Zero-Sum Thinking and the Masculinity Contest: Perceived Intergroup Competition and Workplace Gender Bias

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Gender-based zero-sum thinking reflects beliefs that women's status gains correspond directly with men's status losses. These beliefs may help explain people's resistance to gender equity. Here, two studies examined the association between men's zero-sum thinking and workplace gender biases. In Study 1, men (N = 235) employed in workplaces with stronger masculinity contest norms reported observing stronger bias against women in the workplace, and this effect was mediated by an increase in their own zero-sum thinking. In Study 2, college students (N = 269) read information that either threatened or affirmed the gender status hierarchy and then reported their zero-sum thinking and their support for gender fair workplace policies that undermine the masculinity contest. Men, but not women, reduced support for gender fair policies following a gender hierarchy threat, and this effect was mediated by an increase in their zero-sum thinking. Discussion considers the workplace policy implications of these findings.

> If businesses are forced to pay women the same as male earnings, that means they will have to reduce the pay for the men they employ.... And as even more women thus enter the workforce, that creates more competition for jobs (even men's jobs) and puts further downward pressure on the pay for all jobs.
>   James Green, Vice Chair of Wasatch County Republican Party, UT, February 15, 2017

Although women now compose 47% of the U.S. workforce, up from 30% in 1950 (Toossi, 2002; U.S. Department of Labor, 2011), the world of work is still seen as a male domain in many ways. For instance, stereotypes of managers are still primarily masculine (Koenig, Eagly, Mitchell, & Risitikari, 2011), and

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women hold only 17.9% of board seats on Fortune 1,000 companies (2020 Women on Boards, 2015). Following years of narrowing the gender pay gap, convergence stalled in recent years (Blau & Kahn, 2006; Institute for Women's Policy Research, 2016). And, as many of the articles in this issue demonstrate, workplace norms often reinforce the outdated male-breadwinner/female-homemaker dichotomy by encouraging full-time work devotion (Blair-Loy, 2003) and ignoring the need for flexible work arrangements that could ease the strains of home and family obligations that disproportionately fall to women (Williams, Berdahl, & Vandello, 2016). In short, masculine workplace norms and organizational climates continue to impede workplace gender parity (Glick, Berdahl, & Alonso, 2018).

Here, we examine a social cognitive factor—zero-sum thinking (ZST)—that may help to maintain masculine workplace cultures that suppress women's workplace progress. As illustrated in the opening quote, gender-based ZST reflects a mindset in which "women's gains equal men's losses," effectively linking any workplace progress made by women to reductions in the status of men. Relying on the logic of system justification theory (Jost, Banaji, & Nosek, 2004), we examine here whether gender-based ZST among men fuels bias against women in the workplace, especially in contexts that position women as interlopers in masculine domains. If so, this would suggest that men resist workplace gender equity in part because they—like Republican Party Vice Chair James Green—view women's workplace advances as a loss of jobs and earnings for men. We begin with overviews of system justification theory and ZST.

System Justification Theory and Zero-Sum Thinking

According to system justification theory, people are motivated to view the social systems that govern their lives as fair and legitimate, because changing or leaving the system is not feasible for most individuals (Jost et al., 2004). However, low- and high-status group members presumably have different motivations for justifying the status quo. High-status group members rationalize the status quo to protect their group-based interests, since the existing social arrangements place their group in a position of privilege (Sidanius, Pratto, & Bobo, 1994). In contrast, low-status group members are motivated to avoid feeling trapped in an oppressive system, and to achieve this, they must rationalize their unequal treatment within the system when they view upward mobility as unlikely (Jost, Pelham, Sheldon, & Sullivan, 2003). Given that men as a group are cross-culturally and historically higher in status than women, men should be threatened by information suggesting that women are gaining social status, as this information implies that the gender status hierarchy is unstable. Thus, when men encounter information that the gender hierarchy is in flux, their motivation to defend the status quo should increase.

Moreover, we propose that men's defensive responses to an unstable gender hierarchy are fueled by ZST, or a tendency to perceive low-status groups as

competitors. ZST represents beliefs about intergroup relations that position social groups in direct competition with each other for access to status, rights, and resources. This thinking is theorized as an evolved cognitive adaptation that arises when group members perceive threats to their resources and motivates efforts to protect these resources (Meegan, 2010). Thus, ZST may serve as a cognitive heuristic that facilitates defensive responses on behalf of the group. Moreover, higher status compared to lower status group members may default more readily to ZST when system threats arise, as a means of protecting their upper hand. That is, having more to lose during intergroup competitions may predispose higher status groups to engage in ZST at a lower threshold of perceived threat. Consistent with this logic, high-status groups respond competitively to attempts made by lower status groups to improve their status (Branscombe, Ellemers, Spears, & Doosje, 1999). More relevant to the current project, members of high-status groups (e.g., men, White people) strengthen their ZST when they believe that their in-group is losing its advantaged position (Wilkins, Wellman, Babbitt, Toosi, & Schad, 2015). Similarly, White but not Black people perceive racial discrimination in zero-sum terms, with anti-White bias increasing as anti-Black bias decreases in the United States (Norton & Sommers, 2011). Thus, ZST motivates high-status group members to preserve their group-based privilege when they perceive lower status groups as gaining status.

Specifically, ZST should activate a set of defensive responses that either restore psychological stability by legitimizing unequal distributions of status, or maintain the hierarchy by sabotaging the efforts of low-status groups to gain status. To illustrate, one study found that ZST mediated the link between people's support for group inequalities that privilege the in-group and their attitudes of egalitarianism toward a salient out-group (Esses, Jackson, & Armstrong, 1998). Thus, reminders of group competition combined with the presence of a salient out-group should activate ZST, which then fuels defensive responses that maintain the hierarchy. In the current project, we examine multiple forms of workplace gender bias as defensive responses fueled by men's ZST.

