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Helena R. M. Radke & Amy Hanson

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# Women are derogated for expressing group-based anger which undermines collective action for gender equality

Helena R. M. Radke<sup>a</sup> and Amy Hanson<sup>b</sup>

<sup>a</sup>James Cook University; <sup>b</sup>University of Edinburgh

## ABSTRACT

We investigate whether exposure to a woman who expresses anger about gender inequality is negatively evaluated and undermines collective action for gender equality. Research suggests that women are derogated when they express anger because this emotion violates feminine social norms and communal gender roles. Across two studies (Study 1  $N = 227$ ; Study 2  $N = 254$ ), participants were exposed to a speech from a woman political candidate discussing gender inequality. Participants evaluated the candidate more negatively, and were less willing to engage in collective action with her when she expressed anger about gender inequality compared to no anger. We also examined whether this finding could be attenuated when the candidate expressed anger about gender inequality for communal reasons and found partial support. Our findings suggest that we need to tackle the narrow expectations of what it means to be a woman to facilitate collective action for greater gender equality.

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Previous research suggests that women who express anger (compared to those who do not) are evaluated more negatively because this emotion violates the feminine social norms and communal gender roles expected of women (Brescoll & Uhlmann, 2008; Heilman & Okimoto, 2007; Phelan et al., 2008; Rudman & Glick, 1999, 2001). As a result, people might distance themselves from a woman who expresses this emotion (H. J. Smith & Ortiz, 2002). But anger has a number of benefits (Lench et al., 2024) including as an antecedent of behaviors that benefit women such as collective action for gender equality (Van Zomeren et al., 2008, 2012). This type of anger on behalf of a social group in response to an injustice is referred to as group-based anger (Mackie et al., 2000; E. R. Smith, 1993). To our knowledge, however, previous research has not examined whether 1) women are derogated for expressing group-based anger about gender inequality and 2) this derogation undermines collective action for gender equality. This is despite previous theoretical work which has argued that people may be unwilling to engage in collective action for gender equality with a woman who expresses group-based anger, thereby compromising progress toward achieving this goal (Radke et al., 2016).

In this paper, we investigate whether exposure to a woman who expresses group-based anger about gender inequality is negatively evaluated and undermines collective action for greater gender equality. We also seek to identify whether this proposed effect is attenuated when a woman expresses group-based anger for communal reasons (i.e., on behalf of women and girls in their community) which more closely aligns with the stereotypical expectations of women. To do this, we exposed participants to a woman political candidate who identified gender inequality as one of her key campaign issues and either expressed group-based anger, group-based anger for communal reasons, or no anger when discussing this topic. We further explored whether participant gender (Study 1) and candidate race

**CONTACT** Helena R. M. Radke  [helena.radke@jcu.edu.au](mailto:helena.radke@jcu.edu.au)  School of Psychology, James Cook University, 1 James Cook Dr, Douglas, Townsville, QLD 4814, Australia

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(Study 2) affected the results. Participant evaluations of the candidate were examined with regards to perceptions that they are warm and competent (two core dimensions of the Stereotype Content Model which is supported by a large body of empirical work; S. T. Fiske, 2018; S. Fiske et al., 2002) and a complainer (in line with previous research e.g., Eliezer & Major, 2012). We also included willingness to take action to support the political candidate (e.g., voting for her, donating money to her campaign) as an additional outcome. Below we provide an overview of the feminine social norms and communal gender roles expected of women.

## **Feminine social norms and communal gender roles**

Throughout history, women have traditionally been expected to conform to feminine social norms (Mahalik et al., 2005) and embody communal gender roles (A. Eagly & Wood, 2012; Wood & Eagly, 2002). Feminine social norms refer to the rules and standards that are used to understand, guide, and constrain the social behavior of women (Cialdini & Trost, 1999; Mahalik et al., 2005). Mahalik et al. (2005) found that women are expected to be nice in relationships, show domesticity by maintaining a home, and care for children among other norms (see also Kling et al., 2017; Sánchez-López et al., 2009).

