession. In Study 3 ($N = 164$), participants were asked to make diversity judgments within the same profession (American elementary school teachers), but the composition of the target group under evaluation was either White female-dominated (aligned with the profession) or White male-dominated (diverged from the profession). Presenting the group as White male-dominated (compared to White female-dominated) increased perceptions of White women's contributions to diversity and decreased perceptions of White men's, and men of color's, contributions to diversity. In Study 4 ($N = 216$, preregistered), we attempted to call participants' attention to representation at a single level only (i.e., national vs. target group), when representation information conflicted across levels. However, perceived contributions to diversity did not shift based on experimental conditions. It appears that Americans' judgments of who increases a group's diversity can be affected by representation at multiple levels, although it may be difficult for perceivers to prioritize one contextual level only when such information conflicts.

Public Significance Statement
This research finds that, when asked to judge who should be added to a team to increase the group's diversity, people take into consideration whether certain race and gender identities are represented in the profession at the national level as well as within the target group itself. However, when national and target group representation differ, it appears to be difficult to get people to pay attention to only one of those pieces of information at a time when they are making judgments about who would add the most to a group's level of diversity.

Keywords: diversity, context, representation, social perception

Supplemental materials: https://doi.org/10.1037/xge0001557.supp

Many organizations strive to achieve diversity among their members. Often, efforts to diversify are centered around increasing the numerical representation of different groups of people within an organization, for example, hiring individuals who have identities that are underrepresented within the organization, or even the broader profession. However, not every person shares the same definition of who "counts" as contributing to an organization's diversity. While some social groups are generally perceived as contributing more to diversity than others, such as people of color relative to White people (Unzueta & Binning, 2010), definitions of diversity are subjective and reflect the perceiver's own characteristics and motives (e.g., Bauman et al., 2014; Lowery et al., 2006; Unzueta & Binning, 2010). As a result, stakeholders may disagree about what characteristics contribute to diversity, and by extension, the best steps to take to diversify.

Further complicating this issue is that efforts to increase an organization's diversity do not take place in a vacuum. Organizations seeking to increase representation often exist within broader social institutions and domains themselves (e.g., tech, helping professions, the U.S. workforce), and these broader domains may lack representation in ways that align or do not align perfectly with the

This article was published Online First March 21, 2024.
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This work was supported by National Science Foundation DGE-1943041 to Jacqueline M. Chen. These data have not been disseminated elsewhere. A link to Study 2 and Study 4's preregistration and all studies' data, code, and materials can be found here: https://osf.io/bwqe8/?view_only=441fa77045c94368a6846ec0434054a2.

Danielle M. Geerling served as lead for formal analysis, investigation, project administration, and writing–original draft. Jacqueline M. Chen served as lead for funding acquisition and served in a supporting role for formal analysis, investigation, and writing–original draft. Danielle M. Geerling and Jacqueline M. Chen contributed equally to conceptualization, writing–review and editing, and methodology.

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composition of a particular organization. In this research, we acknowledge this complexity by systematically investigating how representation information at multiple contextual levels (e.g., national representation vs. representation in the group seeking to diversify) shapes perceptions of individual contributions to group diversity. We contribute to the existing literature on perceived contributions to diversity in two primary ways: (a) Illustrating what characteristics of contexts (and at which contextual levels) affect perceived contributions to diversity and (b) Exploring how diversity judgments are impacted when representation information at different levels provide conflicting accounts of diversity.

During organizational efforts to diversify, people are often asked to make decisions about which individuals should be added (or hired, or promoted) in order to increase that group's diversity; that is, they are tasked with making social perceptions or judgments about a target individual's contributions to a group's level of diversity. Such perceptions of an individual's contributions to diversity are determined, in part, by the target individual's own characteristics. For example, in the United States, people tend to associate diversity with race and, to a lesser extent, gender (Chen, 2012). Overall, people of color are believed to contribute more to a group's diversity than White people (Unzueta & Binning, 2010); further, women of color (double-minorities along dimensions of race and gender) are believed to contribute more to diversity than their mono-minority counterparts (i.e., men of color and White women; Geerling & Chen, 2021). Thus, some target characteristics are generally perceived as contributing more to diversity than others.

However, judgments about who contributes to a group's diversity are also subject to influences from the perceiver, including the perceiver's own identities, characteristics, and motives. Perceivers often have different definitions of what "diversity" means. White people tend to define diversity broadly, such that they possess a lower "threshold" at which a group is believed to be considered sufficiently diverse (Danbold & Unzueta, 2020) and any type of representation may satisfy their definition of diversity, while people of color tend to require minority group representation at multiple levels of an organizational hierarchy (Binning & Unzueta, 2013; Unzueta & Binning, 2012) and feelings of acceptance and inclusion among minority group members (Chen & Hamilton, 2015).

Moreover, the perceived contributions to diversity of certain targets can shift based on who is making the judgment (i.e., the perceiver). In Unzueta and Binning (2010), perceivers' own racial identities impacted their judgments about minority racial groups' contributions to diversity. For example, Asian American participants were the only group of perceivers to rate Asian Americans as contributing as much to diversity as Black and Latine Americans. This coheres with Bauman et al.'s (2014) findings that Black and Asian American perceivers, especially those who were high in racial identification, perceived greater group diversity when their own ingroup members were well-represented, as well as results from Lowery et al. (2006) indicating the existence of an ingroup preference for majority group members.

Nonetheless, broader contextual influences on diversity judgments cannot be overlooked. White individuals' perceptions of bias differ based on whether racial progress within the larger context of the United States is salient (Wilkins & Kaiser, 2014). In organizational contexts specifically, the presence of diversity statements and structures, such as training programs, affect the extent to which people expect fairness and equality within that organization (Brady et al., 2015; Kaiser et al., 2013; Mckay & Avery, 2005; Wilton et al., 2015). Organizations that work within the same broader domain may also set descriptive social norms regarding the level of diversity that is considered sufficient (i.e., how many women "should" be on a board for it to be considered diverse) and the dimensions of diversity that are relevant in that context (e.g., diversity in terms of gender vs. race vs. age representation; Chang et al., 2019). Although race and gender are most closely associated with diversity in general, contextual information may call people's attention to other types of identities or toward a "multiple forms" approach to diversity (Rios & Cohen, 2023).

The role of context is particularly important to consider because judgments about diversity in real-world settings involve multiple levels of contextual influences. For example, imagine a team seeking to diversify. Previous research suggests that the extent to which an applicant to that team is considered to add to the group's diversity will, of course, depend on the characteristics of the applicant (Geerling & Chen, 2021; Unzueta & Binning, 2010) and the people making the judgment (Binning & Unzueta, 2013; Unzueta & Binning, 2012). However, perceptions of diversity are also likely to differ based on the current composition of the team, representation within the organization, and even representation in the profession as a whole. Sometimes, this contextual information will conflict, for example, when a team with gender parity (50/50 representation of men and women) grapples with a gender disparity in the profession at the national level. In such cases, seemingly simple effects of a target's identity on their perceived contributions to diversity may now depend on what level of representation information the perceiver is attending to. Yet, researchers who study perceptions of diversity have not yet sufficiently explored these cases of conflicting contextual information.

The present research seeks to add to a broader understanding of contextual influences on diversity judgments (including in domains where White people are overrepresented and ostensibly underrepresented), and to address the aforementioned gap in the literature. Across four experiments, we are the first to manipulate context systematically at multiple levels, and to explore what happens when representation information at different levels conflicts. Specifically, we manipulated representation information at the national level of the profession (i.e., by providing demographic statistics reflecting various sectors of the American workforce), and at the level of the specific group of workers being evaluated in terms of diversity (which was referred to as "target groups").