Gender Bias in the Workplace

When men view women as a competitive out-group, they may respond defensively in ways that devalue women and female gender role norms in the workplace. While gender bias in the workplace can take several forms, we focus here on *hostile and benevolent sexism toward women* and *opposition to gender fair workplace policies*.

Hostile and Benevolent Sexism. Hostile and benevolent work norms reflect ambivalent sexism (Glick & Fiske, 1996). Hostile work norms include antagonizing behaviors that devalue women's abilities such as talking over women

in meetings or giving men credit for women's work (Cikara, Lee, Fiske, & Glick, 2009). Benevolent work norms involve paternalistic behaviors such as offering women extra help on challenging assignments or treating women as if they are sweeter and friendlier than men (Kuchynka et al., 2018). Importantly, both types of norms can undermine women's job performance and feelings of belonging. Women exposed to hostilely sexist treatment in the workplace experience lower job satisfaction and increased absenteeism, depression, and physical illness symptoms (Fitzgerald, 1993). Exposure to benevolently sexist treatment increases women's rumination, reduces their working memory capacity (Dardenne et al., 2013; Dardenne, Dumont, & Bollier, 2007), and negatively predicts their grade-point average and self-efficacy in college science, technology, engineering, and mathematics (STEM) classes (Kuchynka et al., 2018).

Thus, hostile and benevolent sexism norms both legitimize men's higher workplace status, but for different reasons: Hostile work norms directly convey disrespect for women's contributions, and benevolent work norms imply that women need to be treated more gently than men. These norms cast women as less-than-ideal workers, thereby reinforcing the notion that men's higher workplace status is fair and just. Further, these norms can hurt women's ability to gain workplace status, such as when men take credit for women's work, or when women receive less challenging work assignments out of a desire to protect them (Bernstein & Russo, 2008; King et al., 2012). In extreme cases, hostile and benevolent work norms may create an unfriendly environment that pushes women to exit the workplace altogether. These work norms may thus reflect defensive responses to women's encroachment in traditionally masculine domains.

Opposition to Gender Fair Workplace Norms. While hostile and benevolent sexism norms sustain the unequal gender hierarchy, gender fair workplace norms combat it. These norms—such as *gender inclusion* and *work-life balance*—are key factors that promote women's workplace progress by attenuating gender bias (Bailyn, 2011; Dutton, Ashford, Lawrence, & Miner-Rubino, 2002). Gender inclusion consists of organizational awareness of, and support for, equal gender representation at senior organization levels and intolerance for "old boys' clubs" in which small groups of men control the workplace. These norms directly undercut the *dog eat dog* norm of masculinity contest cultures (MCCs), which fosters ruthless competition among cliques of insiders (Glick et al., 2018). Work-life balance norms allow and encourage workers to control when and where they work, and promote creative work-life balance solutions. These norms counteract the *put work first* norm of MCCs, which encourages devotion to work above family or other outside obligations (Glick et al., 2018). Women, who assume the majority of housework and childrearing responsibilities, stand to benefit from workplace norms that support and encourage flexible work arrangements (Bianchi, Sayer, Milkie, & Robinson, 2012). Thus, withdrawing support for gender fair

workplace norms may reflect a defensive attempt on the part of men to maintain their workplace advantage by rejecting organizational factors that promote gender egalitarianism.

Masculinity Contest Cultures and Women as Interlopers

As detailed in several articles in this volume, many workplace environments are characterized by masculinity contest norms of *dog eat dog* (a hypercompetitive and socially ruthless dynamic), *put work first* (an expectation of total devotion to work over family or other outside obligations), *strength and stamina* (equating athleticism and size with status), and *show no weakness* (pressure to avoid vulnerable emotions or uncertainty). These norms privilege men and male-typed traits over women and female-typed traits in several ways. For instance, women's smaller physical stature and lower body strength disadvantage them in contexts in which "strength equals status," and the norm of *show no weakness* proscribes stereotypically female emotions such as sadness and doubt, while allowing stereotypically male emotions such as anger and pride (Plant, Hyde, Keltner, & Devine, 2000). Women are also disadvantaged relative to men by the *put work first* norm, because women are typically the primary household and childcare providers (Bianchi et al., 2012), even among dual earner parent couples who now constitute 60% of U.S. families (Parker, 2015). The *put work first* norm disadvantages women and primary caregivers by increasing the difficulty of balancing competing work and home responsibilities, and promoting the perception that those with family responsibilities are not fit for high-status roles. Thus, MCC norms thwart gender egalitarianism.

More generally, masculinity contest norms reflect a competitive desire for workplace status that not only pits men against other men, but positions women as interlopers in a normative masculine culture. In particular, women's successes in workplaces with strong masculinity contest norms should be threatening, because they disrupt men's structural advantage. Thus, we propose that organizations high in masculinity contest norms are the very sorts of contexts in which reminders of women's status gains activate ZST among men; in turn, ZST should motivate defensive behavioral and attitudinal biases against women in the workplace.

Overview of Studies

In two studies, we examine support for a model in which ZST mediates the link between women's status gains and gender bias in the workplace. Study 1, a cross-sectional correlational study, uses an archival sample of full-time employed men (Glick et al., 2018). This study examines whether MCC norms and women's representation at higher organizational levels jointly predict hostile and benevolent work norms, mediated by men's ZST. Study 2 is an experiment using a

college-aged sample in which we manipulate exposure to information that women are either gaining status relative to men, or remaining stable in status. In Study 2, we examine whether information about women's status gains reduces men's (but not women's) support for gender inclusion and work-life balance norms, mediated by men's ZST.