Social role theory provides a broader theoretical account of how these norms may have developed over time. According to Wood and Eagly (2002; see also A. Eagly & Wood, 2012), the traditional expectation that women should adhere to communal gender roles (such as mothers and wives) and men should conform to agentic gender roles (such as leaders) are the result of physical sex differences between males and females (i.e., the ability to bear children) which leads to the gendered division of labor (i.e., women being responsible for childcare). While meta-analytic work reveals that males and females are similar on most psychological variables (Hyde, 2005), and we live in a world which increasingly acknowledges the fluid and non-binary nature of gender (Diamond, 2020; Monro, 2019), women are still derogated for violating feminine social norms and communal gender roles especially when they express anger.

## **Nice girls don't get angry**

Previous research has shown that women are derogated and experience backlash when they violate feminine social norms and do not adhere to communal gender roles (Brescoll & Uhlmann, 2008; Heilman & Okimoto, 2007; Phelan et al., 2008; Rudman & Glick, 1999, 2001; see also role congruity theory A. H. Eagly & Karau, 2002). For example, agentic women are less likely to be hired by both men and women evaluators because they are perceived to be deficient in social skills despite being rated as competent and capable of leadership (Phelan et al., 2008). And both single (DePaulo & Morris, 2006) as well as women without children (Ashburn-Nardo, 2017) are stigmatized for not embodying the communal gender roles of being married and a mother.

The derogation of women who do not adhere to feminine social norms and communal gender roles is especially visible when women express anger. This is because anger violates expectations that women will be nice and nurturing (A. Eagly & Wood, 2012; Mahalik et al., 2005; Wood & Eagly, 2002), and is an emotion that is used to gain as well as maintain social status (Gaertig et al., 2019; Tiedens, 2001; Tiedens et al., 2000). Women who express anger are often perceived to have “lost control” (Chrisler, 2008), and are characterized as being crazy, overly emotional, unreasonable, and suffering from premenstrual tension (King et al., 2014; Thornton, 2013). These negative evaluations have very real consequences for women: Brescoll and Uhlmann (2008) found that both men and women evaluators perceived an angry woman compared to an angry man in the workplace to be less competent, allocated her a lower salary, and attributed her anger to internal causes such as being “out of control.”

However, previous research suggests that exposure to group-based anger that contains feminine social norms and communal gender roles has the potential to offset these negative evaluations (Haines

& Stroessner, 2019; Rosette & Tost, 2010). For example, Heilman and Okimoto (2007) found that women CEOs were evaluated less negatively when they were described as being caring and sensitive compared to when this communal information was not provided. While the primary aim of this research is to test whether exposure to a woman who expresses group-based anger undermines collective action for gender equality, to determine whether feminine social norms and communal gender roles contribute to this outcome we included an additional condition in which the candidate expressed group-based anger about gender inequality for communal reasons (i.e., on behalf of women and girls in her community). We refer to this type of anger as communal anger throughout the manuscript. If participants are less negative toward and more willing to engage in collective action with the candidate when she expresses communal anger compared to group-based anger, this suggests that violating feminine social norms and communal gender roles drives the derogation of women who express group-based anger. We now turn our attention to the role group-based anger plays as a predictor of collective action.

### Collective action and group-based anger

Collective action is generally defined as any behavior taken with the goal of improving the conditions of a group (Becker, 2012; Wright et al., 1990). From campaigning for women's rights to vote to the #MeToo protests, it is difficult to think of ways in which progress toward gender equality has occurred without collective action. Yet despite progress that has been made, gender equality has not yet been achieved (Organisation for Economic Co-operation and Development, 2023). Previous theoretical work (Radke et al., 2016) has proposed that women experience barriers to engaging in collective action for gender equality – based on the predictors identified by the Social Identity Model of Collective Action (SIMCA; Van Zomeren et al., 2008) – which might stymie progress toward achieving this goal.

According to SIMCA (Van Zomeren et al., 2008) the predictors of collective action include identification with the affected social group, perceiving the injustice that the affected social group experiences which facilitates group-based anger, and perceiving the efficacy of collective action. Most relevant to the current paper is the role group-based anger plays in facilitating collective action. Group-based anger is drawn from intergroup emotions theory (Mackie et al., 2000; E. R. Smith, 1993) and refers to collectively feeling angry about the unfair treatment of the affected social group (Van Zomeren et al., 2008, 2012). Radke et al. (2016) argue that women might be prevented from engaging in collective action for gender equality because they are expected to adhere to the feminine social norms and communal gender roles described earlier which do not align with expressing anger. Moreover, given that both men and women negatively evaluate a woman who expresses anger (Brescoll & Uhlmann, 2008), both genders might distance themselves from a woman who expresses group-based anger (H. J. Smith & Ortiz, 2002) despite this being an appropriate reaction to perceiving gender inequality and a necessary predictor of collective action to address this problem (Van Zomeren et al., 2008, 2012).