In Study 1 ($N = 160$), we manipulated representation in the profession by asking participants to rate groups that they believed were either American elementary school teachers (a context in which White women are overrepresented) or members of the American workforce in general. If perceived contributions to diversity differed across the two conditions, this would demonstrate an ability to attend to representation in the broader professional context when making diversity judgments. In Study 2 ($N = 69$, preregistered), we explored whether similar results would emerge in a novel context where White people are presented to be in the minority (in this case, due to fictionalized statistics about collegiate-level track and field coaches in the United States). If perceived contributions to diversity differed across conditions in Study 2, it would provide evidence that Study 1's findings are not limited to cases in which White people are overrepresented, and contexts in which there are less strong stereotypes about who "belongs" in the profession. In

Study 3 ($N = 164$), all participants were asked to evaluate perceived contributions to diversity with respect to a group of American elementary school teachers (i.e., all participants were exposed to the same professional context); however, the composition of the target group was either primarily White women (similar to the profession) or primarily White men (discrepant with the profession). This allowed us to explore whether participants were able to attend to representation in the target group being evaluated, especially in light of a conflict with what is known about the professional context. That is, if perceived contributions to diversity differed across the two conditions in Study 3, this would demonstrate an ability for people to attend to the more "local" context when making diversity judgments. In Study 4 ($N = 216$, preregistered), we again presented information about the professional context (i.e., White female-dominated teaching) that contrasted with the target group under evaluation (i.e., White male-dominated group of teachers), but this time attempted to call participants' attention to one context only. If successful, this would provide suggestive evidence of an ability to guide people's attention to only certain types of contextual information when making diversity judgments. If unsuccessful, this would suggest that under conditions of conflicting contextual information, participants may have some difficulty in attending to only one piece of information over others.

Knowing that the broader context in which a judgment is made can make certain identities more salient (Macrae et al., 1995), including in the specific domain of diversity-related judgments (Danbold & Unzueta, 2020; Geerling & Chen, 2021), we expected that perceivers would be able to take each level of contextual information into account. We reasoned this would be especially true when participants were making judgments about groups that they know (or believe) to be overrepresented in a selected profession (Studies 1, 3, and 4: White women as elementary school teachers in America; Study 2: men in track and field coaching). Specifically, we predicted that White women would be perceived as contributing less to diversity when they were presented as being overrepresented (relative to being represented proportionately) in a profession (Study 1), and that this effect would be especially strong when White women were overrepresented in both the profession and target group (Study 3). However, we did not expect White women's perceived diversity to shift when they were presented as equally underrepresented in both a White male-dominated and Black male-dominated context (i.e., track and field coaching; Study 2); in those conditions, we instead expected White men and Black men to be perceived to contribute differently to diversity across conditions. Last, in Study 4, we tested whether we could shift participants' attention to one context—the target group or the profession—over another when the two had different levels of diversity. We did not have specific hypotheses, but our analysis plan was preregistered.

Study 1: Effect of Professional Context on Targets' Perceived Contributions to Diversity

In Study 1, we manipulated the professional context within which participants were making diversity-related judgments to highlight the overrepresentation of White women as American elementary school teachers (compared to White women's representation in the broader American workforce). We tested whether manipulating the professional context shifted participants' perceptions of individuals' contributions to a target group's diversity (using the same target group across conditions).

Method

Transparency and Openness

Each study's "Participants" section details how we determined our goal sample size, as well as any data exclusions. For consistency, data exclusions in Study 1 and Study 3 (not preregistered) were consistent with the design and analyses preregistered for Study 4. Study 2 and Study 4's preregistration documents, as well as all research materials (including all manipulated and measured variables, data, and analysis code), are available here: https://osf.io/bwqe8/?view_only=441fa77045c94368a6846ec0434054a2. All data were analyzed using SPSS Version 29.0.0.0. All studies received ethics committee approval.

Participants

In Study 1, we aimed to collect data from 160 participants. Our goal sample size was determined based on an a priori power analysis assuming a small effect size for the interaction between professional context (between-subjects condition, two levels) and target identity (within-subjects condition, four levels).

In February 2021, we collected data from 166 participants recruited via CloudResearch's M-Turk Toolkit. Consistent with Study 3's preregistered exclusion plan, we excluded two participants who exhibited zero variability across all target diversity ratings. We also excluded four additional participants who responded incorrectly regarding the instructions of the study (i.e., "In this survey you will be asked to:" [correct answer—"rate how much individual people would contribute to a group's diversity"]).

After exclusions, 160 participants ($M_{age} = 39.59$, $SD_{age} = 12.34$) remained. Our sample included 85 (53.1%) men and 65 (40.6%) women, with 72.5% of the sample identifying as White, 11.9% as Asian, 7.5% as Hispanic/Latine, and 6.9% as Black.[1]

Materials and Procedures

After providing consent, participants were told they would be judging how much individual people contribute to the diversity of a group of workers. Participants were randomly assigned to believe that the group of workers they were judging was either a part of the general American workforce, or (more specifically) American elementary school teachers. In both conditions, we provided participants with information about gender and racial representation in that professional context (i.e., representation in the American workforce in general, U.S. Bureau of Labor Statistics, 2018 vs. representation in the context of American elementary school teachers, National Center for Education Statistics, 2020). Participants then responded to an instructional check, which was the basis for the exclusions described above.

Next, all participants were shown the same picture of 20 workers' faces; but, depending on condition, participants were either told that the group represented 20 American workers or 20 American

[1] We used the same method of asking for age, gender, and race/ethnicity across all studies. To measure age, we asked "What is your age (in years)?" with an open-ended response box. To measure gender, we asked "What is your gender identity?" with forced-response options, including an option to self-identify. To measure race/ethnicity, we asked "What is your racial background? [select all that apply]" with forced-response options (participants could select more than one option), including an option to self-identify.

elementary school teachers. Nonetheless, all faces were the same across both conditions. Faces were taken from the Chicago Face Database (Ma et al., 2015)[2] and included 15 (75%) faces of women, 11 of which were White. The group was intentionally designed to align more with the gender and racial representation of elementary school teachers in the United States, rather than the American workforce in general, so we could test the effects of the teaching profession (with White women overrepresented at both the national and [often] local level) on perceived contributions to diversity.

Then, participants were asked to indicate how much 24 individuals ("targets") would contribute to the diversity of the group of 20 faces shown previously. Target images were again drawn from the Chicago Face Database and were not redundant with faces included in the target group image. Each participant rated three (out of nine possible) faces of: White women, White men, Asian women, Asian men, Black women, Black men, Latina women, and Latino men. Specifically, participants were asked: "If the individual shown below joined the group pictured above, how much would they contribute to the diversity of the group?" All ratings were made on a scale from 1 (*not at all*) to 7 (*a great deal*).

Finally, participants completed measures of individual differences (e.g., attitudes toward affirmative action, feeling thermometers) and demographic items, and were debriefed about the purpose of the study.

Results and Discussion

For our primary analysis, we conducted a 2 (professional context: American workforce vs. American elementary school teachers) × 4 (target identity: White men vs. White women vs. men of color vs. women of color) mixed model analysis of variance (ANOVA) using a Greenhouse–Geisser correction.[3] Results indicated a nonsignificant main effect of professional context on diversity ratings, $F(1, 151) = 0.89$, $p = .347$, $\eta_p^2 = .01$, but a significant main effect of target identity on diversity ratings, $F(2.13, 321.51) = 362.29$, $p < .001$, $\eta_p^2 = .71$. The main effect of target identity revealed that men of color were perceived as contributing the most to the group's diversity, followed by women of color, White men, and White women; all $ps < .001$. However, the most relevant for our interests was a significant interaction between professional context and target identity, $F(2.13, 321.51) = 6.25$, $p = .002$, $\eta_p^2 = .04$.[4]

The perceived contributions to diversity of men and women of color did not differ based on professional context, all $ps > .107$, but White men and women were rated differently across conditions. White women were perceived as contributing more to the group's diversity when participants believed they were evaluating a group of American workers ($M = 2.39$, $SD = 1.33$) than a group of American elementary school teachers ($M = 1.87$, $SD = 1.13$), $p = .010$, 95% confidence interval, CI_{Mdiff} [0.13, 0.91]. Conversely, White men were perceived as contributing significantly more to the group's diversity when participants believed they were evaluating a group of American elementary school teachers ($M = 3.37$, $SD = 1.54$) than a group of American workers ($M = 2.81$, $SD = 1.54$), $p = .026$, 95% CI_{Mdiff} [0.07, 1.05] (see Figure 1).

Additionally, White men were rated as contributing significantly more to the group's diversity than White women when the professional context was teaching, $p < .001$, 95% CI_{Mdiff} [0.95, 2.05], but not in the control condition (U.S. workforce), $p = .267$, 95% CI_{Mdiff} [−0.13, 0.98]. This stands in contrast to the effect of target gender among men and women of color, as women of color were perceived as contributing less to the group's diversity than men of color in both the control condition, $p = .010$, 95% CI_{Mdiff} [0.05, 0.61], and the teaching context, $p < .001$, 95% CI_{Mdiff} [0.14, 0.68].