Study 1

In establishing the validity of the MCC scale, Glick and colleagues found a modest correlation ($r = .34$, $p < .05$) between the full MCC and hostile and benevolent work norms (what they termed *heterosexist culture*; Glick et al., 2018). The goal of Study 1 was to expand on this finding by examining whether the link between MCC norms and sexist work norms was mediated by men's ZST, and especially in organizations characterized by women's successes (i.e., those with higher proportions of high-status women). To do this, we reanalyzed Glick et al.'s (2018) data set (which contained an abbreviated measure of ZST) to test a model in which the link between MCC and hostile and benevolent work norms is mediated by ZST (H1), and moderated by the proportion of high-status women in the workplace (H2).

Method

Participants and Procedure. Men ($N = 235$; Age$_M = 35.03$, $SD = 9.19$; 78% White, 6% Hispanic, 4% Black, 2% Native American, 2% other) were recruited form Amazon's Mechanical Turk. MTurk account holders had to be currently employed to be eligible to complete the survey. All study scales were completed in the order listed below; order of item administration within each scale was randomized.

Measures.
Masculinity Contest Culture. Participants rated the masculinity contest norms in their current workplace by completing the MCC (Glick et al., 2018), which assesses norms of *dog eat dog* (e.g., "You've got to watch your back"), *put work first* (e.g., "Taking days off is frowned upon"), *strength and stamina* (e.g., "Physical stamina is admired"), and *show no weakness* (e.g., "Seeking other's advice is seen as weak"). All items were answered on scales ranging from 1 (*not at all true of my work environment*) to 5 (*entirely true of my work environment*), and they were averaged to create a composite ($\alpha = .93$).
Zero-Sum Thinking. Participants responded to three items (modified from Wilkins et al., 2015) that measured ZST (e.g., "As women have gained status in the workplace, men have lost status in the workplace"; "Women in the work force take jobs away from men"; "The more money that women earn in the workplace,

Table 1. Correlations and Descriptive Statistics for Study 1 Variables

Variable	1	2	3	4	Mean	SD
1. MCC	–				2.32	0.86
2. % High-status women	−.23**	–			1.88	0.98
3. ZSTs	.24***	−.02	–		2.58	1.44
4. Sexist work norms	.54***	−.24***	.27***	–	2.25	0.75

Note. **$p < .01$, ***$p < .001$. MCC = masculinity contest culture scale; ZST = zero-sum thinking.

the less money men earn"). The items were answered on scales ranging from 1 (*strongly disagree*) to 7 (*strongly agree*), and they were averaged to form a ZST composite ($\alpha = .87$).

Women's Presence in the Workplace.   The presence of women in the workplace was measured with five items that assessed the proportion of women at different organizational levels (e.g., new hires, first promotion, middle managers, senior managers, and corporate officers). Each item was answered on a scale of 1 (*less than 20% women*) to 5 (*more than 80% women*). The index of women in high-status positions was an average of women at the senior management and corporate officer levels ($\alpha = .92$).

Perceptions of Sexist Work Norms.   Perceptions of hostile and benevolent sexism norms were measured with a 16-item scale (Bradley-Geist, Glick, Hebl, & King, 2018). Eight items measured hostile sexism in the workplace (e.g., "Men will sometimes take over tasks from women and cut them out"; "Women who express strong opinions are looked down upon and criticized"), and eight items measured benevolent sexism in the workplace (e.g., "Female employees tend to receive extra help on challenging assignments"; "People in my workplace look to the female employees to add a warm, nurturing presence to the work environment"). All items were rated on scales ranging from 1 (*not at all*) to 5 (*very true*), and they were averaged to create a composite of sexist work norms ($\alpha = .90$).

Demographics.   Participants indicated their age, race, and ethnicity.

Results

Correlations among Study Variables.   See Table 1 for zero-order correlations among, and descriptive statistics for, all study variables. Note that MCC norms correlated positively with men's ZSTs ($r = .24, p < .001$).

Test of Moderated Mediation.   Hypotheses 1 and 2 state that the indirect effect of MCC norms on perceptions of sexist work norms via men's ZST (H1) will be moderated by the proportion of high-status women in the workplace (H2).
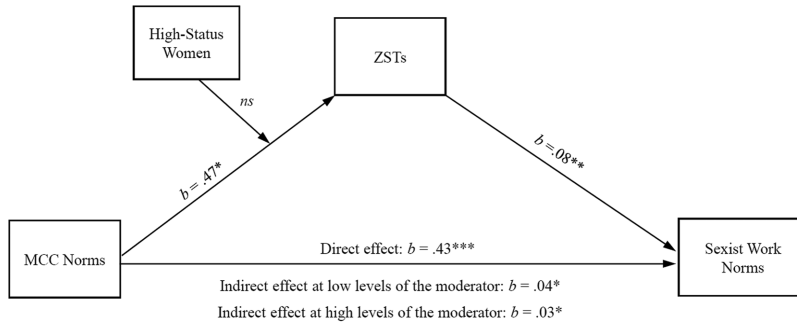
Fig. 1. Indirect effect of masculinity contest culture norms on sexist work norms via zero-sum thinking, moderated by the proportion of high-status women in the workplace.
Note. $^*p < .05$, $^{**}p < .01$, $^{***}p < .001$. MCC = masculinity contest culture norms; ZST = zero-sum thinking.

