Creativity from Constraint? How the Political Correctness Norm Influences Creativity in Mixed-sex Work Groups

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Abstract

As work organizations become increasingly gender diverse, existing theoretical models have failed to explain why such diversity can have a negative impact on idea generation. Using evidence from two group experiments, this paper tests theory on the effects of imposing a political correctness (PC) norm, one that sets clear expectations for how men and women should interact, on reducing interaction uncertainty and boosting creativity in mixed-sex groups. Our research shows that men and women both experience uncertainty when asked to generate ideas as members of a mixed-sex work group: men because they may fear offending the women in the group and women because they may fear having their ideas devalued or rejected. Most group creativity research begins with the assumption that creativity is unleashed by removing normative constraints, but our results show that the PC norm promotes rather than suppresses the free expression of ideas by reducing the uncertainty experienced by both sexes in mixed-sex work groups and signaling that the group is predictable enough to risk sharing more—and more-novel—ideas. Our results demonstrate that the PC norm, which is often maligned as a threat to free speech, may play an important role in promoting gender parity at work by allowing demographically heterogeneous work groups to more freely exchange creative ideas.

Keywords: creativity, work groups, uncertainty, group gender composition, political correctness norm

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Because creativity is essential to innovation and growth, organizations strive to capitalize on their work groups' creative potential (Shalley and Zhou, 2008). A vibrant stream of organizational research has emerged identifying how various attributes of the social context promote creativity (e.g., George, 2007; Zhou and Hoever, 2014). Eliciting creative ideas, particularly within groups, is difficult because such ideas challenge the status quo and are interpersonally risky and controversial (Amabile et al., 2005). Faced with the prospect of being rejected, people often withhold their most creative ideas from the group and instead suggest more conventional ideas that will be readily accepted and less disruptive (Goncalo and Staw, 2006). Accordingly, most group creativity research is premised on the straightforward assumption that creative ideas are more likely to emerge when people feel liberated to defy convention and state their authentic and unfiltered point of view (Forster et al., 2005; Jetten and Hornsey, 2011). The theoretical logic is that, rather than being burdened by determining which thoughts can be openly expressed and which should be withheld to avoid offense, people should confidently advance their ideas, even if doing so incites controversy (e.g., Sutton, 2002).

This prevailing approach to fostering creativity may be losing relevance, however. As organizations become increasingly diverse, particularly with regard to gender—a shift so dramatic that women now outnumber men for the first time in U.S. labor history (Mulligan, 2010; Ely, Ibarra, and Kolb, 2011)—interactions that are unconstrained by norms carry with them a high risk for offense. Men in mixed-sex work contexts may worry about being too overbearing and saying something that offends women, while women may worry about being viewed as meek and incompetent (e.g., Ridgeway and Correll, 2004). Moreover, the behaviors associated with being respectful toward members of the other sex remain ambiguous, and the sheer variety of options for how to interact generates significant uncertainty among members of mixed-sex work groups (e.g., Tannen, 2001; van Knippenberg, Haslam, and Platow, 2007). Such uncertainty is problematic because it may lead people to go along with ideas that others have suggested instead of introducing new or controversial ideas and, as a result, may dampen the group's creative output (e.g., Phillips et al., 2004).

According to most diversity theories, mixed-sex groups have access to a wider range of perspectives and information than same-sex groups and, as such, should perform better on tasks that demand creativity (e.g., Hoffman and Maier, 1961; Ely and Thomas, 2001; van Knippenberg, Haslam, and Platow, 2007). Yet a number of studies have found either no relationship or a negative relationship between a work group's gender diversity and creativity-relevant outcomes. For example, gender diversity did not stimulate the kind of task-related conflict that often boosts group creativity (Pelled, Eisenhardt, and Xin, 1999), it had no impact on the quality of ideas generated during a brainstorming session, and it actually reduced the quantity of ideas generated by brainstorming groups (Cady and Valentine, 1999), as well as performance on tasks requiring creativity (Shin et al., 2012).

Mixed-sex work groups may fail to capitalize on their creative potential because members' willingness to express novel ideas is inhibited by the uncertainty that arises in interactions between men and women (e.g., Plant and Devine, 2003). According to uncertainty reduction theory, when people meet, they are primarily concerned with increasing the predictability of their partners' and their own behavior in the interaction (Berger and Calabrese, 1975).

Uncertainty refers to a person's subjective sense of the number of alternative predictions available when thinking about a partner's past or future behavior (Bradac, 2001). Mixed-sex platonic relationships (non-romantic and non-sexual), common in work settings, are complex, and research consistently shows that greater uncertainty exists within them than in same-sex groups (e.g., Berdahl, 2007). The earliest research showed, for example, that women use more linguistic categories connoting uncertainty when interacting in mixed-sex groups than in same-sex groups (Key, 1975; McMillian et al., 1977). And even though some amount of interpersonal uncertainty is present in all relationships, cross-sex platonic relationships involve more uncertainty arising specifically from those sex differences than do other relationships, which is manifested through topic avoidance, inhibition, and less disclosure (Hacker, 1981; Afifi and Burgoon, 1998).

One source of uncertainty in mixed-sex interactions at work may stem from the normative pressure to avoid words or deeds that might appear sexist, a norm that is in force in most professional settings (e.g., Tougas et al., 1995). Although the norm to avoid sexist behavior is clear, figuring out which behaviors or statements constitute sexism is more difficult (Brant, Mynatt, and Doherty, 1999). Uncertainty over how and when to adhere to the norm to avoid sexism may cause men and women to overcorrect in ways that inhibit the expression of creative ideas. Men, who have typically been the dominant group in the U.S. workforce, are likely to worry about looking sexist because they fear social disapproval and legal repercussions given the long and increasingly salient history of overt sexism at work (e.g., Wharton and Baron, 1987; Burgess and Borgida, 1999). As a result, men may be wary of sharing ideas that female colleagues may find even slightly offensive (e.g., Klonis, Plant, and Devine, 2005). If it is difficult to anticipate exactly what kinds of statements might trigger offense, the safest approach may be to withhold all novel ideas in favor of more conservative ones; for example, ideas that closely follow ideas that have already been suggested are less novel but far less likely to be misunderstood or inadvertently perceived as offensive (Mueller, Melwani, and Goncalo, 2012). Women may also be uncertain about how their words and actions are evaluated in mixed-sex groups. But compared with their male colleagues, women may be more concerned about whether their ideas will be accepted or rejected by the group, or even seriously considered. Research on gender stereotypes indicates that, except in situations that obviously favor female expertise, women are perceived to be less knowledgeable (Chatman et al., 2008) and are explicitly expected to be less capable in work settings (e.g., Joshi, Liao, and Jackson, 2006). Further, women's performance is debilitated on cognitive tasks partly because of the belief that these tasks are more commonly or historically the purview of men (e.g., Ben-Zeev, Fein, and Inzlicht, 2005). Women's uncertainty about being perceived as stereotypically meek or incompetent causes them to speak more tentatively and less often, to be interrupted more frequently, and to be less influential than their male counterparts in mixed-sex groups (e.g., Valian, 1999). This uncertainty may cause women in mixed-sex groups to endorse existing solutions rather than introduce novel ideas in group discussions (e.g., Phillips et al., 2004).

Because of the uncertainty they experience in attempting to avoid confirming negative sex role stereotypes, both men and women may share fewer novel ideas in work groups, with men withholding their ideas to avoid appearing

offensive and women to avoid being judged as incompetent. Without clearly defined social scripts for behavior (Avery et al., 2009), members of mixed-sex groups are likely to generate fewer creative ideas than are those in same-sex groups, who are more comfortable taking risks and expressing new ideas that may be criticized. Taken together, ample support exists for the baseline expectation that, even if the substance or source of uncertainty varies for men and women, both are likely to experience greater uncertainty in mixed-sex than same-sex face-to-face groups, and this heightened uncertainty will reduce work group creativity. An important question, then, is what contextual factors might reduce the high levels of uncertainty in mixed-sex work groups? We focus on the political correctness (PC) norm because it sets relevant expectations for appropriate behavior and uniquely highlights the social sanctions that result from failing to comply with the expectation to avoid language and behavior that may offend women and other underrepresented minorities (Lakoff, 2001). We depart from the prevailing theory of group creativity to develop a perspective in which creativity in mixed-sex groups emerges, not by removing behavioral constraints but by imposing them. Setting a norm that both clarifies expectations for appropriate behavior and makes salient the social sanctions that result from using sexist language may liberate creative expression by countering the uncertainty that arises in mixed-sex work groups (Lakoff, 2001; Talbot, 2008). This contention is controversial because many have argued that imposing this political correctness norm might not just eliminate offensive behavior and language but will also cause people to filter out and withhold potentially valuable ideas and perspectives (e.g., Ravitch, 2003; Ely, Meyerson, and Davidson, 2006). This critical view of the PC norm reflects a deeply rooted theoretical assumption that normative constraints inevitably stifle creative expression, an assumption we challenge. We develop hypotheses about how the PC norm operates to reduce uncertainty in same- and mixed-sex work groups and test them in two group experiments.