To examine results pertaining to men and women of color in finer detail, we also conducted a 2 (professional context: American workforce vs. American elementary school teachers) × 8 (target identity: White vs. Asian vs. Black vs. Latine men vs. women) mixed model ANOVA using a Greenhouse–Geisser correction. Results again indicated a significant main effect of target identity, $F(3.82, 576.72) = 284.83$, $p < .001$, $\eta_p^2 = .65$, and a nonsignificant main effect of professional context, $F(1, 151) = 1.80$, $p = .182$, $\eta_p^2 = .01$, on diversity ratings. Most relevant for our interests was the significant interaction between professional context and target identity, $F(3.82, 576.72) = 3.20$, $p = .014$, $\eta_p^2 = .02$. Similar to results examining ratings of men and women of color overall, the ratings of individual targets of color (e.g., Asian, Black, and Latine men and women) did not vary across professional contexts, all $ps > .114$.[5]

The results of Study 1 suggest that although White individuals were rated as contributing less to diversity overall (compared to people of color), White women were rated as contributing less to diversity (and White men as contributing more to diversity) when perceivers believed they were evaluating candidates to join a group of American elementary school teachers, a professional context in which White women are overrepresented. Given that all participants were rating contributions to diversity of the same target group of 20 individuals, this demonstrates the context-sensitivity of perceivers' judgments about diversity, specifically to information about the national overrepresentation of a group that was also overrepresented in the target group under consideration.

Study 2: Conceptual Replication in a Novel Domain With Varied Racial Representation

In Study 2, we conducted a conceptual replication of Study 1 using a context in which there are weaker stereotypes about who "belongs" in the field (compared to the overrepresentation of White women in teaching professions): track and field coaching staff. Although track and field coaching at the collegiate level is White male-dominated (National Collegiate Athletic Association, 2023), we believed that this domain would be specialized enough that representation of

[2] All faces used in the present research were taken from individuals 22 years of age or older. According to norming data, all faces were accurately categorized on the basis of their gender identity by 100% of norming participants, and accurately categorized on the basis of their racial identity by at least 95% of norming participants (with the exception of Latine targets, whose norming generally indicated less accurate judgments and were therefore accurately categorized by at least 66% of participants).

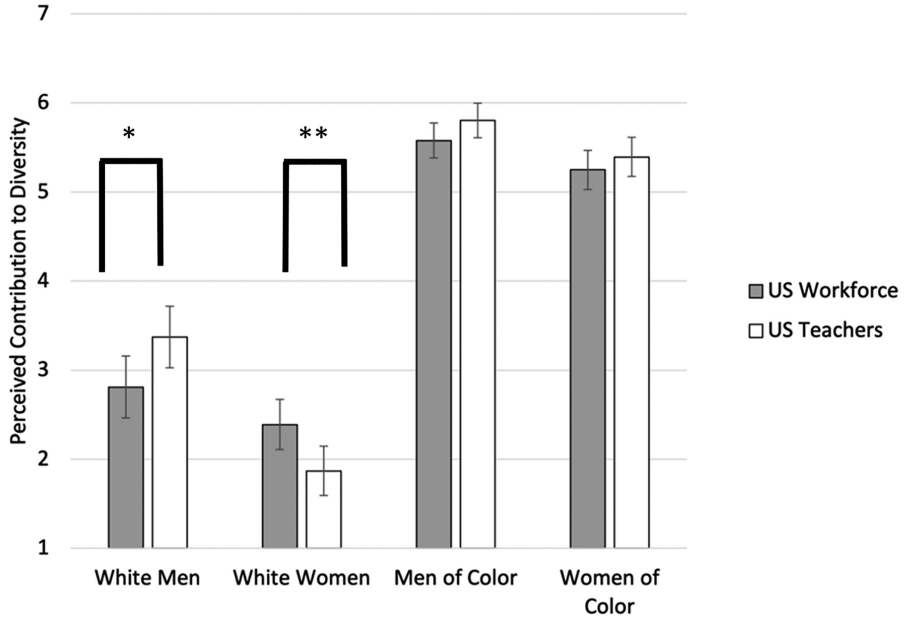
[3] Greenhouse–Geisser corrections were used when the assumption of sphericity was violated.

[4] As preregistered in Study 4, all follow-up comparisons used a Bonferroni correction.

[5] For each study, we conducted exploratory analyses testing for moderation by participant gender and race (separately). We did not find evidence for any participant gender effects, and only one effect of participant race suggesting that non-White participants were more likely to rate White men as contributing to diversity when they were underrepresented in the profession at the national level in Study 4. See the online supplemental materials for full details.

Figure 1

Effect of Professional Context on Targets' Perceived Contributions to Diversity



Note. Error bars indicate 95% CIs. CI = confidence interval.
* $p < .05$. ** $p < .01$.

Black and White coaches could be manipulated more easily. Therefore, we used Study 2 to investigate how diversity judgments are impacted when a context is presented as having White people in the numerical minority (vs. Black people in the numerical minority). To that end, we assigned participants to evaluate the diversity of a group of track and field coaches when the profession was represented as White male-dominated, or when the profession was represented as Black male-dominated. As in Study 1, we tested whether individuals' perceived contributions to diversity differed across conditions.

Method

Participants

In Study 2, we aimed to collect data from 72 participants, after data exclusions (described below and in our preregistered analysis plan). Our goal sample size was determined based on an a priori power analysis assuming the smallest effect size from our previous studies for the interaction between condition (between-subjects, two levels) and target (within-subjects, four levels).[6]

In October 2023, we collected data from 75 participants recruited via Prolific Academic. Data were collected above the intended sample size due to the number of participants who would be excluded based on our exclusion criteria.

Consistent with Study 2's preregistered exclusion plan, we excluded two participants who exhibited zero variability across all target diversity ratings. We also excluded four participants who did not respond correctly to the following question after receiving the study instructions: "In this survey, you will be asked to rate how much individual people will contribute to a groups' diversity. That group represents: [track and field coaches]."

After exclusions, 69 participants ($M_{age} = 36.19$, $SD_{age} = 12.69$) remained. Our sample included 38 (55.1%) women and 29 (42.0%) men; 78.3% identified as White, 13.0% as Hispanic/Latine, 10.1% as Asian, and 4.3% as Black.

Materials and Procedures

After providing consent, participants were told that they would be judging how much individual people would add to the diversity of a group of university-level track and field coaches. As in Study 1, information about gender and racial representation among university-level track and field coaches was provided. However, although all participants in Study 2 were making judgments about the same profession, national representation information was manipulated to make track and field coaching appear to be White male-dominated or Black male-dominated.

Specifically, in the White male-dominated condition, participants were told that at the national level, track and field coaching staff include 75.1% men (24.8% women), with 71.0% White (21.7% Black, 3.5% Asian, 3.5% Hispanic/Latino) coaches; and they were asked to make judgments about a target group of track and field coaches in which 50% of the coaches pictured were White men (with 20% Black men, 10% White women, 10% Black women, 10% Latino men). In the Black male-dominated condition, participants were told that at the national level, track and field coaching staff include 75.1% men (24.8% women), with 71.0% Black (21.7% White, 3.5% Asian, 3.5% Hispanic/Latino) coaches; and they were asked to make judgments about a target group of track

[6] Study 1, Study 3, and Study 4 were all conducted prior to conducting Study 2.

and field coaches in which 60% of the coaches pictured were Black men (10% White men, 10% White women, 10% Black women, 10% Latino men).

Next, participants were shown 24 faces from the Chicago Face Database that were not included in the pictured group of coaches. Participants were shown three (of nine possible) of each of the following faces: White women, White men, Asian women, Asian men, Black women, Black men, Latina women, and Latino men. All ratings were made on a scale from 1 (*not at all*) to 7 (*a great deal*). Participants in both conditions were asked "If the coach shown below joined the group of track and field coaches pictured above, how much would they contribute to the diversity of the group of coaches?"

Finally, participants answered two questions (called "attention checks" in our preregistration document) to ensure they accurately perceived the demographic information and target group picture as being White male-dominated or Black male-dominated, depending on condition. They were also asked "To what extent were you surprised about the information above [*representation in the profession*], which was presented about university-level track and field coaches?" Then, they completed measures of individual differences and demographic questions, and were debriefed about the purpose of the study.