Thus, we anticipated a moderated mediation pattern. To test these hypotheses, we used Hayes' (2013) PROCESS macro (Model 7) with 10,000 bootstrap samples. We treated MCC norms as the predictor, proportion of high-status women as the moderator, ZST as the mediator, and perceived sexist work norms as the outcome variable. Figure 1 depicts the effects associated with each path in the model. As shown in Figure 1, MCC norms significantly predicted men's ZST, as well as their perceived sexist work norms. However, the proportion of high-status women in the workplace was not a significant moderator ($b = -.04$, $SE = .11$, $p > .74$, 95% CI [$-.26$, .18]), and the index of moderated mediation was not significant ($b = -.003$, $SE = .01$, 95% CI [$-.03$, .02]), indicating a lack of support for Hypothesis 2. Instead, in support of Hypothesis 1, the conditional indirect effects of MCC norms on sexist work norms through ZST were significant at each level of the moderator. That is, MCC norms predicted sexist work norms via ZST when there were relatively few women in high-status positions ($b = .04$, $SE = .02$, 95% CI [.01, .08]), and also when there were relatively many women in high-status positions ($b = .03$, $SE = .02$, 95% CI [.002, .09]).

Discussion

Study 1 demonstrates that men's ZST mediates the association of masculinity contest norms and perceived sexist work norms. Specifically, in workplaces higher in masculinity contest norms, men also observed more hostilely and benevolently sexist treatment of women, mediated by their own gender-based ZST. We interpret this pattern to mean that women's presence in workplaces high in MCCs activates men's competitive, gender-based zero-sum beliefs. In turn, ZST motivates defensive responses, including tolerance for disrespectful and paternalistic

treatment of women. Of course, the cross-sectional nature of these data makes it impossible to determine the directional nature of these effects. Therefore, it remains unclear whether workplaces characterized by MCCs increase men's ZST, men's ZST promotes workplaces with stronger masculinity contest norms, or some third variable drives this association. It is also possible that the links between MCCs and men's ZST are bidirectional and iterative, continually reinforcing each other.

Contrary to our hypothesis, the proportion of women in high-status positions in the workplace did not moderate the relationship between masculinity contest norms and men's ZST. Instead, masculinity contest norms and ZST were associated with sexist work norms regardless of the proportions of women present in high-level positions. Perhaps organizations with more female representation at senior levels also tend to be more gender egalitarian, and therefore less likely to foment MCCs and ZST. Consistent with this possibility, the percentages of high-status women correlated negatively—though weakly—with both MCC norms and ZSTs (see Table 1). Alternatively, perhaps, it is not the *static* proportion of successful women in masculine domains that activates men's defensive responses; instead, perhaps, it is the perceived *dynamic* entrance of women into such domains that activates ZST and its downstream defensive responses. In Study 2, we examined this possibility by manipulating exposure to information about women's encroachment into the workforce.

Study 2

Having established in Study 1 that ZST mediates the link between MCC norms and sexist work norms, Study 2 tested whether ZST increases in response to information that threatens the gender hierarchy status quo. Specifically, we propose that information about an unstable gender hierarchy (*system threat* information) should activate, in men, a zero-sum mindset that motivates defensive opposition to gender fair workplace norms. In Study 2, we also controlled for participants' gender role attitudes (GRAs), to ensure that any observed differences in support for gender fair workplace norms do not merely reflect preexisting preferences for traditional sex-based labor divisions. Because all conclusions remain the same whether or not we control for these attitudes, we present results without covariates for the sake of clarity. Study 2 tested the following hypotheses: Men, but not women, should increase in ZST following a system threat (H3). Men, but not women, should decrease support for gender inclusion norms (H4a) following a system threat, mediated by ZST (H4b). Men, but not women, should decrease support for work-life balance norms (H5a) following a system threat, mediated by ZST (H5b).

Method

Participants. Participants were 269 college students who completed all study measures in exchange for partial course credit. Of these, 27 failed an attention check (see below) and were deleted from analyses. This left a final sample of 167 women and 73 men who ranged in age from 18 to 49 ($Age_M = 21.24$, $SD = 4.17$; 48% White, 9% Hispanic, 16% Black, 10% Asian, 3% Arabic, 5% Bi-racial, 9% other). Approximately half of the student sample (49.6%) indicated that they were currently employed.

Procedure. Participants completed the study at the time and location of their choosing via a secure online platform (Qualtrics.com). After giving their informed consent, participants were introduced to a study about "Economic and Political Trends in the U.S." To obscure our primary focus on women's status gains, we first presented participants with a bogus, 264-word filler article that described "Recent Trends in Urbanization." Next, based on random assignment, participants read one of two versions of a bogus *Guardian Unlimited* article that served as the system threat manipulation. This article, modified from one used by Morton, Postmes, Haslam, and Hornsey (2009), emphasized either the substantial gains that women have made in workplace, educational, and political domains over the past century (*system threat* condition), or the inequality that women still face relative to men (*system stability* condition). For instance, the system threat article was titled "Women May Win the War in the Battle of the Sexes," and it stated "women are catching up to their male counterparts .... [i]n the areas of employment, salary, education, politics, the courtroom, and at home." In contrast, the system stability article was titled "Women Still Losing the War in the Battle of the Sexes," and it stated that "women's inequality remains as real as it was 100 years ago .... [i]n the areas of employment, salary, education, politics, the courtroom, and at home" (see the Appendix for the full text of both articles). After reading the target article, participants completed the following measures in the order presented below, and then received a full debriefing.

Zero-Sum Thinking (ZST). Participants responded to the same measure of ZST from Study 1, with the addition of one extra item (e.g., "When women work they are taking jobs away from men"; $\alpha = .85$). (This additional item was excluded from Study 1 due to space limitations.)