IMPOSING THE PC NORM TO UNLEASH CREATIVITY IN MIXED-SEX WORK GROUPS

Reducing Uncertainty

A high level of uncertainty in mixed-sex groups is not inevitable. It is possible that the PC norm may actually facilitate rather than stifle the free expression of creative ideas in mixed-sex work groups by reducing uncertainty. The term ''PC'' is often invoked in public discourse when someone uses language that is construed as sexist and faces punishment for doing so (Lakoff, 2001). One well-known example was the reaction to then–Harvard University President Larry Summers' speech in which he articulated the hypothesis that women are underrepresented in the elite levels of science and engineering because of sex differences in innate ability. Many reacted negatively to his comments; a majority of the Harvard faculty voted that they had no confidence in him, and Summers resigned soon thereafter (Berman, 2013). Others supported Summers, however, and used the PC critique to explain the broader reaction. *Washington Post* commentator Ruth Marcus (2008) wrote, ''. . . he probably had a legitimate point and the continuing uproar says more about the triumph of political correctness than about Summers' supposed sexism,'' while Harvard

Law School Professor Alan Dershowitz (2006) wrote an editorial opposing Summers' resignation as a ''coup d'etat . . . by [the] political correctness cops of the hard left.''

These exchanges are revealing because they demonstrate the unique relevance of the PC norm for mixed-sex work groups, particularly when compared with politeness and sensitivity, two alternative norms that are often invoked in work groups (Chatman et al., 2012; Williams and Polman, 2015). Being polite and conveying warmth and sensitivity are typically valued in groups, regardless of their gender composition (Cuddy, Fiske, and Glick, 2008). But politeness and sensitivity do not directly address the uncertainty members may feel as a result of being part of a mixed-sex group and the possibility of sexist behavior arising, and so these norms are unlikely to affect uncertainty in mixed-sex groups. More importantly, the PC norm is distinct from sensitivity and politeness because it highlights the social sanctions that will result from enacting negative sex-role stereotypes about which members are already apprehensive; it makes salient the social sanctions such as embarrassment, social rejection, or even the loss of employment that might result from noncompliance—consequences that are unlikely to be associated with merely being impolite, cold, or insensitive.

The PC norm's distinctive characteristics make it particularly potent in reducing uncertainty in mixed-sex groups for two reasons. First, the PC norm makes salient the expectation to avoid sexist language and behavior. Work groups hold multiple norms simultaneously, but not all norms are equally salient at all times, and some may even conflict (Chatman et al., 1998). Groups engaging in creative activities will almost certainly experience conflicting norms given that brainstorming is based on principles like ''say whatever comes to mind'' but also ''do not criticize,'' making it even more difficult for members to determine which norm is most relevant to the task at hand (Sutton and Hargadon, 1996). And though the PC norm is the subject of much public discourse, its salience varies depending on the broader organizational, occupational, or even societal context in which mixed-sex groups are working. Organizations vary in how deliberate, comprehensive, and overt they are about their diversity efforts (Paluck and Green, 2009), and some may choose to promote general sensitivity norms rather than addressing diversity issues directly, reducing the salience of the norm to avoid sexist language (Andresson and Pearson, 1999). Thus the PC norm may reduce uncertainty by flagging a specific behavioral expectation that is relevant and useful in the context of a mixed-sex group.

Second, the PC norm is also potent because it includes sanctions for non-compliance, which is necessary for easing interaction, helping diverse groups accomplish their goals, and affecting members' behavior (e.g., O'Reilly, Caldwell, and Barnett, 1989; Kallgren, Reno, and Cialdini, 2000). Without a strong norm that is reinforced by social sanctions, greater behavioral variability will emerge (Chatman et al., 2014). People comply with anti-bias norms because of internal values or personality or because of contingencies in the external context (Crandall, Eshleman, and O'Brien, 2002). For example, some members of mixed-sex work groups may try to avoid being sexist for instrumental reasons, such as avoiding negative reactions and other consequences (Klonis, Plant, and Devine, 2005). People who are prejudiced must consciously exert effort to avoid gender-biased language, such as using the term ''woman'' rather than ''lady'' or ''girl,'' and find it more challenging when they are

distracted by competing demands (Cralley and Ruscher, 2005). Thus the PC norm can be levied in advance to reduce uncertainty by clarifying the sanctions that will result from violating the norm before any violations have occurred.

The PC norm may operate in mixed-sex work groups by reducing uncertainty for both men and women and emboldening them to suggest creative solutions. For men, a strong norm to avoid words and actions that may be offensive to women obviates the need to continuously reevaluate whether engaging in such efforts is appropriate, a task that may detract from the task of generating new solutions (Richeson and Trawalter, 2005). Similarly, an externally imposed norm to be politically correct helps women anticipate that men are more likely to avoid sexist words, making them less likely to feel uncertain about the value of their ideas (Spencer, Steele, and Quinn, 1999). By clarifying behavioral expectations, the PC norm becomes common knowledge (Lee and Pinker, 2010) and signals to each member that the group provides a context predictable enough for men and women alike to risk creative expression (Schwarz and Clore, 2003). The most underappreciated consequence of the PC norm is that it reduces uncertainty for both men and women regardless of the original source of that uncertainty. We therefore predict that the PC norm will boost creativity in mixed-sex groups by reducing the uncertainty that would otherwise emerge in interactions between men and women:

> **Hypothesis 1 (H1)**: A PC norm and a work group's sex composition will interact such that when the PC norm is salient, group creativity will be significantly higher in mixed-sex than in same-sex groups.

> **Hypothesis 2 (H2)**: Uncertainty reduction will mediate the relationship between a salient PC norm and group creativity in mixed-sex work groups such that the direct effect of the PC norm will weaken after uncertainty reduction levels are considered.

Overview of Studies

We conducted two group experiments to investigate how the PC norm influences work groups' uncertainty and creative idea expression. Study 1 compared how the PC norm affects idea expression in mixed-sex and same-sex groups. In Study 2, we investigated the mediating role of uncertainty by both manipulating and measuring it from videotapes of each group's interaction. We used experiments to test our hypotheses for two reasons. First, group experiments allowed us to measure idea generation in interacting groups without risking social desirability biases that could result from measuring individuals' attitudes about the PC norm. Social desirability biases are more likely in naturalistic settings because the PC norm is often invoked as a post-hoc attribution for poor performance. Second, the experimental context allowed us to identify the PC norm as a causal factor in explaining idea generation by ensuring that only the manipulated factors varied. This reduced our concern about alternative explanatory factors, most notably in-group tenure or potential differences in exposure to the PC norm. In our studies, group members were equivalently new to their work group and had similar exposure to the PC norm in that context.

GROUP STUDY 1: THE PC NORM AND CREATIVE EXPRESSION

Undergraduates (N = 264) from two U.S. universities were paid $20 for partici-
pating in this experiment. We randomly assigned participants to mixed- or
same-sex groups of three, resulting in a total of 86 groups (49 in the mixed-sex
and 37 in the same-sex condition). Participants were, on average, 21 years old
(s.d. = 2.61 years), and 53 percent were female. The racial composition of the
sample was 54 percent white, 25 percent Asian, 8 percent undeclared, 6 per-
cent African American, 5 percent Hispanic, and 2 percent Native American or
East Indian. The group's racial composition was not a significant covariate in
any analysis, so we did not examine race further. We used a 2 (PC norm vs.
control) by 2 (mixed-sex vs. same-sex group composition) factorial design. As
we describe below, participants in the experimental groups were first primed
with the PC norm and then asked to generate ideas as a group.