### The current research

The current research examines whether exposure to a woman who expresses group-based anger about gender inequality is negatively evaluated and undermines collective action for gender equality. Across two studies, we exposed participants to a woman political candidate who identified gender inequality as one of her key campaign issues and either expressed group-based anger, group-based anger for communal reasons, or no anger when discussing this topic. We then measured participants' perceptions of the candidate's warmth, competence, whether she was a complainer, willingness to engage in collective action for gender equality with her, and willingness to engage in action to support the candidate (e.g., voting for her, donating money to her campaign). We chose to examine evaluations of and actions with a woman political candidate for ecological validity (e.g., many candidates discuss these issues when seeking to be elected, people often engage in action to support political candidates

during an election), and as a rigorous test of the role feminine social norms and communal gender roles play in understanding our findings (because political leadership is an agentic gender role).

We predict that participants will have more negative evaluations of the candidate, be less willing to engage in collective action for gender equality with her, and be less willing to engage in action to support her campaign when she expresses group-based anger compared to no anger about gender inequality (Hypothesis 1), and group-based anger compared to communal anger (Hypothesis 2). We further explore whether differences emerge between the communal anger and no anger conditions for these outcomes.

Finally, we explore whether our findings are dependent on the participants' gender (Study 1), and when manipulating the candidate's race (whether she is White or Black; Study 2). While previous research has found no gender differences in evaluations of women who express anger (Brescoll & Uhlmann, 2008), women are more likely to engage in collective action for gender equality than men (Jackson et al., 1996; Radke et al., 2018) because this behavior benefits women but challenges men's higher status in society. With regards to candidate race, conflicting findings suggests that the Black candidate will be judged both more (Donovan, 2011; Motro et al., 2022) and less harshly (Livingston et al., 2012) than the White candidate when she expresses anger. We therefore refrain from making a priori hypotheses for these moderators.

## Study 1

In Study 1 we examined participants' evaluations and willingness to engage in action with a woman who either expressed group-based anger, communal anger, or no anger about gender inequality. We also explored whether this relationship was dependent upon the participants' gender.

## Method

### Participants

Power analysis using G\*Power (Faul et al., 2007) indicated that a total sample of 244 participants would be needed to detect a small to medium effect ( $f = .20$ ) with 80% power and an alpha of .05. We aimed to over recruit participants to account for those who did not complete the study and failed the manipulation checks. Nineteen participants were excluded because they saw the manipulation but did not complete the manipulation check questions. Four participants were excluded because they did not indicate their gender. One hundred and forty participants were excluded in line with our preregistration because they failed the second manipulation check<sup>1</sup>.

The final sample size consisted of 227 participants (109 men, 118 women)<sup>2</sup> recruited from Prolific Academic in the UK and were paid £1.60 for completing the study. Their ages ranged between 18 and 66 years old with a mean of 29 years ( $SD = 10.29$ ; 1 participant did not report their age). The sample was comprised of mostly White (87%, 198 participants), followed by Asian (4.5%, 10 participants), Black (2%, 4 participants), and multiracial participants (4.5%, 10 participants). Two percent of participants (5 participants) were from another racial/ethnic group which they indicated in the textbox provided. The majority of participants reported that they were heterosexual (87%; 198 participants), followed by bisexual (9%, 21 participants), gay (1.5%, 3 participants) and lesbian (.5%, 1 participant). Two percent of participants (4 participants) identified with another sexual orientation which they indicated in the textbox provided. The study was preregistered ([https://aspredicted.org/PFF\\_78C](https://aspredicted.org/PFF_78C)) and the data and materials are available on the OSF (<https://osf.io/24axr>).