Gender Fair Workplace Norms. We wrote 13 items measuring support for gender fair workplace norms. Seven items measured support for gender inclusion (e.g., "Organizations should strive to promote general cultural awareness of issues concerning women at work"), and six items measured support for work-life balance (e.g., "Any employee should be allowed to take advantage of flexible work-family arrangements as long as the work gets done"). All statements were rated on scales of 1 (*strongly disagree*) to 7 (*strongly agree*). In a pilot study, we submitted the

items to a principal axis factor analysis with varimax rotation, which yielded two factors that accounted for 62% of the total variance. With the exception of one work-life balance item that loaded below .40 on both factors, all items loaded above .45 on their target factor (see Table 2 for the full text and factor loadings of all items). Demonstrating the validity of these measures, the pilot study revealed that ZST negatively predicted support for both gender inclusion and work-life balance norms, controlling for GRAs. We therefore averaged items to create a gender inclusion composite ($\alpha = .87$) and a work-life balance composite ($\alpha = .75$). Note that the correlation between these norms ($r = .67$, $p < .001$) indicates that they are strongly associated but nonetheless conceptually distinct.[1]

Gender Role Attitudes. GRAs were assessed using Chang's (1999) measure, which asks respondents about the importance of women versus men achieving goals in five traditionally male domains (e.g., "Be a leader," "Receive the highest education possible") and five traditionally female domains (e.g., "Take care of children," "Do housework"). Each goal is rated on a scale of 1 (*much more important for women*) to 7 (*much more important for men*), with a midpoint labeled *equally important for women and men*. After reverse-coding items assessing female-typed goals, we averaged the 10 items ($\alpha = .89$); higher scores indicate more traditional GRAs.

Attention Checks. At the end of the study, participants were asked to select which of two statements best reflected the main conclusion of the article they read earlier: "Things have changed a lot because women are catching up to men in power and status," or "Things haven't really changed very much because women still lag far behind men in power and status." Those ($n = 27$) who answered incorrectly were deleted from analyses. People were slightly more likely to fail the attention check in the system stability condition ($n = 18$; 13.7%) than they were in the system threat condition ($n = 9$; 6.6%), χ^2 (1, $N = 267$) = 3.72, $p = .054$, but manipulation check failure did not differ by participants' sex, age, or race, $ps > .27$.[2]

Demographics. Participants indicated their sex, age, race, and ethnicity.

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[1]The results of a principal axis factor analysis on these items in Study 2 did not replicate the two-factor structure obtained in the pilot sample, but we retained gender inclusion and work-life balance norms as separate constructs in Study 2 analyses because of their treatment in the literature as conceptually distinct factors influencing women's workplace progress (Dutton et al., 2002). Note also that our results remain significant whether we combine them into one variable or treat them as two constructs.

[2]When we reanalyzed the data retaining the responses of participants who failed the attention check, all results remained significant with three exceptions: (1) The indirect effect of system threat on men's support for gender inclusion norms via ZST dropped to marginal significance ($p = .10$); (2) the simple effect of participant sex on support for work-life balance norms in the system threat condition dropped to nonsignificance ($p = .20$); and the indirect effect of system threat on men's support for work-life balance norms via ZST dropped to nonsignificance ($p = .27$).

Table 2. Items Assessing Support for Gender Fair Workplace Norms and Their Factor Loadings (Pilot Study)

Item	Factor 1	Factor 2
Gender Inclusion Norms		
1. Organizations should work to identify areas where women employees are disadvantaged relative to men, and work to change the culture in ways that produce more gender equity.	**.77**	.32
2. There ought to be equal or near equal representation of women and men in senior-level positions of organizations.	**.86**	.26
3. There ought to be equal or near equal representation of women and men in middle-level positions of organizations.	**.81**	.29
4. People in top management positions of an organization ought to have a good understanding of gender-equity issues.	**.66**	.49
5. People who have a lot of influence in organizations should be open to placing women in senior-level positions.	**.61**	.43
6. Organizations should strive to promote general cultural awareness of issues concerning women at work.	**.72**	.38
7. Organizations should prevent men in power from creating a culture of "boy's clubs" that exclude women.	**.66**	.34
Work-Life Balance Norms		
1. Businesses should redesign the workplace to make it easier for employees to balance their work lives and personal lives.	.41	**.73**
2. Organizations should view work-family issues as an opportunity to create innovative and productive work practices.	.55	**.65**
3. Any employee should be allowed to take advantage of flexible work-family arrangements as long as the work gets done.	.28	**.82**
4. Employees should have collective control over where and when their work gets done.	.25	**.46**
5. Employees who need to take time off to deal with family responsibilities should not be penalized by management at work.	.44	**.75**

Note. Bolded values indicate factor loadings on the target factor.

Table 3. Correlations and Descriptive Statistics for Study 2 Variables

Variable	1	2	3	Mean	Standard deviation
1. Zero-sum thinking	–			2.23	1.06
2. Gender inclusion norms	$-.37^{**}$	–		5.59	1.05
3. Work life balance norms	$-.34^{**}$	$-.67^{**}$	–	5.28	0.95
4. Gender role beliefs	.01	.08	.09	5.25	0.53

Note. $^{**}p < .01$.

Table 4. Study 2 Means and Standard Errors as a Function of Condition and Participant Gender

Dependent variable / Gender	System threat M (SE)	System stability M (SE)
Zero-Sum Thinking		
Men	2.77_a (0.17)	2.20_b (0.17)
Women	2.08_b (0.11)	2.17_b (0.12)
Gender inclusion norms		
Men	4.93_a (0.17)	5.55_b (0.16)
Women	5.71_b (0.11)	5.78_b (0.11)
Work-life balance norms		
Men	4.97_a (0.16)	5.50_b (0.16)
Women	5.28_{ab} (0.10)	5.32_b (0.11)

Note. Means within the same row or column whose subscripts differ are significantly different at $p < .05$.