Establishing Construct Validity of the PC Norm

To establish the construct validity of the PC norm, we recruited 121 respon-
dents from Amazon's Mechanical Turk website. We randomly assigned respon-
dents to one of four conditions: (1) PC norm, (2) sensitivity norm, (3) politeness
norm, or (4) control. Participants read a brief scenario about an organization that
was attempting to manage interactions in mixed-sex work groups. To assist
this fictitious organization in its effort, participants were asked to list the five
best examples of how to be politically correct/sensitive/polite in mixed-sex
work groups, depending on the condition to which they were assigned. In the
control condition, participants simply listed five things about their day yester-
day. Next, respondents reported their perceptions of social sanctions for using
sexist language. They read the following scenario:

> Imagine that you are applying to work at an organization that states during the inter-
> view and in their employee handbook that ''One of our norms is to avoid sexist lan-
> guage.'' Please think about this norm while responding to the questions below and
> rate the extent to which the following statements accurately describe the norm.

Participants then answered six questions about the salience of social sanctions
for not complying with the norm, which were interspersed with ten other gen-
eric questions about the norm (e.g., ''This norm influences employees' beha-
vior'') to minimize demand effects. The items pertaining to social sanctions
were as follows: ''An individual who does not . . . (1) . . . comply with this norm
will probably be socially rejected, (2) . . . follow this norm will probably not last
long in this organization, (3) . . . follow this norm would immediately stand out
in a negative way, (4) . . . follow this norm would probably be reported to a
superior, and (5) . . . agree with this norm should probably leave, and (6)
Deviations from this norm would not be tolerated.'' We also wanted to rule out
the possibility that the PC norm simply made the organizational climate seem
more pleasant as opposed to uniquely highlighting social sanctions, so we
included two additional items: (1) ''People would keep from saying anything
that would upset another group member,'' and (2) ''People in this organization
try to be pleasant so that no one gets upset.'' Respondents rated each item on
a Likert-type scale from 1 to 7 with 1 representing ''strongly disagree'' and 7
representing ''strongly agree.'' The 6-item scale was reliable (alpha = .85), so

we averaged the items together. Using analysis of variance (ANOVA), we found that social sanctions were perceived as stronger when the norm to avoid sexist language was labeled political correctness (mean = 5.68; s.d. = 0.66) rather than sensitivity (mean = 4.99; s.d. = 0.68), t (58) = 4.01, $p < .01$, or politeness (mean = 4.87; s.d. = 1.18), t (58) = 3.28, $p < .01$. Respondents also believed that social sanctions would be stronger when the norm was labeled political correctness (mean = 5.68; s.d. = 0.66) compared with the control condition (mean = 4.58; s.d. = 1.01), t (59) = 5.04, $p < .05$. Finally, the sensitivity norm (mean = 4.99; s.d. = 0.68) and the control condition (mean = 4.58; s.d. = 1.01) did not differ, t (59) = 1.86, n.s., nor did the politeness norm (mean = 4.87; s.d. = 1.18) differ from the control condition (mean = 4.58; s.d. = 1.01), t (59) = 1.05, n.s. Thus priming respondents with the PC norm explicitly led them to interpret a subsequent scenario differently than when a politeness or sensitivity norm, or no norm, was invoked. The PC norm specifically increased the salience of sanctions that result from not complying with the norm to avoid sexist language, and it differed from politeness and sensitivity by highlighting sanctions for sexist language. The PC norm did not significantly affect the two generic items relating to pleasantness. Having differentiated the PC norm from related norms and established its construct validity, we turned next to our group studies testing our first hypothesis on the impact of the PC norm on idea expression and novelty in same-sex and mixed-sex groups.

Independent Variables

The PC norm. The experimenter told each work group, ''In this study, we are interested in gathering examples from college undergraduates of politically correct behavior on campus. As a group, please list examples of political correctness that you have either heard of or directly experienced on this campus for 10 minutes.'' In the control conditions, subjects began the experiment with the idea-generation task (described below) without being exposed to the PC norm. To check whether the manipulation made the PC norm salient, participants rated their level of agreement with three statements on the post-experiment survey, using a scale from 1 (very uncharacteristic) to 7 (very characteristic). These items were similar to the items we used in the construct validity test but more relevant to the face-to-face context of this study: (1) ''My group censored themselves while generating ideas,'' (2) ''My group worried about the words that they used to express themselves while working together,'' and (3) ''When suggesting a new idea I tried to avoid offending the other people in the group'' (α = .78.). We averaged individual responses at the group level (ICC = .58, $p < .01$).

Group sex composition. Participants were randomly assigned to either mixed-sex or same-sex conditions. Groups in the mixed-sex condition had two men and one woman or two women and one man, while groups in the same-sex condition consisted of three men or three women. To rule out alternative explanations for our results emanating from sex differences, we included a covariate for the percentage of males in the group (mean = 45 percent; s.d. = 35 percent). The covariate was not significant in any analysis so we combined the four conditions into two (mixed-sex and same-sex).

Dependent Variables

Group creativity. Groups were given 10 minutes to generate ideas for a new business to fill a space left vacant by a mismanaged restaurant. We chose a topic that was not controversial and not related to sex differences to assess how the PC norm would affect idea generation on tasks that a work group would typically encounter, rather than on a sex-related topic, which is a less common assignment in most work organizations. If the expectation to be politically correct is indeed constraining, then people might generally withhold ideas, thus reducing the overall number of ideas expressed. They might also withhold their most novel ideas to avoid controversy or appearing insensitive. Therefore our dependent variables consisted of two widely used measures of group creativity: *idea generation* and *idea novelty* (e.g., Goncalo and Staw, 2006). The sheer number of ideas generated is relevant because the more ideas a group generates, the more likely it is to identify a creative solution (Staw, 1990). We counted the total number of nonredundant ideas each group generated in the 10-minute period (mean = 35.02; s.d. = 17.36), and we coded for idea novelty, because creative ideas are distinguished from those that are merely practical by how much they diverge from existing solutions (Amabile et al., 2005). Two coders who were unaware of the experimental conditions and hypotheses independently rated the novelty of each idea on a scale of 1 (not at all novel) to 5 (extremely novel). They reached significant agreement on the novelty ratings (ICC = .73, $p < .01$), so we averaged their scores to form the novelty rating for each idea (mean = 1.71; s.d. =.26).

Results

Salience of the PC norm manipulation check. As expected, the PC norm was more salient to groups in the PC norm condition (mean = 4.66; s.d. = 1.15) than to groups in the control condition (mean = 4.11; s.d. = 1.08), $F (1, 81) = 4.78$, $p < .01$. There was no main effect of group sex composition, $F (1, 81) = 1.51$, n.s., nor was there a significant interaction between the PC norm and group sex composition, $F (1, 81) = 2.15$, n.s.

Creativity. To assess the number of ideas generated, we conducted a 2×2 ANOVA. Table 1 reports the results for all of the main outcome variables. Neither the PC norm condition, $F (1, 82) = 0.10$, n.s., nor the group's sex composition had a main effect on the number of ideas generated, $F (1, 82) = 0.43$, n.s. As predicted in hypothesis 1, a significant interaction between PC condition and group composition emerged, $F (1, 82) = 22.45$, $p < .01$. We examined the data by group composition to understand the source of this interaction. Mixed-sex groups generated significantly more ideas in the PC norm condition (mean = 43.39; s.d. = 21.34) than in the control condition (mean = 28.03; s.d. = 12.55), $F (1, 47) = 10.12$, $p < .01$. In contrast, and as expected, same-sex groups generated significantly fewer ideas in the PC norm condition (mean = 29.23; s.d. = 12.22) than in the control condition (mean = 46.75; s.d. = 17.30), $F (1, 35) = 13.04$, $p < .01$. Then we examined the data by PC condition. Among control groups, mixed-sex groups generated significantly fewer ideas (mean = 28.03; s.d. = 12.55) than did same-sex groups (mean = 46.75; s.d. =

Table 1. Group Study 1: Analysis of Variance for Main Outcome Variables (N = 86)

Source	Idea Expression			Idea Novelty		
	d.f.	F	Observed power	d.f.	F	Observed power
Main effects						
Political correctness (PC)	1	0.10	0.06	1	5.71•	0.66
Sex composition (SC)	1	0.43	0.10	1	3.12	0.42
Interaction effects						
PC × SC	1	22.45••	1.00	1	4.84•	0.59
Error	82			82		
Model R^2	0.22			0.14		

• $p < .05$, •• $p < .01$; two-tailed tests.