Results and Discussion

Our first preregistered analysis was a Greenhouse–Geisser corrected mixed model ANOVA with a within-subjects factor of target identity (four levels: White men vs. White women vs. men of color vs. women of color) and a between-subjects factor of representation condition (two levels: White male-dominated vs. Black male-dominated).[7] There was a significant main effect of target identity on diversity ratings, $F(2.26, 146.91) = 140.16$, $p < .001$, $\eta_p^2 = .683$, as well as a significant main effect of condition on diversity ratings, $F(1, 65) = 19.36$, $p < .001$, $\eta_p^2 = .229$. The main effect of the condition revealed that, overall, targets were rated as contributing more to the group's diversity in the Black male-dominated condition ($M = 4.78$, $SD = 0.88$) compared to the White male-dominated condition ($M = 4.11$, $SD = 0.88$). Importantly, there was also a significant interaction between target identity and condition, $F(2.26, 146.91) = 38.15$, $p < .001$, $\eta_p^2 = .370$.[8]

As preregistered, we conducted follow-up tests using a Bonferroni correction. Results revealed that White men were perceived to contribute significantly less to the group's diversity in the White male-dominated condition ($M = 1.62$, $SD = 0.93$) compared to the Black male-dominated condition ($M = 3.85$, $SD = 0.85$), $p < .001$, 95% CI_{Mdiff} [−2.67, −1.80]. Conversely, men of color were perceived to contribute significantly more to group diversity in the White male-dominated condition ($M = 4.74$, $SD = 1.00$) than the Black male-dominated condition ($M = 3.98$, $SD = 0.77$), $p < .001$, 95% CI_{Mdiff} [0.32, 1.19]. Interestingly, while White women, like White men, were perceived to contribute significantly less to the group's diversity in the White male-dominated condition ($M = 4.23$, $SD = 1.22$) compared to the Black male dominated condition ($M = 5.53$, $SD = 1.18$), $p < .001$, 95% CI_{Mdiff} [−1.89, −0.71], women of color's perceived contributions to diversity did not differ when comparing the White male-dominated condition ($M = 5.87$, $SD = 1.06$) to the Black male-dominated condition ($M = 5.77$, $SD = 0.83$), $p = .685$, 95% CI_{Mdiff} [−0.37, 0.56] (see Figure 2).

We also compared ratings of White men and women, and men and women of color, within each condition. In the White male-dominated condition, women of color were rated as contributing the most to diversity, followed by men of color, White women, and White men. Each comparison reached statistical significance (all $ps < .001$), with the exception of men of color and White women who were rated as contributing equally to diversity, $p = .180$, 95% CI_{Mdiff} [−1.14, 0.12]. In the Black male-dominated condition, women of color were still perceived as contributing the most to diversity, but their ratings did not significantly differ from the perceived contributions to diversity of White women, $p = 1.00$, 95% CI_{Mdiff} [−0.24, 0.73]. Similarly, men of color and White men were rated as contributing the same to group diversity, $p = 1.00$, 95% CI_{Mdiff} [−0.42, 0.68] (all other comparisons reached statistical significance, $ps < .001$).

We conducted another Greenhouse–Geisser corrected mixed model ANOVA, this time with a within-subjects factor of target identity with eight levels (White vs. Asian vs. Black vs. Latine men vs. women). In this analysis, there was a significant main effect of target identity, $F(4.44, 288.78) = 128.04$, $p < .001$, $\eta_p^2 = 0.663$, but a nonsignificant main effect of condition alone, $F(1, 65) = 0.53$, $p = .467$, $\eta_p^2 = .008$, on diversity ratings. Again, the interaction between target identity and condition was significant, $F(4.44, 288.78) = 39.53$, $p < .001$, $\eta_p^2 = .378$.

As we know from the first set of results, White men and women were perceived as contributing less to diversity in the White male-dominated compared to the Black male-dominated condition, $ps < .001$. Additionally, post hoc tests using a Bonferroni correction revealed that ratings of Asian men and women, and Latine men and women, did not differ across representation conditions, all $ps > .288$. However, Black men were perceived to contribute significantly more to diversity in the White male-dominated condition ($M = 4.44$, $SD = 1.42$) than the Black male-dominated condition ($M = 1.80$, $SD = 1.00$), $p < .001$, 95% CI_{Mdiff} [2.04, 3.24]. Interestingly, Black women were perceived as contributing significantly more to diversity in the White male-dominated condition ($M = 5.56$, $SD = 1.33$) than the Black male-dominated condition ($M = 4.73$, $SD = 1.19$), $p = .009$, 95% CI_{Mdiff} [0.22, 1.45]. This result, along with the significant difference in White women's ratings, emerged despite equivalent representation of Black and White women across both conditions (e.g., one White woman, and one Black woman, were pictured in each group of track and field coaches).

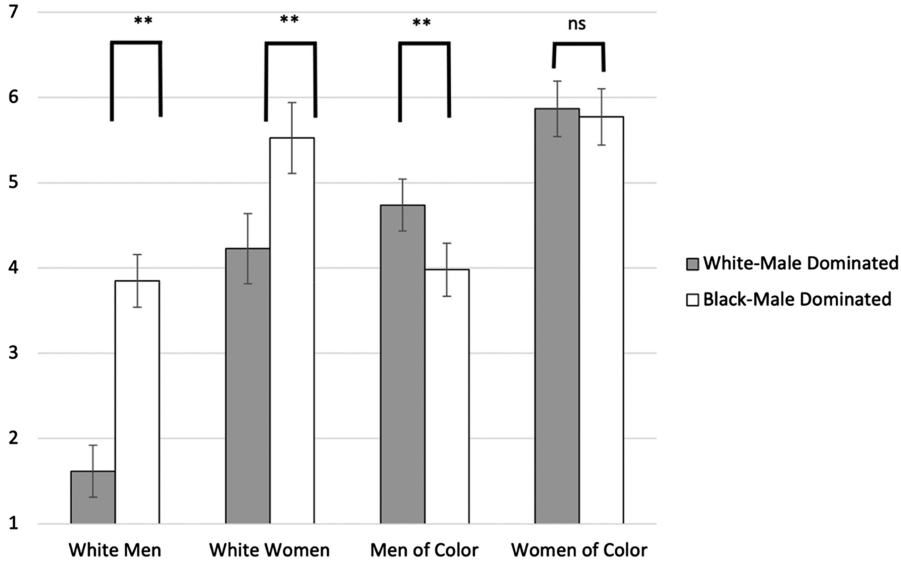
We also explored comparisons within each condition, focusing primarily on White and Black men and women's perceived contributions to diversity. Within the White male-dominated condition, Black women were rated as contributing the most to diversity, followed by Black men, White women, and White men. All comparisons were significant ($ps < .001$), with the exception of Black men and White

[7] Fewer than 50% of our participants responded incorrectly to items asking them to accurately report representation at the national and target group level (in fact, only 13.0% of participants responded incorrectly to at least one item), and therefore as preregistered, we did not include these items in our analyses.

[8] We first examined whether participants' self-reported level of surprise differed across conditions, which it did (participants were more surprised to learn the profession was Black male-dominated than White-male dominated), $t(54.22) = -2.93$, $p = .005$, $d = 0.71$, 95% CI [−1.81, −0.34]. As a result, we added this item in both our four-level and eight-level analyses, but it was not a significant covariate, eight-level analysis, $F(1, 64) = 0.04$, $p = .851$, $\eta_p^2 = .001$; four-level analysis, $F(1, 64) = 1.09$, $p = .301$, $\eta_p^2 = .017$. Results reported in text did not differ when including this item in our analyses; therefore, and as preregistered, we dropped it from our reported analyses.

Figure 2

Effect of Representation Manipulation on Targets' Perceived Contributions to Diversity



Note. Error bars indicate 95% CIs. CI = confidence interval.
** $p < .001$.

women who were rated as contributing equally to diversity, $p = 1.00$, 95% CI_{Mdiff} [−0.74, 1.17]. This pattern suggests that individuals with one underrepresented identity (gender for White women and race for Black men) were seen as contributing less diversity than individuals with two underrepresented identities (gender and race for Black women). Within the Black male-dominated condition, White women were rated as contributing the most to diversity, followed by Black women, White men, and Black men. All comparisons were significant ($ps < .023$), with the exception of Black women and White men who were rated as contributing equally to diversity, $p = .122$, 95% CI_{Mdiff} [−0.09, 1.85]. This pattern conceptually replicates the results in the White male-dominated condition, such that individuals with two underrepresented identities in the context (White women) were rated as contributing more diversity than individuals with one underrepresented identity in the context (Black women and White men). In sum, in each condition, participants were quite responsive to contextual information, rating double-minorities along dimensions of race and gender as contributing more to diversity than mono-minorities (who were rated as contributing more to diversity than the overrepresented group).