### Design, manipulation, and procedure

The study employed a 3 (expression of anger: group-based anger, communal anger, control)  $\times$  2 (participant gender: men, women) between-subjects design. The expression of anger independent variable was manipulated by exposing participants to a newspaper article about a woman called Sarah Wilson who was running as a candidate in an upcoming General

Election. The article introduced the candidate and stated that her key campaign issue was the need for greater gender equality. Participants were randomly assigned to one of three expression of anger conditions (see supplementary materials). In the group-based anger condition, Sarah expressed anger about gender inequality. In the communal anger condition, Sarah expressed anger about gender inequality because of the impact gender inequality had on women and girls in her community thereby embodying the feminine social norms (Mahalik et al., 2005) and communal gender roles (A. Eagly & Wood, 2012; Wood & Eagly, 2002) expected of women. In the control condition, Sarah discussed gender inequality but did not express anger about this problem. Pilot testing revealed that anger was successfully manipulated in the newspaper article<sup>3</sup>.

After reading the newspaper article, participants completed the manipulation checks before responding to the dependent variables: evaluations of the candidate (perceptions of warmth, competence, complainer), willingness to engage in collective action with the candidate, and willingness to engage in action to support the candidate. They were then asked to report their demographic details. Informed consent was obtained and ethics approval to conduct the research was obtained from the University of Edinburgh ethics committee.

### Measures

The following variables were measured on a 1 (*strongly disagree*) to 7 (*strongly agree*) likert-type scale. See supplementary materials for a list of items.

*Evaluations of the candidate* was measured by asking participants to respond to the statement “I think that Sarah is . . .” followed by a list of traits. Perceptions of warmth (adapted from S. Fiske et al., 2002; Rudman & Glick, 2001) was measured using eight items: warm, tolerant, good-natured, sincere, likable, friendly, kind, and supportive ( $\alpha = .91$ ). Perceptions of competence (adapted from S. Fiske et al., 2002; Rudman & Glick, 2001) was measured using six items: competent, confident, independent, competitive, intelligent, and assertive ( $\alpha = .71$ ). Perceptions that the candidate was a complainer was measured using six items (adapted from Eliezer & Major, 2012): a complainer, troublemaker, emotional, argumentative, hypersensitive, and irritable ( $\alpha = .81$ ).

*Willingness to engage in collective action with the candidate* was measured using six items adapted from Radke et al. (2018) such as “I would be willing to protest for gender equality with Sarah” ( $\alpha = .92$ ).

*Willingness to engage in action to support the candidate* was measured using seven items such as “I would be willing to vote for Sarah in the next General Election” and “I would be willing to donate money to Sarah’s campaign” ( $\alpha = .92$ ).

**Manipulation checks.** We included two manipulation checks in the study. The first manipulation check measured whether participants perceived the candidate to be more angry in the group-based anger and communal anger conditions compared to the control condition where no anger was expressed. As expected, participants perceived that the candidate expressed significantly more anger in the group-based anger and communal anger conditions compared to the control condition<sup>4</sup>.

The second manipulation check measured whether participants correctly identified the content of the manipulation. Participants were asked to respond to the question “Why was Sarah angry in her speech?” By selecting one or more options: “Sarah was angry about gender inequality, especially for women and girls in her community” (option 1), “Sarah was angry about gender inequality” (option 2), and “Sarah discussed gender inequality but did not show any anger during her speech” (option 3). To pass the manipulation check, participants in the group-based anger condition were required to select only option 2, participants in the communal anger condition were required to select option 1 or both options 1 and 2, and participants in the control condition were required to select option 3. In line with our preregistration, participants who incorrectly answered this question were removed from the data analysis.

**Table 1.** Means, standard deviations, and correlations for Study 1.

	Mean (SD)	1	2	3	4	5	6	7	8	9
1. Age	29.00 (10.29)	-								
2. Gender	-.04 (1.00)	-.13	-							
3. Race	.75 (.67)	.09	.08	-						
4. Sexual Orientation	.74 (.67)	.08	.18**	.09	-					
5. Warmth	4.71 (.96)	-.09	-.27***	-.06	-.12	-				
6. Competence	5.41 (.75)	.07	-.24***	.01	-.05	.63***	-			
7. Complainer	3.86 (1.15)	-.04	.35***	.18**	.08	-.55***	-.25***	-		
8. Collective Action	4.32 (1.48)	-.02	-.30***	-.14*	-.18**	.66***	.45***	-.54***	-	
9. Supportive Action	3.52 (1.39)	.07	-.27***	-.13*	-.14*	.59***	.41***	-.50***	.80***	-