Figure 1. Political correctness and idea generation.
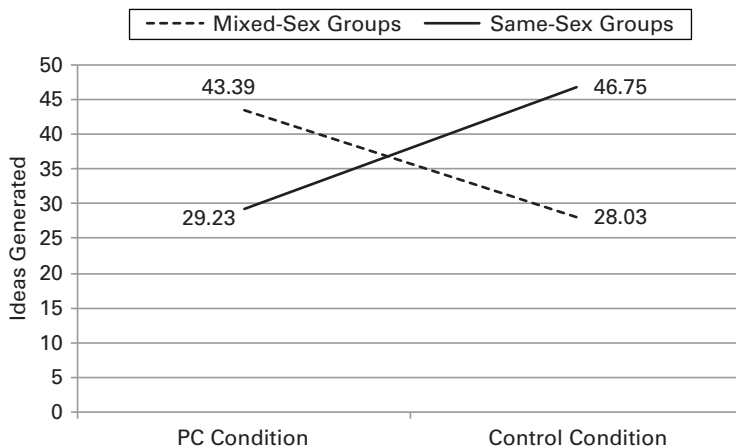
17.30), F (1, 45) = 18.06, $p < .01$. In the PC norm condition, mixed-sex groups (mean = 43.39; s.d. = 21.34) performed as well as same-sex groups in the control condition (mean = 46.75; s.d. = 17.30), F (1, 30) = .24, n.s. As figure 1 shows, taken together, this pattern of findings supports hypothesis 1 for the number of ideas generated.

Our analysis of idea novelty revealed the same pattern. A 2 × 2 ANOVA showed a significant main effect of PC norm condition, F (1, 82) = 5.71, $p < .05$, and a marginally significant main effect of the groups' sex composition, F (1, 82) = 3.12, $p < .10$. Again, as predicted in hypothesis 1, a significant interaction emerged between the PC norm condition and the group's sex composition, F (1, 82) = 4.84, $p < .05$. Planned contrasts showed that mixed-sex groups generated significantly more novel ideas in the PC norm condition (mean = 1.89; s.d. = 0.27) than in the control condition (mean = 1.64; s.d. = 0.31), F (1, 47) = 8.10, $p < .01$. Among groups in the PC norm condition, mixed-sex groups generated significantly more novel ideas (mean = 1.89; s.d. = .27) than did same-sex groups (mean = 1.68; s.d. = .18), F (1, 37) = 8.68, $p < .01$. Overall, mixed-sex groups in the PC norm condition generated ideas

that were more novel (mean = 1.89; s.d. = .27) than were those generated by groups in the other three conditions (mean = 1.66; s.d. = .23), F (1, 84) = 13.27, $p < .01$, again supporting hypothesis 1 for idea novelty.

Additional Analyses

Additional control conditions. We examined two additional control conditions to rule out alternative explanations for our key finding that the PC norm boosts idea expression more in mixed-sex than same-sex groups. The additional control data were collected in a subsequent semester from the same subject pool and using the same experimenter and laboratory. In the control condition in the first study, we simply asked groups to brainstorm without any prior discussion. We did so because even a discussion topic intended to be completely neutral might inadvertently trigger a conversation relevant to political correctness. Nevertheless, it is possible that the mixed-sex groups in the PC norm condition outperformed the groups in the control condition because they had the opportunity to engage in a brief practice discussion prior to the brainstorming session rather than because of the salience of the PC norm. To address this possibility, we asked 17 mixed-sex groups to spend 10 minutes listing examples of ''interpersonal behaviors'' that they had either heard or directly experienced on their campus. Following this initial discussion, they generated ideas for 10 minutes in response to the same brainstorming prompt we used in the main study. The results showed that mixed-sex groups in the PC norm condition generated significantly more ideas (mean = 43.39; s.d. = 21.33) than did the mixed-sex groups in the interpersonal control condition (mean = 32.24; s.d. = 6.87), F (1, 33) = 4.23, $p < .05$. An analysis of idea novelty yielded identical results. This suggests that our findings from Study 1 are not simply due to groups having more time to interact as a group.

A second alternative was that simply having a salient norm could lead mixed-sex groups to perform as well as same-sex groups. In other words, the PC norm might not uniquely affect group performance. To test this possibility, we varied the type of norm present by comparing the performance of mixed-sex groups exposed to a salient PC or a salient politeness norm. Eighteen mixed-sex groups were first asked to spend 10 minutes listing examples of ''polite behavior'' that they had either heard or witnessed on their campus. Following this discussion, they generated ideas for 10 minutes in response to the identical brainstorming prompt. A planned contrast showed that mixed-sex groups in the PC norm condition generated significantly more ideas (mean = 43.39; s.d. = 21.33) than did the mixed-sex groups in the politeness control condition (mean = 31.53; s.d. = 8.72), F (1, 33) = 4.53, $p < .05$. An analysis of idea novelty yielded identical results. These results provide additional evidence that the PC norm is distinct from politeness.

Additional analyses of sex composition. Though we did not expect the gender composition of the group (male or female) to influence idea generation, we conducted two additional analyses to test this assumption. First, we created a group gender composition variable (all male vs. all female vs. solo male vs. solo female) and conducted an ANOVA. We investigated whether sex

composition interacted with the PC condition to influence the number of ideas expressed during the brainstorming session. The results showed no main effect of sex composition, no main effect of PC condition (PC vs. baseline control), and a significant interaction between the two conditions, $F (1, 78) = 6.73$, $p < .01$. To understand the form of the interaction, we examined a 2 (solo male vs. solo female) $\times$ 2 (PC vs. baseline) ANOVA that showed a significant main effect of the PC condition variable, $F (1, 47) = 7.56$, $p < .01$ and no main effect of the composition variable, $F (1, 47) = .55$, n.s. There was also no interaction between the PC and composition variable, $F (1, 47) = .32$, n.s. Thus the PC norm boosted idea expression for mixed-sex groups regardless of whether the majority of members were female or male. Similarly, a 2 (all male vs. all female) $\times$ 2 (PC vs. baseline) ANOVA showed a significant main effect of the PC condition variable, $F (1, 31) = 11.68$, $p < .01$ and no main effect of the composition variable, $F (1, 31) = .66$, n.s. There was also no interaction between the PC norm and composition variable, $F (1, 31) = .15$, n.s., again showing that the PC norm reduced same-sex groups' creativity regardless of their gender composition.

This analysis corroborates our assumption that the PC norm benefits both men and women in mixed-sex groups. Results from Study 1 suggest that men and women viewed the PC norm as equivalently salient because there was no main effect of group sex composition. To the extent that men may feel more likely to be implicated in non-PC behavior and thus more responsive to the PC norm, it is interesting that women were also unburdened by the salience of the PC norm. The presence of the PC norm likely signaled that they were more likely to be fairly treated, and thus women were relieved from the potentially uncomfortable task of raising issues about gender inequality. This suggests that focusing on when expected differences do not emerge between men and women is often as important as identifying when such differences do emerge (Hyde, 2014), a point to which we return in our discussion.

Insights from Study 1

In support of hypothesis 1, the PC norm facilitated mixed-sex groups' expression of novel ideas, even raising their level of performance to match that of same-sex groups without the PC norm. Surprisingly, the PC norm impaired same-sex groups' performance, perhaps because it seemed irrelevant and inappropriate, potentially confusing group members or distracting them from the task. These results suggest that the PC norm provides contextually relevant guidance and that it can harm or improve group performance depending on the group's composition. Though we did not measure uncertainty directly, the PC norm may have boosted group creativity in Study 1 by reducing uncertainty, which is known to be higher in mixed-sex interactions. The PC manipulation in Study 1 was a relatively subtle prime, demonstrating the potency of political correctness for influencing behavior in groups. In the second experiment, we sought to demonstrate the robustness of this effect using a different manipulation—one in which the PC norm was overtly imposed ahead of time as a clear normative expectation. We also designed our second experiment to more precisely identify uncertainty reduction as an underlying mechanism. By focusing on mixed-sex groups and manipulating both the PC norm and the level of uncertainty independently, we could demonstrate the role that uncertainty

reduction plays in two ways. First, we could show how a salient PC norm provides a buffer that diminishes the stifling effects of uncertainty. Second, we could gather behavioral evidence of uncertainty reduction by coding videotapes of each group's interaction.