Study 2 used a novel professional context: one in which White women are not overrepresented, and that we were able to manipulate as being White male-dominated or Black male-dominated (track and field coaches). Overall, Study 2 revealed similar results to Study 1, in that the professional context shifted perceptions of who contributes the most to diversity. This was especially interesting in the case of the Black male-dominated condition, where we found Black men and women's perceived contributions to significantly decrease (relative to the White male-dominated condition); suggesting that although people of color are generally viewed as contributing more to a group's diversity, this becomes less true when prototypical group members (i.e., Black men) are overrepresented. In fact, in the Black male-dominated condition, Black men were even perceived as contributing significantly less to diversity than White men and women. This suggests that perceivers attend to the contextual cues (defined in this study as both national representation and the target group under consideration) when making diversity judgments, rather than relying on essentialist views of which identities "always" contribute to a group's diversity.

Study 3: Effect of Misaligned Representation on Targets' Perceived Contributions to Diversity

In Study 3, we explore what happens when representation information at one contextual level conflicts with information presented at a different level. Similar to the varying levels within which we can self-categorize (e.g., individual, subgroup, superordinate; Turner & Reynolds, 2012), there are multiple levels within which groups might be overrepresented (or underrepresented), and such information is likely to conflict at least some of the time.

We tested this form of "contextual conflict" by holding the overarching professional context constant across conditions while manipulating representation in the target group under consideration either to align, or misalign, with representation in the professional context. Study 3 therefore represents an important extension from Studies 1 and 2, as it helps determine whether perceivers can attend to information at the level of the group that is being evaluated, even when that information conflicts with knowledge about representation in the profession.

Method

Participants

In Study 3, we aimed to collect data from 160 participants. Our goal sample size was determined based on an a priori power analysis assuming a small effect size for the interaction between target group

representation (between-subjects, two levels) and target identity (within-subjects, four levels).

In May 2021, we collected data from 172 participants recruited via CloudResearch's M-Turk Toolkit. Consistent with Study 4's preregistered exclusion plan, we excluded two participants who exhibited zero variability across all target diversity ratings. We also excluded six additional participants who responded incorrectly to the instructional check used in Study 1.

After exclusions, 164 participants ($M_{age} = 36.33$, $SD_{age} = 10.53$) remained. Our sample included 96 (58.5%) men and 56 (34.1%) women, with 68.9% identifying as White, 9.8% as Asian, 9.1% as Black, and 6.1% as Hispanic/Latine.

Materials and Procedures

After providing consent, all participants were told that they would be judging how much individual people contribute to the diversity of a group of American elementary school teachers. As in Study 1, information about national gender and race representation in the teaching profession was provided and indicated an overrepresentation of White women. Participants then responded to the same instructional check used in Study 1, which was the basis for the exclusions described above.

Next, participants were randomly assigned to view one of two groups of 20 faces that they believed to be the group of American elementary school teachers they would be evaluating. All faces were taken from the Chicago Face Database (Ma et al., 2015). Depending on the assignment to condition, the group was either White female-dominated (i.e., aligned with the professional context) or White male-dominated (i.e., misaligned with the professional context). In the White female-dominated condition, the composition of the work team was closer to that of American elementary school teachers than the general American workforce (i.e., 75% female faces, with 55% White female faces, same as was used in Study 1). In contrast, in the White male-dominated condition, White men were overrepresented in the group relative to their representation in the profession, that is, the group included 13 (65%) men, 10 of whom were White, with only three (15%) White female faces.

Then, participants were asked to rate the perceived contributions to the diversity of 24 additional targets. Each participant rated three (out of nine possible) faces of: White women, White men, Asian women, Asian men, Black women, Black men, Latina women, and Latino men. Participants were asked: "If the teacher shown below joined the group of teachers pictured above, how much would they contribute to the diversity of the group of teachers?" All ratings were made on a scale from 1 (*not at all*) to 7 (*a great deal*).

Finally, participants completed measures of individual differences and demographics, as well as items about study materials (i.e., "how diverse was the group of teachers shown?"). Then, participants were debriefed about the purpose of the study.

Results and Discussion

For our primary analysis, we conducted a 2 (target group representation: White female-dominated vs. White male-dominated) × 4 (target identity: White men vs. White women vs. men of color vs. women of color) mixed model ANOVA using a Greenhouse–Geisser correction. Results indicated a nonsignificant main effect of target group representation, $F(1, 152) = 1.38$, $p = .243$, $\eta_p^2 = .01$, but a significant main effect of target identity, $F(2.20, 333.94) = 289.76$, $p < .001$, $\eta_p^2 = .66$, on diversity ratings. As in Study 1, the main effect of target identity revealed that men of color were perceived as contributing the most to diversity, followed by women of color, White men, and White women; all $ps < .001$. Most relevant for our interests was a significant interaction between target group representation and target identity, $F(2.20, 333.94) = 17.53$, $p < .001$, $\eta_p^2 = .10$.

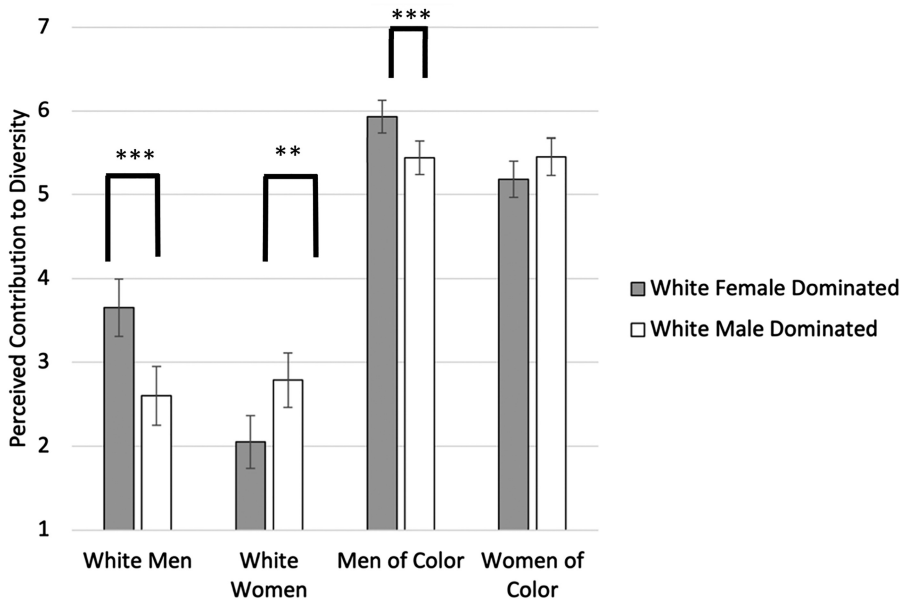
Decomposing the interaction revealed that White women were rated as contributing significantly more to the group's diversity in the White male-dominated condition ($M = 2.79$, $SD = 1.46$) compared to the White female-dominated condition ($M = 2.05$, $SD = 1.37$), $p = .002$, 95% CI_{Mdiff} [0.29, 1.19] (see Figure 3). Conversely, White men were perceived as contributing significantly more to the group's diversity when the group of workers being evaluated was primarily White women ($M = 3.65$, $SD = 1.54$) compared to White men ($M = 2.60$, $SD = 1.54$), $p < .001$, 95% CI_{Mdiff} [0.56, 1.54]. Likewise, White men were rated as contributing significantly to the group's diversity than White women in the White female-dominated condition, $p < .001$, 95% CI_{Mdiff} [1.04, 2.16]; but, when target group diverged from national representation in the White male-dominated condition, the difference between diversity ratings of White men and White women was erased, $p = 1.00$, 95% CI_{Mdiff} [−0.39, 0.76]. Interestingly, similar to White men, men of color were rated as contributing significantly more to the group's diversity in the White female-dominated condition ($M = 5.93$, $SD = 0.85$) compared to the White male-dominated condition ($M = 5.44$, $SD = 0.91$), $p < .001$, 95% CI_{Mdiff} [0.21, 0.77]. However, ratings of women of color did not differ across conditions (White female-dominated: $M = 5.18$, $SD = 1.01$; White male-dominated: $M = 5.45$, $SD = 0.95$), $p = .091$, 95% CI_{Mdiff} [−0.58, 0.04].