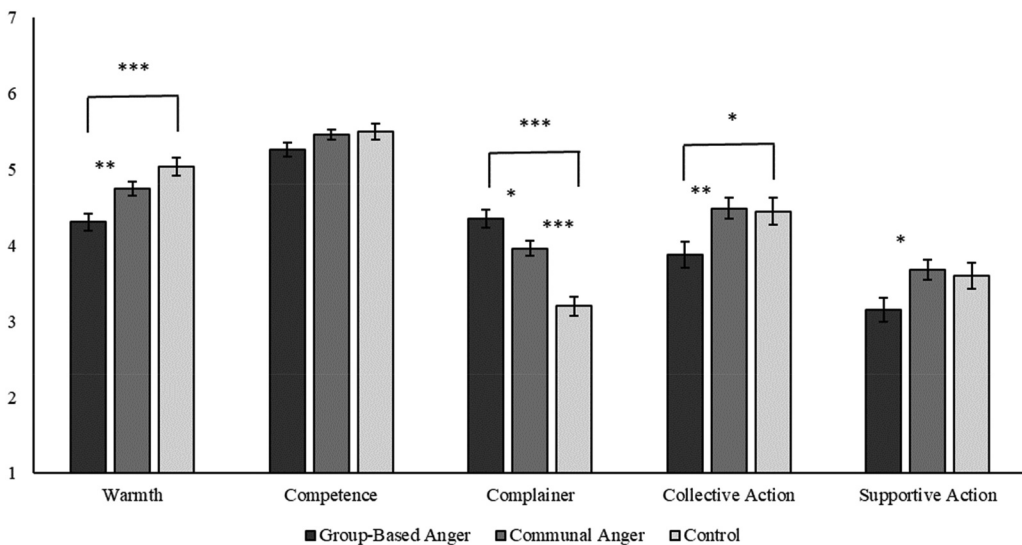
\* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$ . Gender: Man = 1, Woman = -1. Race: White = 1, Person of Color = -1. Sexual Orientation: Heterosexual = 1, LGBTQ+ = -1.

**Results and discussion**

Means, standard deviations, and correlations between the variables are summarized in Table 1. A 3 (expression of anger: group-based anger, communal anger, control)  $\times$  2 (participant gender: men, women) between-subjects MANOVA was conducted for the dependent variables (perceptions of warmth, competence, complainer, willingness to engage in collective action with the candidate, and willingness to engage in action to support the candidate). No significant multivariate interaction effects between expression of anger and participant gender was found,  $F(10, 434) = .55, p = .857, \eta_p^2 = .01$ ; Wilks'  $\Lambda = .98$ . There was a significant multivariate main effect of expression of anger,  $F(10, 434) = 5.65, p < .001, \eta_p^2 = .12$ ; Wilks'  $\Lambda = .78$ . A significant multivariate main effect of participant gender was also found,  $F(5, 217) = 7.75, p < .001, \eta_p^2 = .15$ ; Wilks'  $\Lambda = .85$ . We conducted five univariate ANOVAs for each of the dependent variables to follow-up the results of the MANOVA (see Figure 1).

**Perceptions of warmth**

We found a significant main effect of expression of anger,  $F(2, 221) = 10.52, p < .001, \eta_p^2 = .09$ . Participants perceived the candidate to be significantly less warm when she expressed group-based anger ( $M = 4.30, SD = 1.03$ ) compared to no anger ( $M = 5.07, SD = 0.88$ ),  $p < .001, 95\%$  CI (-1.05, -.41). Participants also perceived the candidate to be significantly less warm when she expressed group-based anger compared to communal anger ( $M = 4.75, SD = 0.88$ ),  $p = .002, 95\%$



**Figure 1.** Main effect of anger expression on the dependent variables (Study 1; standard errors reported; \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$ ).

CI (-.72, -.16). There was no significant difference in perceptions of warmth of the candidate between the communal anger and control condition,  $p = .050$ , 95% CI (-.58, .00).

We also found a significant main effect of participant gender such that women ( $M = 4.95$ ,  $SD = 0.87$ ) perceived the candidate to be warmer than men ( $M = 4.44$ ,  $SD = 0.99$ ),  $F(1, 221) = 16.51$ ,  $p < .001$ , 95% CI (-.74, -.26),  $\eta_p^2 = .07$ . No interaction between expression of anger and participant gender was found,  $F(2, 221) = .77$ ,  $p = .465$ ,  $\eta_p^2 = .01$ .