Results

Effects of System Threat on Outcomes. See Table 3 for correlations among, and descriptive statistics for, Study 2 outcome variables. Hypotheses 3–5 state that men, but not women, will increase in ZST (H3), and withdraw support for gender inclusion norms (H4a) and work-life balance norms (H5a), following system-threatening information about women's status gains. To test these hypotheses, we submitted ZST, gender inclusion norms, and work-life balance norms to separate 2 (participant gender: women vs. men) × 2 (system threat vs. system stability) Analyses of Variance (ANOVAs). Means associated with interaction effects appear in Table 4.

The ANOVA on ZST produced the predicted gender-by-threat interaction, $F(1, 235) = 4.98$, $p < .03$, $\eta_p^2 = 0.02$, which qualified a main effect of participant gender, $F(1, 235) = 6.18$, $p < .02$, $\eta_p^2 = 0.03$, and a marginally significant main effect of threat condition, $F(1, 235) = 2.77$, $p < .10$, $\eta_p^2 = 0.01$. As shown in Table 4, men had higher ZST in the system threat condition than they did in the system stability condition, $F(1, 235) = 5.47$, $p = .02$, $\eta_p^2 = 0.02$, while women's

ZST did not differ by condition, $F < 1$. Moreover, men had higher ZST than women did under system threat, $F(1, 235) = 11.32$, $p < .01$, $\eta_p^2 = 0.05$, while men's and women's ZST did not differ in the system stability condition, $F < 1$. Thus, Hypothesis 3 was supported.

The ANOVA on gender inclusion norms yielded a similar gender-by-threat interaction, $F(1, 235) = 3.87$, $p = .05$, $\eta_p^2 = 0.02$, which qualified a main effect of gender, $F(1, 235) = 11.99$, $p < .01$, $\eta_p^2 = 0.05$, and a main effect of system threat, $F(1, 235) = 6.08$, $p < .02$, $\eta_p^2 = 0.03$. The means in Table 4 reveal the expected pattern: Men withdrew support for gender inclusion norms following system threat information relative to system stability information, $F(1, 235) = 7.08$, $p < .01$, $\eta_p^2 = 0.03$, whereas women's support for gender inclusion norms did not differ as a function of condition, $F < 1$. Looked at another way, men supported gender inclusion norms less than women did when the system was threatened, $F(1, 235) = 15.01$, $p < .001$, $\eta_p^2 = 0.06$, but men and women did not differ when the system was described as stable, $F(1, 235) = 1.09$, $p > .27$. This supports Hypothesis 4a.

The ANOVA on work-life balance norms produced a marginally significant interaction of gender-by-threat, $F(1, 235) = 3.46$, $p < .07$, $\eta_p^2 = 0.01$, that qualified a main effect of threat condition, $F(1, 235) = 4.49$, $p < .04$, $\eta_p^2 = 0.02$. No effect of participant gender emerged, $F < 1$. Consistent with the prior two analyses, the means in Table 4 demonstrate that men showed less support for work-life balance norms in the system threat versus the system stability condition, $F(1, 235) = 5.71$, $p < .02$, $\eta_p^2 = 0.02$, while women's support for work-life balance norms was unaffected by the threat manipulation, $F < 1$. Moreover, in the system threat condition, men showed marginally significantly less support for work-life balance norms than women did, $F(1, 235) = 2.74$, $p < .10$, $\eta_p^2 = 0.01$, but men and women did not differ in the system stability condition, $F < 1$. Thus, Hypothesis 5a was supported.

Tests of Moderated Mediation. Hypotheses 4b and 5b state that the indirect effects of system threat on support for gender inclusion norms (H4b) and work-life balance norms (H5b) via ZST will be significant among men, but not women. Thus, we anticipated moderated mediation patterns. To test these hypotheses, we used Hayes' (2013) PROCESS macro (Model 8) with 10,000 bootstrap samples. We treated system threat as the independent variable, participant gender as the moderator, ZST as the mediator, and gender inclusion and work-life balance norms as outcome variables.

The index of moderated mediation was significant in the model predicting gender inclusion norms ($b = -.22$, $SE = .10$, 95% CI [$-.44$, $-.03$]). As shown in Figure 2, the conditional indirect effect of system threat on support for gender inclusion norms via ZST was significant among men ($b = -.19$, $SE = .09$, 95% CI [$-.39$, $-.03$]), but not among women ($b = .03$, $SE = .05$, 95% CI [$-.08$, $.13$]). Similarly, a significant pattern of moderated mediation emerged in the
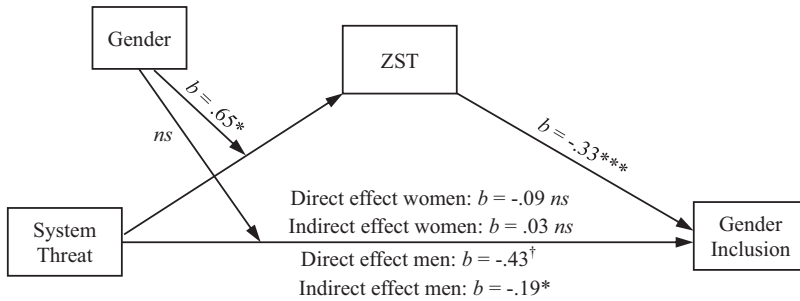
Fig. 2. Indirect effects of system threat on support for gender inclusion norms via zero-sum thinking, moderated by participant gender.
Note. $^{†}p < .10$, $^{*}p < .05$, $^{***}p < .001$. ZST = zero-sum thinking.
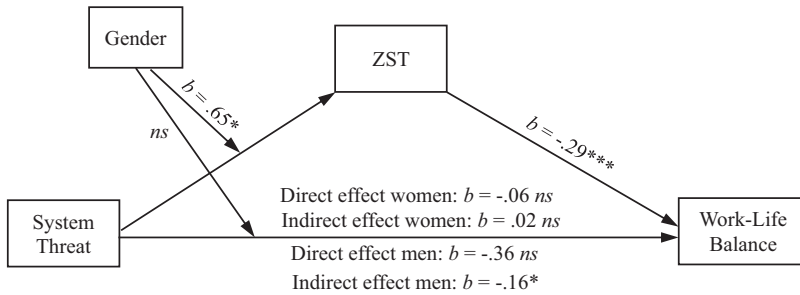
Fig. 3. Indirect effects of system threat on support for work-life balance norms via zero-sum thinking, moderated by participant gender.
Note. $^{*}p < .05$, $^{***}p < .001$. ZST = zero-sum thinking.