We also conducted a 2 (target group representation: White female-dominated vs. White male-dominated) × 8 (target identity: White vs. Asian vs. Black vs. Latine men vs. women) mixed model ANOVA using a Greenhouse–Geisser correction to uncover any differences between specific racial groups. Results again indicated a significant main effect of target identity, $F(3.78, 575.23) = 240.11$, $p < .001$, $\eta_p^2 = .61$, and a nonsignificant main effect of target group representation, $F(1, 152) = 1.27$, $p = .262$, $\eta_p^2 = .01$. Relevant for our interests, there was also a significant interaction between condition and target identity, $F(3.78, 575.23) = 11.65$, $p < .001$, $\eta_p^2 = .07$.

Decomposing the interaction revealed that perceived contributions to diversity were greater in the White female-dominated than the White male-dominated condition for Asian men, $p = .023$, 95% CI_{Mdiff} [0.05, 0.72]; Black men, $p = .028$, 95% CI_{Mdiff} [0.04, 0.69]; and Latino men, $p < .001$, 95% CI_{Mdiff} [0.34, 1.08]. And, while ratings did not differ across conditions for Asian women, $p = .266$, 95% CI_{Mdiff} [−0.59, 0.16] and Black women, $p = .233$, 95% CI_{Mdiff} [−0.59, 0.14], Latina women were rated as contributing significant more to diversity in the White male-dominated condition ($M = 4.84$, $SD = 1.12$) than the White female-dominated condition ($M = 4.47$, $SD = 1.20$), $p = .049$, 95% CI_{Mdiff} [0.001, 0.74].

Given that all participants were making judgments within the same professional context, but target ratings differed depending on target group composition, Study 3's results demonstrate that multiple levels of contextual information are considered when people are making diversity judgments. This is especially interesting in the case of the White male-dominated condition, where representation information conflicted (i.e., White women were overrepresented in the profession, but the target group included primarily White

Figure 3
Effect of Target Group Representation on Perceived Contributions to Diversity



Note. Error bars indicate 95% CIs. CI = confidence interval.
** $p < .01$. *** $p < .001$.

men). It appears that when contextual information conflicts in this way, there may be a greater sensitivity to representation in the more local context. That is, White women's perceived contributions to diversity increased under conditions where they were underrepresented at the target group level, despite their overrepresentation in the profession, in ways that made them equal in perceived contributions to diversity as White men (far less represented nationally). Unfortunately, this may suggest a hypersensitivity to the more immediate group context, resulting in barriers to broader-level diversification (i.e., at the national or occupational level) if target groups themselves are perceived as being sufficiently diverse.

In Studies 2 and 3, the effect of context on diversity ratings also did not seem to be specific to dominant group identities, as ratings of women (in Study 2) and targets of color (in Study 3) also differed across conditions. In Study 2, White women (like White men) received a boost to their perceived contributions to diversity in the Black male-dominated condition; in Study 3, men of color (like White men) received a boost to their perceived contributions to diversity in the White female-dominated condition. These patterns will be discussed further in the General Discussion section.

Study 4: Attempt to Direct Perceivers' Attention to Specific Representation Information

The results of Studies 1–3 suggest that perceivers can attend to representation at broader levels (i.e., national representation within a profession) and more specific levels (i.e., a target group under evaluation) when making diversity judgments. In the context of American elementary school teachers (used in Study 1 and Study 3), White women's perceived contributions to diversity were subject to representation at the national and target group levels, the latter of which was more impactful when representation across contexts did not align. In Study 4, we tested whether it was possible to call perceivers' attention to one context over the other in such cases of misaligned contextual information.

This is important to explore, as real-world stakeholders who seek to diversify their organizations may sometimes encounter situations in which national or worldwide representation conflicts with representation in the more "local" groups under consideration (e.g., their organizations, a specific work team). If successful diversification requires attention to one context over the other, it would be helpful to know whether people can, in fact, focus on only one piece of contextual information at a time. Thus, in Study 4, we use the White male-dominated condition from Study 3 to again present the profession as White female-dominated, but the target group as White male-dominated. We did this by using a series of instructions to attempt to call participants' attention to one context over the other.

Method

Participants

In Study 4, we aimed to collect data from 186 participants, after data exclusions (described below and in our preregistered analysis plan). Our goal sample size was determined based on an a priori power analysis assuming a small effect size for the interaction between condition (between-subjects, three levels) and target (within-subjects, four levels).

In October 2021, we collected data from 335 participants recruited via CloudResearch's M-Turk Toolkit. Data were collected far above the sample size due to the number of participants who failed our instructional check (which was the basis for our exclusions, see below).

Consistent with Study 4's preregistered exclusion plan, we excluded one participant who exhibited zero variability across all target diversity ratings. We also excluded 118 participants who responded incorrectly

regarding the instructions of the study.[9] As described in our preregistered analysis plan, we excluded participants if they did not correctly respond to the following question after receiving the study instructions: "In this study, you have received instructions to help a school hire individuals who would best contribute to the diversity of–American elementary school teachers, in general (correct for professional context condition), or teachers who currently work at that school (correct for target group condition)."

After exclusions, 216 participants ($M_{age} = 38.38$, $SD_{age} = 10.84$) remained. Our sample included 118 (54.6%) men and 88 (40.7%) women; 69.9% identified as White, 10.6% as Hispanic/Latine, 9.3% as Asian, and 8.8% as Black.

Materials and Procedures

After providing consent, participants were told that they would be judging how much individual people contribute to the diversity of a group of American elementary school teachers. Again, information about gender and racial representation among American elementary school teachers at the national level was provided, and indicated an overrepresentation of White women. Further, all participants viewed the same group of 20 faces to represent a target group of American elementary school teachers. The group of faces was the same as the White male-dominated condition used in Study 3 in which the faces were primarily White men.

Unlike previous studies, participants were provided with specific instructions about how they should make judgments regarding an individual's contribution to diversity. While participants who were randomly assigned to the control condition were asked to imagine that they were responsible for "helping a school hire individuals who would best contribute to teacher diversity," the professional context condition was asked to think about "who would best contribute to the diversity of American elementary school teachers, in general," and the target group condition was asked to think about "who would best contribute to the diversity of the group of teachers who work at that school" (ostensibly shown in the picture). That is, participants in our experimental conditions were randomly assigned to attend to either the professional context (at the national level) or the target group context (the set of 20 teachers pictured). Participants in the experimental conditions were only allowed to proceed with the study if they did not think they were being asked who would contribute the most to the diversity of the general American public.

Next, participants were shown 24 faces from the Chicago Face Database that were not included in the pictured group. All participants were shown three (of nine possible) of each of the following faces: White women, White men, Asian women, Asian men, Black women, Black men, Latina women, and Latino men. All ratings were made on a scale from 1 (*not at all*) to 7 (*a great deal*). Participants in the control condition were asked "If the school hired the teacher shown below, how much would that person contribute to teacher diversity?" Participants in the professional context condition were asked "If the school hired the teacher shown below, how much would that person contribute to the diversity of American elementary school teachers in general?" Participants in the target group condition were asked "If the school hired the teacher shown below, how much would that person contribute to the diversity of the group of teachers pictured above?"

Finally, participants completed measures of individual differences, demographic questions, and attention checks. Then, they were debriefed about the purpose of the study.

Results and Discussion

Our first preregistered analysis was a Greenhouse–Geisser corrected mixed model ANOVA with a within-subjects factor of target identity (four levels: White men vs. White women vs. men of color vs. women of color) and a between-subjects factor of instructional condition (three levels: control vs. professional context vs. target group context). Additionally, because fewer than 50% of our participants responded correctly to our attention checks, we included a between-subjects factor of whether participants responded correctly or incorrectly to the instructional check (as preregistered).[10] There was a significant main effect of target identity, $F(2.24, 456.01) = 412.92$, $p < .001$, $\eta_p^2 = .67$, but nonsignificant effects of condition alone, $F(2, 204) = 1.57$, $p = .212$, $\eta_p^2 = .02$; target identity and condition interaction, $F(4.47, 456.01) = 1.02$, $p = .402$, $\eta_p^2 = .01$; and target identity, condition, and attention check interaction, $F(4.47, 456.01) = 1.90$, $p = .101$, $\eta_p^2 = .02$.