STUDY 2: THE PC NORM AND UNCERTAINTY REDUCTION

We paid 219 undergraduates from two U.S. universities $15 to participate in this study. We randomly assigned male and female participants to mixed-sex groups, resulting in a total of 73 three-member work groups. Participants were, on average, 21 years old (s.d. = 5.11), and 50.7 percent were female. The sample's racial composition was roughly the same as in Study 1, and analyses again revealed that neither a race covariate nor group racial composition influenced our results, so we did not examine race further.

We used a 2 (PC norm vs. control) by 2 (certain vs. uncertain) factorial design. After we assigned participants to groups and introduced the experimental manipulations, participants engaged in a group idea-generation task that was videotaped. The experiment concluded with a post-experiment survey. To rule out alternative explanations for our results emanating from sex differences between men and women, we included a covariate for the percentage of males in the group for all group-level analyses (mean = 50 percent; s.d. = 17 percent), but it was not significant in any analysis. We conducted additional analyses (described after the results section) to uncover differences based on sex and found none, so we combined both types of mixed-sex groups.

Independent Variables

Uncertainty manipulation. Before beginning the group task, the experimenter told participants the following to manipulate uncertainty and gave them five minutes to complete this exercise individually:[1]

> In this study we are interested in interactions between people of the opposite sex. Before we begin, please spend a few moments thinking about a time that you interacted with a member of the opposite sex and you felt very (uncertain/certain) about

---

[1] We pilot tested this manipulation in a separate sample to test its effectiveness, for two reasons. First, any measures of uncertainty taken at the end of the experiment would be influenced by the uncertainty-reducing effects of the PC norm manipulation. Second, we were concerned that participants' reports of whether they felt uncertain around members of the other sex might be subject to social desirability bias. Therefore we administered the uncertainty manipulation to 34 undergraduates (48 percent female) and asked them to complete a task in which they forecast the attitudes of a member of the other sex on several issues (e.g., ''When it comes to shopping for clothes, it's easy to just grab and go''). As part of this task, they rated how certain they were that their forecast was accurate (on a scale of 1–100). We expected that participants exposed to the uncertainty manipulation would report being less confident in their predictions about the other sex. As expected, participants in the uncertainty condition reported being significantly less certain of the accuracy of their forecast (mean = 76.29; s.d. = 11.32) than were participants in the certainty condition (mean = 84.47; s.d. = 11.31), $F (1, 32) = 4.44$, $p < .05$. As in all of our analyses, the results remained significant when controlling for sex, and the sex covariate was never significant. This pilot test provided some assurance that the uncertainty manipulation was effective.

how to behave. Please write in the spaces provided a few sentences about the three aspects of this interaction that made you feel most (uncertain/certain).

PC norm condition. In the second phase, the experimenter told participants in both conditions that they would interact as members of a mixed-sex group. In the PC norm condition, the experimenter also said the following to participants: ''Because people can sometimes be offended in these situations, you should try to be as politically correct as possible.'' Using the same survey items as in the first study ($\alpha = .71$), we found that the PC norm was more salient to groups in the PC norm condition (mean = 4.13; s.d. = 0.82) than to groups in the control condition (mean = 3.23; s.d. = 1.06), F (1, 69) = 14.86, $p < .01$. There was no main effect of uncertainty, F (1, 69) = 0.11, n.s., nor was there a significant interaction between PC norm condition and group composition, F (1, 73) = .42, n.s. After receiving these instructions, groups in the PC norm condition moved on to the same idea-generation task as in Study 1. In the control condition, groups moved directly from the uncertainty prime to the idea-generation task.

Dependent Variables

Group creativity. As in Study 1, we relied on two measures of group creativity. First, we counted the total number of ideas each group generated in the 10-minute idea-generation period (mean = 28.29; s.d. = 13.80). Second, two coders, who were not involved in coding data from Study 1 and were unaware of our hypotheses, independently rated each idea using the same scale as in Study 1. Their novelty ratings converged (ICC = .70, $p < .01$), so we averaged their scores (mean = 3.06; s.d. = 0.35).

Uncertainty reduction. Two coders, who had neither participated in prior coding on this project nor had any knowledge of our hypotheses, independently watched each group's brainstorming session on videotape and rated the interaction on a 5-point Likert-type scale, in which 5 = ''highly uncertain'' and 1 = ''highly certain.'' The coders were trained to focus on two key markers of uncertainty: (1) the use of hedges and (2) the effort to seek validation from fellow group members (Cialdini, 1994). Hedges are used as a ''shield'' against accusations of error and include words like ''about, around, maybe, think.'' Examples that emerged in this study included ''Maybe I'm wrong, but . . .,'' ''As far as I know . . .,'' and ''I am no expert but. . . .'' These statements contrast with highly certain statements that emerged, such as ''I like the idea of putting [subject's idea] in the empty space, you should write that down.'' Another way that people try to reduce their feelings of uncertainty is by seeking validation from the rest of the group (Rowland, 1995). The information gained from such exchanges strengthens the sense that the other person's behavior is predictable. A few examples that emerged in this study were ''That's a good idea, isn't it?'' and ''A café would be perfect there, what do you think?'' We instructed coders, ''Rate each group's interaction for an overall assessment of uncertainty. In other words, how uncertain do you think the members of each group were about how to behave appropriately toward each other during the brainstorming session?'' The coders' perceptions of uncertainty reached an

acceptable level of agreement (ICC = .70, $p < .01$), so we averaged their scores for the analyses of our hypothesis tests (mean = 3.34; s.d. = 1.45).

Results

Creativity. Table 2 reports the analysis of variance for all of the main outcome variables. We first examined the number of ideas generated. Our univariate ANOVA showed a main effect for uncertainty, $F(1, 69) = 4.48$, $p < .05$. Neither a main effect of the PC norm condition, $F(1, 69) = 1.04$, n.s., nor an interaction between conditions, $F(1, 69) = 0.66$, n.s., emerged for the number of ideas generated. Planned contrasts among groups assigned to the PC norm condition showed no difference between groups in the uncertainty condition (mean = 27.75; s.d. = 14.41) and those in the certainty condition (mean = 31.89; s.d. = 14.76), $F(1, 37) = 0.79$, n.s., on the number of ideas generated. In contrast, as shown in figure 2, among groups that did not receive instructions to be politically correct, groups in the uncertainty condition expressed significantly fewer ideas (mean = 21.94; s.d. = 11.06) than groups in the certainty condition (mean = 31.24; s.d. = 13.23), $F(1, 37) = 4.94$, $p < .05$, providing support for hypothesis 2.

In examining idea novelty, a univariate ANOVA showed no main effect of the PC norm condition, $F(1, 69) = .01$, n.s., a significant main effect of the uncertainty condition, $F(1, 69) = 5.91$, $p < .05$, and no significant interaction between conditions, $F(1, 69) = 1.81$, n.s., on idea novelty. Again, we conducted planned contrasts. As expected, among groups assigned to the PC condition, no differences in idea novelty emerged between groups assigned to the uncertainty condition (mean = 3.02; s.d. = 0.36) and those assigned to the certainty condition (mean = 3.11; s.d. = 0.34), $F(1, 37) = 0.59$, n.s. In contrast, among groups that did not receive instructions to be politically correct, groups in the uncertainty condition expressed ideas that were significantly less novel (mean = 2.90; s.d. = 0.37) than those generated by groups that were in the certainty condition (mean = 3.20; s.d. = 0.27), $F(1, 37) = 7.34$, $p < .01$. Taken together, these results suggest that experiencing uncertainty stifles mixed-sex groups' creativity and that a salient PC norm buffers against these negative effects.