model predicting work-life balance norms ($b = -.19$, $SE = .09$, 95% CI [$-.39$, $-.03$]). Again, as illustrated in Figure 3, the conditional indirect effect of system threat on support for work-life balance norms via ZST was significant among men ($b = -.16$, $SE = .08$, 95% CI [$-.34$, $-.04$]), but not among women ($b = .02$, $SE = .05$, 95% CI [$-.07$, $.12$]). Thus, supporting Hypotheses 4b and 5b, men (but not women) withdrew support for gender fair workplace norms following a reminder of women's dynamic status gains, mediated by an increase in their ZST.

General Discussion

Because men hold disproportionate power and influence in organizations, changing workplace cultures will likely require their buy-in. The findings presented here suggest one barrier to men's cooperation in making workplaces more equitable for women. Specifically, men may be inclined to view the workplace as a

zero-sum game in which any gains made by women must come at men's expense. This ZST should be exacerbated under conditions of perceived change to the gender status hierarchy and should, in turn, motivate defensive responses including sexism toward women and opposition to workplace norms that could level the playing field. Moreover, these dynamics should be particularly strong in workplaces characterized by MCCs, because successful women in such environments are viewed as interlopers who seek men's resources.

The two studies reported here are consistent with this logic. Study 1 revealed that masculinity contest norms indirectly predict perceived hostile and benevolent sexism against women via men's ZST. Thus, in organizations that more strongly privilege male role norms such as stamina, ruthlessness, and work devotion, men also adopt stronger "us/them" mindsets that cast women as competitors; in turn, these mindsets predict an increased tendency to observe hostile (insulting, derogatory) and benevolent (paternalistic, undermining) treatment of women in the workplace. This suggests that MCC norms and ZST may work in tandem to foster organizational cultures of gender bias against women.

Note, however, that we expected Study 1's findings to be especially strong in workplaces with larger proportions of high-status women, because successful women should threaten the status quo and activate men's protective, ZST. Instead, we found no evidence that the proportion of high-status women moderates the indirect effect of MCC norms on workplace sexism via ZST. It is possible that organizations with more high-status women are less inclined to foster MCCs in the first place. It is also possible that it is women's perceived movement into high-status positions, and not their preexisting occupation of such positions, that is especially likely to heighten men's ZST. Either way, it must be emphasized that MCCs and men's ZST predict increases in workplace sexism against women regardless of how many women occupy positions of organizational power.

Study 2 improved on the methods of Study 1 by directly manipulating women's status gains versus stability, and observing the effects of this manipulation on men's ZST and their support for gender fair workplace policies. This study revealed that exposure to a system threat led to increases in men's, but not women's ZST. In turn, increased ZST reduced men's support for workplace policies that directly undermine two key dimensions of the masculinity contest: *dog eat dog* norms and *put work first* norms. Gender inclusion norms—in opposition to dog eat dog norms—explicitly proscribe insider "boy's clubs" that exclude women, and work-life balance norms oppose "put work first" norms by supporting employees who have family responsibilities. Thus, Study 2 demonstrated direct links between men's ZST and their resistance to changing masculinity contest norms.

Notably, Study 2 established causal links between women's dynamic encroachment into traditionally male domains and men's competitive ZST. Thus,

reminders of women's ongoing status gains may activate in men an increased (if erroneous) perception that social status and its spoils—such as wages, prestige, and power—are limited resources over which gender groups must compete. Indeed, the quote by Utah Republican James Green that opened this article—in which he expressed ZST about jobs and wages—was issued in response to a bill being considered by the Utah legislature that would require a study on the gender wage gap (Phillips, 2017). If mere discussions of the gender wage gap trigger ZST among men, then it is feasible that women's workplace successes also activate such thinking. Consequently, competitive zero-sum mindsets activate defensive responses aimed at sustaining the unequal gender hierarchy by fostering workplace gender bias. Thus, the links among women's workplace status gains, men's ZST, and organization-level gender bias may reflect a dynamic and self-perpetuating cycle that stalls women's workplace progress.

Limitations and Future Directions

Because Study 1 employed a correlational design, we could not determine causal relationships between MCC norms, ZST, and sexist work norms. Indeed, it is important to use caution when interpreting mediation models that use cross-sectional data. In addition, our measure of sexist work norms in Study 1 assessed men's perceptions of hostile and benevolent treatment of women, and not their personal perpetration of sexist treatment. We do not know how accurately men's reports of sexist work norms reflect the actual experiences of women in those organizations. Future research should use experimental or longitudinal designs to allow for more confident causal conclusions, as well as additional methods for assessing workplace sexism such as third-party ratings or women's reports of their personal experiences.