The main effect of target identity indicated that White men ($M = 2.68$, $SD = 1.48$) were rated as contributing significantly more to group diversity than White women ($M = 2.22$, $SD = 1.54$), $p < .001$, 95% CI_{Mdiff} [0.19, 0.75]. This mirrors the overall pattern of main effects of target identity across studies involving the teaching context, such that men of color were perceived as contributing the most to diversity, followed by women of color, White men, and White women (all $ps < .001$); but, it contrasts with results from Study 3's White male-dominated condition indicating no differences in White men and women's perceived contributions to diversity under conditions of White male-dominated target group representation.

As preregistered, we conducted follow-up tests despite the lack of omnibus significance. Ratings for White women, White men, and women of color did not differ across conditions, all $ps > .216$. There was a trend for men of color to be rated as contributing more to diversity in the professional context condition ($M = 5.93$, $SD = 0.89$) compared to the control condition ($M = 5.54$, $SD = 1.07$), $p = .085$, 95% CI_{Mdiff} [−0.04, 0.81] (see Figure 4).

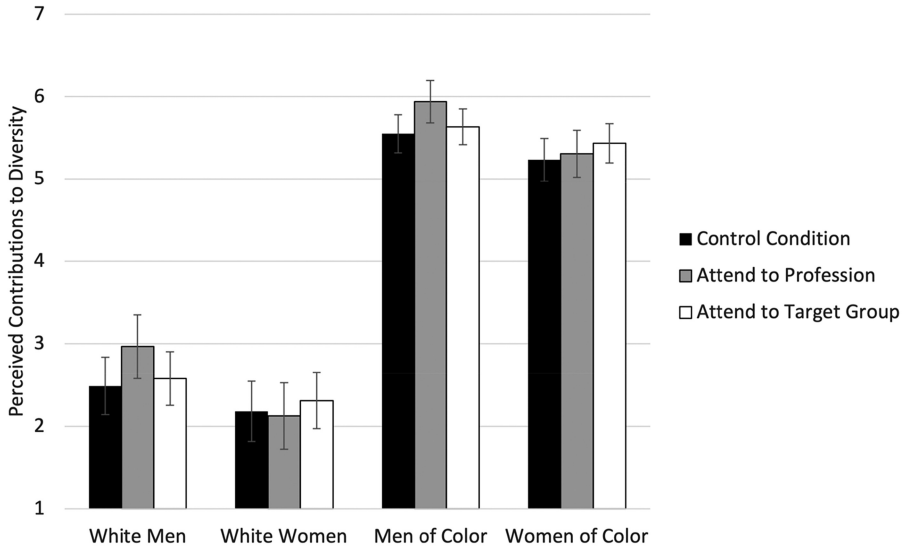
As in Studies 1 and 2, we conducted a similar analysis involving eight levels of the target identity variable (White vs. Asian vs. Black vs. Latine men vs. women). Again, we found a significant main effect of target identity, $F(3.62, 734.65) = 327.40$, $p < .001$, $\eta_p^2 = .62$, but nonsignificant effects of condition, $F(2, 203) = 1.74$, $p = .178$, $\eta_p^2 = .02$; target and condition, $F(7.24, 734.65) = 1.33$, $p = .229$, $\eta_p^2 = .01$; and target, condition, and the attention check, $F(7.24, 734.65) = 1.67$, $p = .111$, $\eta_p^2 = .02$. As preregistered, we conducted follow-up tests despite the lack of omnibus significance. There were no differences across conditions for White men and women, Black men and women, or Asian and Latina women, all $ps > .169$. However, Asian men were rated as contributing marginally more to diversity in the professional context condition ($M = 6.21$, $SD = 1.04$) than the control condition ($M = 5.67$, $SD = 1.46$),

[9] The participants who were excluded did not differ from those included on the basis of age, $t(264) = -0.62$, $p = .535$, $d = 0.09$, or gender, $\chi^2(1, N = 263) = 0.15$, $p = .696$, $\Phi = 0.02$. There was a significant, but small, association between exclusion and participant race, $\chi^2(1, N = 265) = 4.17$, $p = .041$, $\Phi = 0.13$, indicating that a greater proportion of White (compared to non-White) participants were included (compared to excluded).

[10] Results do not differ if we omit the correct factor; there is still a nonsignificant main effect of condition, $F(2, 207) = 1.57$, $p = .210$, $\eta_p^2 = .02$, and a nonsignificant interaction between target identity and condition, $F(4.46, 461.14) = .86$, $p = .50$, $\eta_p^2 = .01$.

Figure 4

Effect of Instructional Condition on Targets' Perceived Contributions to Diversity



Note. Error bars indicate 95% CIs. CI = confidence interval.

$p = .056$, 95% CI_{Mdiff} [−0.01, 1.06], and the same was true for ratings of Latino men: professional context condition ratings ($M = 5.25$, $SD = 1.25$) marginally exceeded control condition ratings ($M = 4.70$, $SD = 1.35$), $p = .056$, 95% CI_{Mdiff} [−0.01, 1.14].

Study 4 suggests that except for a slight increase in men of color's perceived contributions to diversity when participants were told to attend to the professional context of elementary school teaching in the United States (rather than when provided with no specific instructions), perceived contributions to diversity did not shift based on instructional condition. Additionally, in contrast to results from the White male-dominated condition used in Study 3, White men were perceived as contributing more to diversity than White women in Study 4. This may suggest that people are better at attending to the professional context than previously thought (even when provided with conflicting information about the target group under consideration); or, it might indicate a bias toward conditions that increase the diversity of White men whenever possible.[11]

Overall, the results of Study 4 indicate that it might be challenging to intentionally direct perceivers' attention toward one piece of contextual information only. However, given the preponderance of null effects in this study, and the lack of knowledge about how participants interpreted the control condition (with no specific instructions about which context to attend to), the results cannot definitively rule out the possibility that specific contextual information could be attended to when making diversity judgments, under the right conditions.

General Discussion

Across four experiments, we investigated how contextual information about representation at different levels influenced perceptions of individual contributions to diversity. In all three studies conducted within the same context (American elementary school teachers), White men and women were perceived as contributing less to diversity than men and women of color, indicating an overall effect of target characteristics that are consistent with past research (e.g., Geerling & Chen, 2021; Unzueta & Binning, 2010; see Table 1).

Despite these large overall effects of target identity in a context in which White women are overrepresented, we also found evidence for the role of contextual information in moderating the effect of target characteristics on diversity ratings. Given our consistent use of the teaching context, we found the strongest evidence for White men and women's perceived contributions to diversity being subject to representation at the profession and target group levels.

In Study 1, we exposed all participants to the same target group of primarily White women. However, participants were either led to believe that the group consisted of American workers in general, or American elementary school teachers. Only in the American elementary school teacher condition, a context in which White women are overrepresented, did perceivers judge White women as contributing significantly less to the diversity of the group than White men. Further, White women's perceived contributions to diversity were significantly lower in the teacher condition (compared to the control condition), while White men's perceived contributions to diversity were significantly higher in the teacher condition (compared to the control condition). Targets of color were not perceived differently across conditions in Study 1.

Overall, the results of Study 1 provide evidence for perceivers' sensitivity to representation at a "broader" level (i.e., national representation in the teaching profession). However, in Study 1, this effect was limited to White targets, as men and women of color's perceived contributions to diversity did not shift across professional contexts. Perhaps, this result indicates the specificity of contextual influences on perceptions of diversity to certain groups only, especially groups

[11] Based on the results of exploratory analyses testing moderation by participant race, this bias appears to be driven by non-White participants, an indication that this particular pattern might not be due to ingroup bias. See the online supplemental materials for more details.

Table 1
Overall Main Effects and Target × Condition Interaction Across Studies Using Teaching Context

	Study 1		Study 3		Study 4	
Factor	F	η_p^2	F	η_p^2	F	η_p^2
Target	362.29***	.71	289.76***	.66	412.92***	.67
Condition	0.89	.01	1.38	.01	1.57	.02
Target × Condition	6.25**	.04	17.53***	.10	1.02	.01

** $p < .01$. *** $p < .001$.

whose perceived contributions to diversity are lower in general and therefore less subject to ceiling effects (i.e., White people).

We used Study 2 to further clarify these Study 1 findings. In Study 2, we manipulated whether the profession of track and field coaching was presented as White male-dominated or Black male-dominated, using both national statistics about the profession and a pictured target group of track and field coaches. Thus, we used a context in which a group other than White women were overrepresented (and, in one condition, where White people overall were in the numerical minority). We found that White men and White women were perceived to contribute more to diversity in the Black male-dominated condition, while Black men and Black women were perceived to contribute less to diversity in the Black male-dominated condition. Additionally, Black men were rated as contributing significantly less to diversity (compared to White men, White women, and Black women) in the Black male-dominated condition. Thus, participants were able to use contextual information to judge contributions to diversity in a context where White people are presented to be in the minority, suggesting that context may play a more powerful role in diversity judgments than essentialist beliefs about who, generally, contributes the most to diversity in the United States.