Table 2. Group Study 2: Analysis of Variance for Main Outcome Variables (N = 73)

Source	Idea Expression			Idea Novelty			Behavioral Markers of Uncertainty		
	d.f.	F	Observed power	d.f.	F	Observed power	d.f.	F	Observed power
Main effects									
PC	1	1.04	0.17	1	0.01	0.05	1	11.82••	0.92
Uncertainty	1	4.48•	0.55	1	5.91•	0.67	1	8.23••	0.81
Interaction effects									
PC × Uncertainty	1	0.66	0.13	1	1.81	0.26	1	4.17•	0.52
Error	69			69			69		
Model R^2	0.08			0.10			0.25		

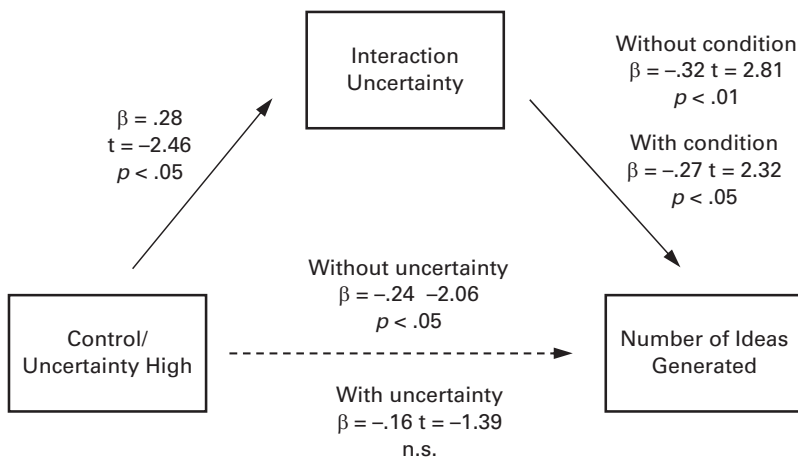• $p < .05$, •• $p < .01$; two-tailed tests.

Figure 2. Political correctness, uncertainty, and idea generation.
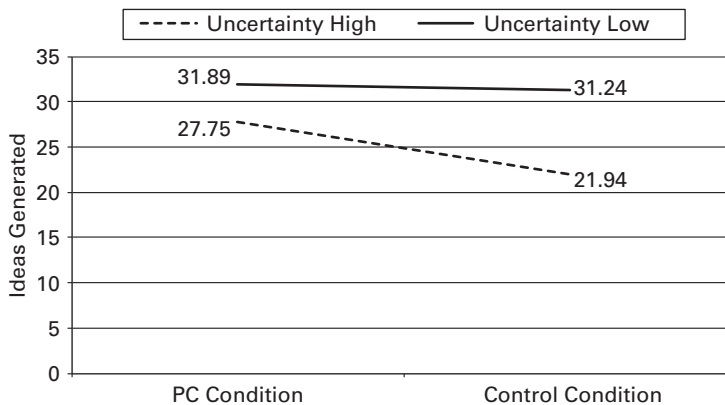
Uncertainty reduction. We measured uncertainty reduction from video-tapes of the groups' interaction to verify that the PC norm reduced uncertainty. A univariate ANOVA showed a significant main effect of the PC norm condition, $F(1, 69) = 11.82$, $p < .01$, a significant main effect of the uncertainty condition, $F(1, 69) = 8.23$, $p < .01$, and a significant interaction between conditions, $F(1, 69) = 4.17$, $p < .05$, on coders' ratings of behavioral uncertainty. Groups in the control condition were rated as more uncertain (mean = 3.21; s.d. = 1.45) than were groups in the PC norm condition (mean = 2.18; s.d. = 1.27). Again, groups in the uncertainty condition were rated as more uncertain (mean = 3.05; s.d. = 1.52) than were groups that received the certainty prime (mean = 2.25; s.d. = 1.25). We used planned contrasts to test our prediction that a salient PC norm would buffer against the experience of uncertainty during the group idea-generation task. As expected, among groups in the PC norm condition, there was no difference in rated uncertainty between groups in the uncertainty condition (mean = 2.30; s.d. = 1.38) and groups in the certainty condition (mean = 2.05; s.d. = 1.18), $F(1, 37) = 0.36$, n.s. In contrast, among groups that were not instructed to be politically correct, groups that received the uncertainty prime were rated significantly more uncertain (mean = 3.94; s.d. = 1.20) than were groups that received the certainty prime (mean = 2.47; s.d. = 1.33), $F(1, 32) = 11.49$, $p < .01$.

Mediation analysis. We conducted mediation analyses (Baron and Kenny, 1986) to examine the psychological impact of reducing uncertainty by imposing the PC norm. We coded the independent variable ''1'' for groups in the condition in which uncertainty was high but there was no instruction to be politically correct and ''0'' for the other three conditions. For idea generation, first we found that the control/uncertainty condition (independent variable) was positively related to the videotaped rating of uncertainty (mediator), $\beta = .28$, $p < .05$. Second, the control/uncertainty condition (independent variable) was negatively related to the number of ideas generated (dependent variable), $\beta = -.24$, $p < .05$. Third, the videotaped measure of uncertainty (mediator) was negatively related to the number of ideas generated (dependent variable), $\beta = -.32$, $p < .01$. Finally, when both the independent variable and uncertainty (mediator) were entered into the equation simultaneously, the independent variable
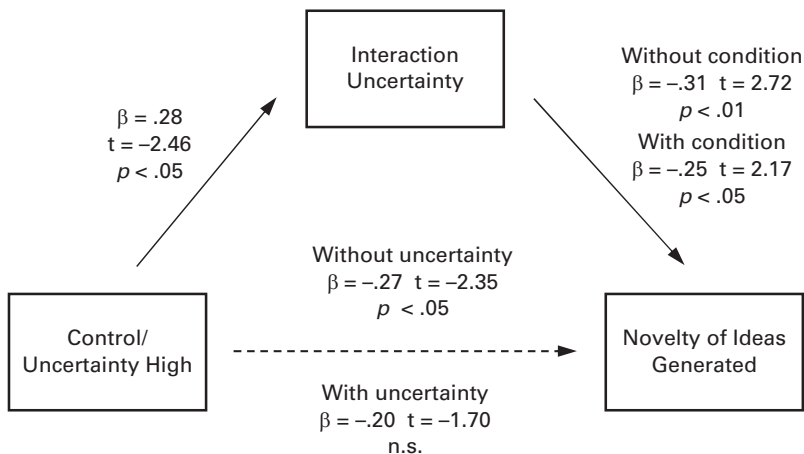
was not significant ($\beta = -.16$, n.s.), and uncertainty remained significant ($\beta = -.27$, $p < .05$). As shown in figure 3a, the Sobel test confirmed that uncertainty fully mediated the relationship between salience of the PC norm and number of ideas generated, supporting hypothesis 2. Figure 3b shows that our mediation analysis examining idea novelty followed exactly the same pattern, and a Sobel's test confirmed that uncertainty fully mediated the relationship between the salience of the PC norm and the novelty of ideas the group generated, further supporting hypothesis 2.

Figure 3a. Main and mediating effects of condition, uncertainty (videotape data), and idea expression.*

Interaction Uncertainty

$\beta = .28$
$t = -2.46$
$p < .05$

Without condition
$\beta = -.32$ $t = 2.81$
$p < .01$

With condition
$\beta = -.27$ $t = 2.32$
$p < .05$

Control/ Uncertainty High

Without uncertainty
$\beta = -.24$ -2.06
$p < .05$

With uncertainty
$\beta = -.16$ $t = -1.39$
n.s.

Number of Ideas Generated

* Dotted arrow indicates that a relationship fell below significance in the full model (e.g., that there is full mediation); $Z = -1.98$, $p < .05$.

Figure 3b. Main and mediating effects of condition, uncertainty (videotape data), and idea novelty.*

Interaction Uncertainty

$\beta = .28$
$t = -2.46$
$p < .05$

Without condition
$\beta = -.31$ $t = 2.72$
$p < .01$

With condition
$\beta = -.25$ $t = 2.17$
$p < .05$

Control/ Uncertainty High

Without uncertainty
$\beta = -.27$ $t = -2.35$
$p < .05$

With uncertainty
$\beta = -.20$ $t = -1.70$
n.s.

Novelty of Ideas Generated

* Dotted arrow indicates that a relationship fell below significance in the full model (e.g., that there is full mediation); $Z = -2.32$, $p < .05$.

Additional Analyses

Without the PC norm, mixed-sex groups generated significantly fewer ideas when members felt higher uncertainty than when they felt lower uncertainty. To rule out the possibility that the male-dominated mixed-sex groups produced this result, we examined the baseline condition (no PC norm) and ran a 2 (uncertainty high vs. uncertainty low) $\times$ 2 (solo male vs. solo female) ANOVA. The results showed a significant main effect of uncertainty condition such that mixed-sex groups without the PC norm generated significantly fewer ideas when uncertainty was high (mean = 21.94; s.d. = 11.06) than when it was low (mean = 31.23; s.d. = 13.23), $F_{(1, 30)} = 4.89$, $p < .05$. There was no main effect of solo condition, $F_{(1, 30)} = 1.02$, n.s., nor was there an interaction between the uncertainty condition and the solo condition, $F_{(1, 30)} = .07$, n.s. Confirming the additional analyses conducted in Study 1, the results suggest that men and women again responded similarly to the PC norm in mixed-sex groups.