Subsequent research should also replicate the present findings with larger, more diverse samples. For instance, Study 2's reliance on a college student sample may limit its generalizability to the world of work and employed workers. Although college students are often poised to enter the workforce, we do not know whether reminders of women's workplace status gains pose the same threat to college students as they would to employed adults.

Policy Implications

If competitive, us/them mindsets lie at the root of men's defensive responses to women's workplace success, then one key to creating more inclusive and gender equitable workplaces may involve directly defusing ZST. This insight has implications for organizational policies. Specifically, we envision two ways in which organizational policies can defuse the likelihood of ZST. First, organizations can purposefully avoid practices and wordings that appear to privilege or benefit

women at men's expense. As Ely and Meyerson (2000) note, one popular—though largely ineffective—organizational strategy for combatting gender bias involves valorizing that which is feminine. This approach may involve adopting affirmative action policies that are perceived as primarily benefiting women; educating about and celebrating "feminine" over "masculine" leadership styles; diversity trainings that focus primarily on improving conditions for women; and offering employees maternity (but not paternity or parental) leave. Although intuitively appealing as strategies for undercutting the masculinity contest, such organizational practices often have the unintended consequence of increasing men's resentment. From our perspective, this makes sense: policies and practices that seek explicitly to benefit women—logical as they may seem—very likely activate a competitive, protective mindset among high-status group members. Thus, organizations seeking to reduce ZST may benefit from careful framing of gender fair policies in ways that avoid "celebrating the feminine" and instead support *all* workers. Even subtle changes in policy wordings—such as replacing "maternity leave" with "parental leave"—can send the message that organizations recognize and respect all of their employees' family obligations, regardless of employee gender.

A recent case in point is found in cultural conversations about sexual assault, such as those inspired by the #MeToo movement. This movement seeks to create a space for women to share their all-too-common sexual assault experiences, and its power is felt in the ousting of numerous high-status male perpetrators from their positions of privilege. Energized by the #MeToo movement, organizations can adopt stricter and more effective policies against sex-based workplace harassment. However, men are victims of sexual assault and sex-based workplace harassment as well, although their experiences may often go unlabeled because they do not fit the common "male-harasser/female-victim" schema (Berdahl, 2007). Thus, organizations responding to the #MeToo movement with policy changes should educate employees about the various forms that sex-based harassment can take, and avoid language that casts women as the sole targets, and men as the sole perpetrators, of such harassment. As our findings suggest, this language can inadvertently foster us/them, zero-sum mindsets that lie at the roots of backlash to social change.

Second, organizations can defuse the likelihood of ZST by promoting powerful "win-win" messages that highlight the ways in which men's and women's gains are intertwined. In direct contrast to ZST, the win–win approach focuses on how men gain when women are more equal. As one vivid example of the win–win effect, both women and men win more Olympic medals in countries that are higher in gender equality (Berdahl, Uhlmann, & Bai, 2015). This suggests that gender equality at the structural level can foster the conditions that allow talented individuals to reach peak performance—a message that will likely hold appeal for ambitious employees who seek to excel. Another example of the win–win effect is found in research on the benefits of diversity. Specifically, organizations that have

more gender diversity also reap a number of concrete rewards including improved decision-making and innovation (Galinsky et al., 2015). Thus, messages or policies that emphasize win–win outcomes may serve as effective counters to ZST. Organizations wishing to reduce zero-sum mindsets may therefore build awareness of win-win outcomes through communications, public service announcements, and educational campaigns that offer concrete evidence of the win–win effect. Such practices may even have benefits that extend beyond improving gender equity: By purposefully promoting win–win mindsets, organizations may focus attention away from intergroup boundaries altogether, thereby developing cultures that are more welcoming of diversity in general.

Appendix

System Threat Condition

Women May Win the War in the Battle of the Sexes

At the beginning of the last century, inequalities between men and women were taken for granted. Men automatically occupied high-status skilled positions in the workforce and most jobs required women to resign once they were married. At the beginning of this century, many Americans probably considered gender inequality to be a thing of the past. Have things really changed that much?

According to a recent report, the answer is yes. Statistics compiled for the United Nations report titled The World's Women 2014 show that on many measures, women are catching up to their male counterparts. In the areas of employment, salary, education, politics, the courtroom, and at home, women continue to increase in status and power relative to men. Between 1960 and 2013, the gender gap in wages decreased by 18%, and women's political representation continues to increase. Many men and women now say that they would prefer a female boss to a male boss, and women are now entering and graduating college at higher rates than men. There is no question that women are gaining power, and will continue to do so.

Because of the significant gains made by women over the years, it seems that they may ultimately win the war in the battle of the sexes.

System Stability Condition

Women Still Losing the War in the Battle of the Sexes

At the beginning of the last century, inequalities between men and women were taken for granted. Men automatically occupied high-status skilled positions in the workforce and most jobs required women to resign once they were married.

At the beginning of this century, many Americans would consider inequality to be a thing of the past. Have things really changed that much?

According to a recent report, the answer is a resounding no. Statistics compiled for the United Nations report titled The World's Women 2014 show that on many measures, women's inequality remains as real as it was 100 years ago. In the areas of employment, salary, education, politics, the courtroom, and at home, women continue to lag behind men. Men still earn 22% more than women do for the same job and women hold only 14.3% of corporate leadership positions. Regardless of employment, age, number of children, and marital status, women still spend significantly more hours on housework than their male counterparts. There is no question that men are maintaining power, and will continue to do so.

Despite the significant gains made by women over the years, it seems that they may be still losing the war in the battle of the sexes.

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