Having established the effect of the professional context on diversity judgments, in Study 3 we kept the professional context constant across conditions by telling all participants to make judgments about a group of American elementary school teachers. However, we manipulated target group composition to either align with (primarily White women) or diverge from (primarily White men) national representation in the profession. We found that only in the condition in which the target group was as White female-dominated as at the profession were White men perceived as contributing more to diversity than White women. When the target group included more White men than White women, both targets were perceived as contributing equally to diversity. This occurred despite White women's clear overrepresentation at the national level.

Study 3's findings indicate participants' attention to target group representation, such that even under the same professional context, there were differences in White men and women's perceived contributions to diversity depending on representation in the target group. We consider this pattern to be problematic in some situations, as it may create barriers to change at broader levels (i.e., organizational, national, worldwide). For example, if a group feels that they are doing sufficiently well in terms of representation, they may feel less pressure to increase representation even when there is room for improvement in the larger context.

Interestingly, in Study 3, men of color also received boosts to perceived contributions to diversity in the White female-dominated condition; just like how White women's perceived contributions to diversity increased in the Black male-dominated condition in Study 2. Both of these results emerged despite the fact that each group's own representation level was constant across experimental conditions. Potentially, the overrepresentation of a certain group, such as Black men or White women, at multiple contextual levels (i.e., profession and target group) expands perceptions that other groups of people, especially those who are minority group members on both salient dimensions (i.e., race and gender), have much to add to diversity. In other words, perhaps double-minorities are viewed as especially obvious targets for diversification efforts. Alternatively, given that Black men are prototypical of their race and White women are prototypical of their gender (Carpinella et al., 2015; Stroessner, 1996), their overrepresentation in particular might have made race and gender, as categories, more salient than other categories, resulting in benefits for White people (regardless of gender) in Study 2 and men (regardless of race) in Study 3. Future research could benefit from learning more about the processes underlying these effects.

Given that Studies 1–3 established the effect of multiple levels of contextual information on perceived contributions to diversity (even in cases in which such information conflicts), in Study 4 we sought to intentionally direct participants' attention to one context over the other. However, we did not find any overall effects of experimental conditions, or target-by-condition interactions, in Study 4. That is, regardless of whether participants were asked to attend to the professional context, or to the target group itself, White women were perceived as contributing less to diversity than all other targets. While consistent with the overall effect of target identity across Studies 1, 3, and 4, this is not consistent with findings in the White male-dominated condition of Study 3, and suggests that people may be better at attending to professional context information than was suggested in Study 3's White male-dominated condition.

Study 4's results are compelling in that while Studies 1–3 indicated that the effects of target identity may shift based on contextual features at multiple levels, it appears difficult to direct participants to attend to only one piece of contextual information over others. We did find that when directed to the professional context, men of color (especially Asian men and Latino men) were perceived as contributing more to diversity compared to when neither context was made salient in our control condition; however, given the lack of consistent results that meet traditional standards for significance, and a lack of understanding about participants' interpretation of the control condition (in which attention was not directed toward any specific context), no strong claims can be made about the perceived contributions to diversity of men of color under these conditions.

Overall, the results of Studies 1–3 suggest that people might learn about who "counts" as contributing to diversity using a rather "bottom-up" approach; for example, by looking to representation in both broad and narrow contexts to provide information about which identities would add to a group's diversity. While, to some extent, diversity judgments appear to be target-driven (as indicated by the large effects of target identity in three of our studies as well as past work on the topic (e.g., Geerling & Chen, 2021; Unzueta & Binning, 2010), given the differences in perceptions of White men and women (and, in Study 2, Black men and women) across conditions, it is also possible that people focus on the situationally salient features of a particular group to determine whether single individuals would contribute to the diversity of that group. Thus, diversity

judgments may sometimes be based on prior learning of who "counts" as diverse in general, but at other times it may be more dependent upon what information is front of a perceiver at that given moment (especially if it is easily visualized, as when our target group did not align with the professional context in Study 3).

However, we did find evidence that at least some aspects of diversity perceptions may be learned as "essential" features of the target under consideration. In particular, given the spillover effects of race across gender groups in Study 2, and gender across racial groups in Study 3, perhaps people are not always making bottom-up, "literal" diversity judgments but rather determining which identities hold the most weight (e.g., race vs. gender), even if it means individuals who are not drastically underrepresented in the context will be "counted" as increasing group diversity. In fact, given that we found it difficult to call participants' attention to one piece of contextual information only in Study 4, it may require repeated training, or a more explicit or practiced focus on types of information used during diversity decisions, to direct participants' attention to one level of contextual information only.

As detailed in the online supplemental materials, we did not find much evidence for perceiver characteristics that may impact these processes. In Study 4, there was some evidence to suggest a baseline difference in perceptions of White men's contributions to diversity across perceiver race, but our results did not consistently indicate that the role of context on targets' perceived contributions to diversity differed depending on participant characteristics. We were likely underpowered to test these three-way interactions, but it is also possible that the effect of context on the perceived contributions to diversity of individual targets is similar no matter who is making the judgment. Alternatively, because we know perceiver characteristics can affect reactions to diversity efforts in general, such as when minority group members anticipate worse outcomes in companies that present a business case for their diversity efforts (compared to a fairness case; Georgeac, & Rattan, 2023), when women react with greater identity threat to a video showing the existence of gender bias in Science, Technology, Engineering, and Mathematics (unless identity-safe cues are present; Pietri et al., 2019), and when White people experience threat from prodiversity messages and think of diversity as a zero-sum game (Dover et al., 2016; Eibach & Keegan, 2006; Knowles et al., 2014; Norton & Sommers, 2011), we may be examining perceiver characteristics at too late in the process of diversity judgment-making. Nonetheless, the primary mechanism of our effects does not appear to be ingroup bias, but perhaps instead signals that people are attempting to do literal "diversity math" when making these judgments.

Limitations and Future Directions

In this research, we focused quite narrowly on representation with respect to race and gender, each of which was narrowly defined as well (i.e., only White, Asian, Black, and Latine men and women were studied). Although race and gender are the two characteristics that people associate the most with diversity in the United States (Chen, 2012), our understanding of how context may shift the effect of target characteristics on perceived contributions to diversity is limited to only these two types of target identities. This research would benefit from additional studies, especially studies using a multiple-forms approach to conceptualizing diversity judgments (Rios & Cohen, 2023).

Additionally, given that we were interested in individual contributions to diversity, it is important to note that our measures involved single-item diversity judgments about faces taken from the Chicago Face Database. In real-world hiring decisions, there are likely to be many more factors influencing who is perceived to contribute to diversity. These factors are likely to move beyond simple categorizations of race and gender and include more than the target group and professional context (at the national level) information included here.

Constraints on Generality

Overall, this study is limited in its generalizability to both persons and situations. We recruited volunteer participants from the United States, most of whom were White and identified as men. Although that may align with the types of people most often making diversity hiring decisions in America, it is notable that this population is self-selected into a study about diversity judgments and represents only a sliver of the population of stakeholders we care to learn about.

Additionally, we were limited in our exploration of two specific contexts (American elementary school teachers and track and field coaches at the collegiate level). We chose these contexts intentionally because we were interested in how diversity judgments are impacted when one group is clearly overrepresented within a context (Studies 1, 3, and 4) and when White people are presented as being in the numerical minority (Study 2). However, it is unclear whether our results would replicate in different contexts (including those in which people of color are truly overrepresented in the profession). Possibly, given that White people are perceived as less diverse than people of color in general, we have overestimated the role of context in that White people have more room to "grow" in their perceived contributions to diversity. Alternatively, if perceivers from dominant groups are especially motivated to assist the hiring and promotion of other people with dominant identities, we may underestimate the role of context in undermining diversity judgments about people of color.

Conclusion

Our research suggests that judgments of who contributes to a group's diversity can be affected by information about representation in the profession and the target group under consideration. Sometimes, that information may conflict, and in that case it appears that it may be difficult for perceivers to prioritize one piece of contextual information only when making diversity judgments. This has consequences for organizational practices aimed around creating a diverse workforce.

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Received January 30, 2023
Revision received December 1, 2023
Accepted January 18, 2024 ■