Insights from Study 2

Study 2 results provided additional support for our prediction that the PC norm boosts mixed-sex groups' creativity. They also showed that the PC norm liberates idea exchange by reducing the uncertainty that men and women experience when they interact in face-to-face groups, regardless of whether the group is numerically dominated by men or women. Moreover, the liberating effects of the PC norm in mixed-sex groups held whether the manipulation was primed or imposed as a norm, suggesting that even overtly instructing groups to be politically correct can effectively liberate idea exchange rather than trigger reactance.

Although both men and women experienced uncertainty that was reduced by a salient PC norm, it is possible that, because of historical patterns of sexism at work (e.g., Ridgeway, 2002), they may feel uncertain in mixed-sex work groups for different reasons. We suggested that men's uncertainty in mixed-sex groups is more likely to arise from concerns about appearing sexist, while women's uncertainty is more likely to arise from concerns about appearing incompetent and having their ideas rejected. To explore our assumption that men and women derive uncertainty from different sources, we collected data from 62 undergraduates (mean = 20 years old; s.d. = 1.23; 51 percent female), who were told:

> We are interested in how groups interact to solve problems. The task will require you, as a group, to generate new business ideas to fill an empty space on campus that was left vacant by a mismanaged restaurant. Before we begin, we want to point out something important about the group with whom you are about to interact. Please note that you will be working in a group composed of both men and women. In other words, you have been assigned to a mixed-sex work group. To focus your attention before we move on to the group task, we would like you to answer a few questions in a short survey concerning your expectations about your group.

The survey included four Likert-type items—(1) ''My ideas will be criticized,'' (2) ''My ideas will be viewed as not useful,'' (3) ''I might offend someone,'' and (4) ''My ideas might be viewed as inappropriate''—that were completed on

a 7-point scale with 1 = strongly disagree and 7 = strongly agree. The results showed that women (mean = 4.45; s.d. = 1.46) worried significantly more than men (mean = 3.23; s.d. = 1.28) that their ideas might be criticized, $F (1, 60) = 12.36$, $p < .01$. Women (mean = 3.77; s.d. = 1.43) also worried more than men (mean = 3.06; s.d. = 1.24) that their ideas might not be useful, $F (1, 60) = 4.37$, $p < .05$. Conversely, men (mean = 3.68; s.d. = 1.35) worried significantly more than women (mean = 2.74; s.d. = 1.44) that they might offend someone, $F (1, 60) = 6.97$, $p < .05$. Men (mean = 3.74; s.d. = 1.51) also worried more than women (mean = 2.71; s.d. = 1.32) that their ideas might be viewed as inappropriate, $F (1, 60) = 8.24$, $p < .01$. After completing this initial survey, we asked participants to complete one more task:

> We are interested in your expectations about how various ideas will be received in your group. For each idea listed below, check whether you are likely to share or with-hold the idea during the group discussion. Then indicate how certain you are that this is the appropriate decision by writing a number from 1 (no confidence) to 100 (complete confidence). The brainstorming task is to generate ideas for a new business that could go into the space left vacant by a mismanaged restaurant.

We presented participants with a pre-generated list of 17 ideas that were common responses to this brainstorming topic in previous research (e.g., Goncalo and Staw, 2006). We assessed how uncertain participants felt about whether to share each idea by calculating the average uncertainty score across the 17 ideas listed. We found that though men reported being uncertain about different things prior to the interaction, their overall uncertainty (mean = 68.09; s.d. = 17.72) was nearly identical to women's (mean = 68.12; s.d. = 14.38), $F (1, 51) = .00$, n.s. These results are intriguing and consistent with our group-level findings because they suggest that though men and women may derive feelings of uncertainty from different sources, the PC norm may be a useful way to embolden both to share their most novel ideas.

GENERAL DISCUSSION

Existing group creativity research is premised on the assumption that normative constraints are necessarily stifling and that countering the powerful tendency to conform to existing solutions requires giving people wide latitude to deviate from shared expectations, even if doing so incites conflict and controversy (e.g., Jetten and Hornsey, 2011). We offer a theory suggesting that this rebellious and somewhat anarchistic approach to fostering creativity may be more suited to homogenous work groups because they begin with a stronger foundation of shared norms and expectations. Theoretical models of group creativity have failed to explain why gender diversity has a negative impact on idea exchange in part because they assume that varying perspectives are more likely to be shared when normative constraints are lifted. Fostering creativity in diverse work groups presents a different challenge, however, and theories of creativity must be reconsidered in this increasingly widespread context. We focused on the role of uncertainty in mixed-sex groups and derived the contrary prediction that creative ideas arise when normative constraints are imposed rather than removed.

By highlighting the social sanctions that might result from violating the norm to avoid sexist language, we found that the PC norm fundamentally alters interactions between men and women in face-to-face work groups. The PC norm clarifies and enforces the norm to avoid sexist language, which reduces otherwise high levels of uncertainty in mixed-sex groups and signals that the group is predictable enough to risk sharing not only more ideas but also ideas that are more novel. This differential effect depending on the group's sex composition suggests that people continue to be uncertain about how to enact gender parity in words and behavior when working together, even as numerical equality emerges in the workforce. In some sense, then, the paradoxical utility of the PC norm reflects the unfinished status of gender parity at work.

Theoretical Contributions

Creativity and group composition. This study provides new insights into how sex diversity affects group brainstorming, specifically how to capitalize on the creative potential of mixed-sex work groups. Our results highlight the contingent nature of idea generation and group composition. For example, greater care in the language used to communicate with dissimilar others might cause biases to be revealed, depolarize mixed-sex relations, and enhance group success (Roberson and Stevens, 2006). But it might not be necessary for organizations to promote the PC norm in homogenous groups or, to the extent that homogeneity is a proxy for cohesion, in groups that already have experience working together (e.g., Polzer, Milton, and Swann, 2002). Our findings suggest that leaders should consider a work group's sex composition when deciding how much to emphasize approaches to interacting with different others. More specifically, the PC norm should be encouraged in mixed-sex groups as a means of reducing potential conflict between members and stimulating idea generation, but perhaps other norms are more relevant in homogenous groups, particularly given our finding that the PC norm can inhibit their performance. The PC norm was a reasonable starting point for investigating how imposing norms affects creative output because it is viewed as a negative and restrictive norm, thus providing a conservative test of the theory. Future research might investigate other anti-bias norms, not only those that involve inhibition or avoidance of behaviors. For example, norms pertaining to openness, which satisfy nurturance needs, may enable members of different identity groups to decategorize different others and appreciate their individuated contributions (Chatman, 2010).

Our finding that uncertainty reduction boosts creativity also has broader implications for understanding the creative process in groups that may derive their feelings of uncertainty from sources other than demographic diversity. Uncertainty reduction may tie together and explain a host of interventions intended to stimulate group creativity. For example, the traditional brainstorming rules might not facilitate creative expression because of the specific advice they impart but because they provide guidelines that reduce feelings of uncertainty, which is why they work even when they are reversed (Nemeth et al., 2004). Accounting for the role of uncertainty may also resolve conflicting findings about the relative effectiveness of competitive versus cooperative norms in fostering group creativity (Nijstad and De Dreu, 2012). A contingent approach might be necessary, for example, because norms that promote competition

might be more effective when uncertainty is low and group members are already comfortable standing out and sharing their unique ideas with others (Goncalo and Kim, 2010).

  Group norms and composition. Our findings also have implications for research on norms and group composition. Research has suggested that norms can be parsed into strength and content dimensions and that both must be simultaneously considered to understand their impact on group creativity (Goncalo and Duguid, 2012; Chatman et al., 2014). Interestingly, we found that simply highlighting norms that generally smooth group processes, such as encouraging people to be polite or sensitive, was not sufficient to reduce uncertainty and boost creativity among mixed-sex group members. Instead of merely enhancing cohesion to facilitate communication in diverse groups, the strong or salient norm also needs to be relevant in content to addressing the group's unique compositional and task challenges. At the same time, providing overly specific guidance may not be useful either. While research on racial diversity shows that providing specific scripts, such as how to behave in a mixed-race interview (Avery et al., 2009), reduces members' anxiety, the PC norm was not as specific as a script. The consequences for violating the PC norm were easy for people to identify consistently, but the PC norm may have heuristic value in that it provides relevant but necessarily flexible guidelines for social interaction. Such flexible guidelines may be particularly useful in brainstorming groups that are, by design, unpredictable. Feelings of uncertainty are likely to be heightened in groups with the goal to be creative because they typically lack a formal status hierarchy that might ordinarily clarify roles and expectations. At design firm IDEO, for instance, status in brainstorming groups is based on who has the most creative ideas rather than a traditional hierarchy with assigned roles (Sutton and Hargadon, 1996). A clear hierarchy might ordinarily reduce status uncertainty in mixed-sex groups, but many brainstorming groups intentionally lack such a formal structure. The PC norm may boost performance most in brainstorming work groups because such groups are less structured than, for example, decision-making groups that typically have formal rules and procedures governing interactions and information exchange (Sommers, 2006). In addition, unlike with decision-making groups, in which an optimal solution is more likely to exist, the evaluation of creative ideas is subjective and unpredictable (Goncalo, Flynn, and Kim, 2010). Thus the PC norm may be particularly important for reducing uncertainty in highly unstructured groups.
  Future research should also consider other sources of uncertainty besides those arising from demographic diversity. For example, people who are dispositionally anxious might feel more uncertain in brainstorming groups or organizations attempting to instill a new focus on creativity when none has existed before (Leifer, O'Connor, and Rice, 2001). Stronger normative constraints may mitigate the anxiety stimulated by such traits and contextual factors (Camacho and Paulus, 1995). Evaluating ideas is also a highly uncertain process because evaluators claim to desire creative ideas but often reject them in favor of more practical solutions or suboptimal solutions advanced by people who are confident and charismatic (Goncalo, Flynn, and Kim, 2010; Mueller, Melwani, and

Goncalo, 2012). Stronger norms might level the playing field and embolden more timid individuals to share their ideas confidently.

  Gender diversity. The widespread effort to make employees more sensitive to their colleagues of the other sex is often justified on moral grounds, as well as on the presumed advantages of capitalizing on the full range of talent that exists within the labor pool (Mannix and Neale, 2005). Many are concerned, however, that interventions intended to help women may unfairly disadvantage men (Talbot, 2008). Our analyses revealed that, though men and women feel uncertain about different things when they work together, they are likely to experience an equivalent amount of uncertainty and are motivated to avoid appearing consistent with negative sex-role stereotypes. This equivalence in uncertainty is important because, regardless of the accuracy of their perceptions, men may resist progress on gender equity (Rudman and Phelan, 2008) and, as the historically powerful group at work, stand in the way of achieving gender equity (Magee and Galinsky, 2008). As women assume more powerful positions, men report they are increasingly experiencing sexism at work (Drexler, 2013). Given this challenge, the elegance of the PC norm is that it reduces uncertainty for both men and women, regardless of their different paths to uncertainty. Further, regardless of whether mixed-sex groups are dominated by men or women, a salient PC norm consistently boosts their ability to unleash more novel ideas. Thus the PC norm may act as an equitable intervention that precludes backlash because it reduces uncertainty for both men and women. And because the PC norm is typically externally imposed, it may make the stigma of sexism explicit to the entire group and reduce uncertainty for group members who know they should appear unprejudiced but are not sure how to do so.
  Finally, one broader implication of this research is the variegated nature of the gender differences and similarities we found. Men and women initially experience uncertainty for different reasons, but the PC norm reduced uncertainty and significantly boosted creativity for both. Future gender research might be more vigilant in identifying exactly when sex differences do and do not exist, a sentiment expressed by Hyde (2014: 20) who, after comprehensively reviewing research on gender differences, concluded, ''There are serious costs to an overemphasis on gender differences . . . and a gender similarity is as interesting and important as a gender difference.'' Such theoretical precision could also give rise to more customized interventions in work organizations.

Limitations and Future Directions

Three limitations in our approach present opportunities for future research. First, we observed groups working together on a task for a short time. Though we did this intentionally to control members' exposure to the PC norm in their groups, which would have been difficult in an intact work group, this approach constrains our ability to generalize these results to groups working in organizations over an extended period of time. Newly formed groups such as the ones we studied are increasingly relevant, however; employees are working in more groups and in more distributed groups, making it likely that they will encounter new groups more frequently in modern organizations (e.g., Hinds and

Mortensen, 2005). And task performance is most likely to suffer if the exchange of novel perspectives is curtailed in the early rather than the later phases of a project (Goncalo, Polman, and Maslach, 2010). Future research verifying our findings in organizational settings with intact groups would clarify how typical it is for same-sex and mixed-sex groups, respectively, to invoke the PC norm spontaneously, though it would also be important to identify explicitly the organization's broader emphasis on diversity and political correctness (Ely and Thomas, 2001).

Future research might also examine diverse groups' reliance on the PC norm over time. One possibility is that the PC norm is most useful toward the beginning of a diverse group's existence, when members are unfamiliar with one another and are highly uncertain about how to behave toward one another. Over time, however, as members begin to empathize with or take the perspective of dissimilar others, the PC norm eventually may become unnecessary (Galinsky et al., 2008). Further, the PC norm may evolve over time as members' attention to surface-level diversity, such as visually apparent differences, gives way to deep-level diversity, such as value differences (e.g., Harrison, Price, and Bell, 1998).

A second limitation is that we focused only on sex diversity. Because we found evidence for behavioral differences caused by the sex composition of a group, which many believe is much less socially charged than in the past (Bennett, Ellison, and Ball, 2010), our study might actually serve as a conservative test of the impact of the PC norm on group behavior. The PC norm could have similar and perhaps even stronger effects in groups characterized by other types of diversity, such as race differences, which can heighten uncertainty and trigger anxiety (Plant and Devine, 2003; Richeson and Trawalter, 2005).

A related limitation is the composition of our groups: they were small, and the mixed-sex groups were always gender-imbalanced. We anticipated that the additional complexity caused by balanced groups, such as a larger size (four members rather than three) and the possibility of subgroups, would make it harder to isolate the effects of the PC norm. Additionally, research has shown that solo men and women may not differ significantly from paired or balanced groups under certain circumstances, such as when the group is working on a sex-typed task that is aligned with the solo member's sex or a task that is not sex typed (e.g., Chatman et al., 2008). That said, our general expectation is that a gender-balanced configuration (two women, two men) would reduce individual uncertainty slightly due to the presence of a similar other but that uncertainty would still arise, not at the individual level but at the subgroup level. And regarding group size, being a solo member of a small group is likely less disconcerting than being a solo member of a larger group, so we would expect the PC norm to be potentially more helpful for minority group members in large groups. Future research should test these assumptions for differently composed groups, such as those with equal numbers of different members and larger groups.

A third potential limitation is that we examined the effects of the PC norm in the context of a brainstorming task that was unrelated to sex differences. We deliberately chose to examine how such differences influence behavior and performance when groups are working on typical tasks. Thus our findings are most applicable to organizational and occupational contexts in which mixed-sex groups are assigned tasks that are strategically relevant to their organization's

product and service goals, rather than politically charged issues surrounding sex differences or tasks that require the exchange of perspectives regarding issues of diversity, discrimination, and equality. It is possible that when tasks require groups to exchange perspectives on controversial diversity issues, the PC norm may hamper creativity and idea expression (e.g., Norton et al., 2006). Future research might usefully examine a broader set of tasks to see which are facilitated or constrained by the PC norm.

We began by noting that creativity research has assumed that fewer constraints liberate groups to generate creative ideas. Our theory and findings suggest, however, that this assumption does not extend to the most common type of groups working in organizations today, mixed-sex groups, or more broadly to any group working under conditions that foster feelings of uncertainty. We found that diverse groups may be more creative when adopting a highly constraining PC norm. That norm, however, is often invoked to criticize attempts to censor sexist language. A notable recent example is the response to the Harvard Business School's two-year effort to foster success among female students. Though the effort succeeded in dramatically reducing the grade gap between men and women, the university administration was accused of intrusive social engineering (Kantor, 2013). This example highlights the fact that the effort to be politically correct may have benefits that typically go unrecognized. Our results also suggest that, paradoxically, making the PC norm salient actually promotes idea generation in mixed-sex work groups. Although the label is often derogatory, the PC norm provides a normative foundation that politeness and sensitivity do not. Until the uncertainty caused by demographic differences can be overcome within diverse groups, the effort to be politically correct can be justified not merely on moral grounds but also by the practical and potentially profitable consequences of facilitating the exchange of creative ideas.

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