### **Perceptions of competence**

We did not find a main effect of expression of anger,  $F(2, 221) = 2.02$ ,  $p = .135$ ,  $\eta_p^2 = .02$ , or an interaction between expression of anger and participant gender for perceptions of the candidate's competence,  $F(2, 221) = 1.54$ ,  $p = .218$ ,  $\eta_p^2 = .01$ .

We did, however, find a significant main effect of participant gender such that women ( $M = 5.58$ ,  $SD = 0.64$ ) perceived the candidate to be more competent than men ( $M = 5.23$ ,  $SD = 0.82$ ),  $F(1, 221) = 11.25$ ,  $p < .001$ , 95% CI (-.53, -.14),  $\eta_p^2 = .05$ .

### **Perceptions of the candidate as a complainer**

We found a significant main effect of expression of anger,  $F(2, 221) = 21.23$ ,  $p < .001$ ,  $\eta_p^2 = .16$ . Participants perceived the candidate to be significantly more of a complainer when she expressed group-based anger ( $M = 4.36$ ,  $SD = 1.01$ ) compared to no anger ( $M = 3.14$ ,  $SD = 1.04$ ),  $p < .001$ , 95% CI (.80, 1.51). Participants also perceived the candidate to be significantly more of a complainer when she expressed group-based anger compared to communal anger ( $M = 3.96$ ,  $SD = 1.10$ ),  $p = .013$ , 95% CI (.08, .71). And participants perceived the candidate to be significantly more of a complainer in the communal anger compared to no anger condition,  $p < .001$ , 95% CI (.44, 1.08).

We also found a significant main effect of participant gender such that men ( $M = 4.28$ ,  $SD = 1.02$ ) perceived the candidate to be more of a complainer than women ( $M = 3.47$ ,  $SD = 1.13$ ),  $F(1, 221) = 30.67$ ,  $p < .001$ , 95% CI (.49, 1.03),  $\eta_p^2 = .12$ . No interaction between expression of anger and participant gender was found,  $F(2, 221) = .01$ ,  $p = .990$ ,  $\eta_p^2 = .01$ .

### **Willingness to engage in collective action with the candidate**

We found a significant main effect of expression of anger,  $F(2, 221) = 4.25$ ,  $p = .015$ ,  $\eta_p^2 = .04$ . Participants were significantly less willing to engage in collective action with the candidate when she expressed group-based anger ( $M = 3.87$ ,  $SD = 1.46$ ) compared to no anger ( $M = 4.52$ ,  $SD = 1.51$ ),  $p = .024$ , 95% CI (-1.07, -.08). Participants were also significantly less willing to engage in collective action with the candidate when she expressed group-based anger compared to communal anger ( $M = 4.49$ ,  $SD = 1.42$ ),  $p = .006$ , 95% CI (-1.05, -.18). There was no significant difference in willingness to engage in collective action with the candidate between the communal anger and control condition,  $p = .868$ , 95% CI (-.41, .49).

We also found a significant main effect of participant gender such that women ( $M = 4.75$ ,  $SD = 1.44$ ) were more willing to engage in collective action with the candidate than men ( $M = 3.86$ ,  $SD = 1.38$ ),  $F(1, 221) = 21.98$ ,  $p < .001$ , 95% CI (-1.28, -.52),  $\eta_p^2 = .09$ . No interaction between expression of anger and participant gender was found,  $F(2, 221) = .33$ ,  $p = .721$ ,  $\eta_p^2 = .01$ .

### **Willingness to engage in action to support the candidate**

We found a significant main effect of expression of anger,  $F(2, 221) = 3.38$ ,  $p = .036$ ,  $\eta_p^2 = .03$ . There was no significant difference in willingness to engage in action to support the candidate when she expressed group-based anger ( $M = 3.14$ ,  $SD = 1.33$ ) compared to no anger ( $M = 3.65$ ,  $SD = 1.33$ ),  $p = .062$ , 95% CI (-.92, .02). Participants were significantly less willing to engage in action to support the candidate when she expressed group-based anger compared to communal anger ( $M = 3.68$ ,  $SD = 1.42$ ),  $p = .012$ , 95% CI (-.94, -.12). There was no significant difference in willingness to engage in action to support the candidate between the communal anger and control condition,  $p = .711$ , 95% CI (-.35, .51).

We also found a significant main effect of participant gender such that women ( $M = 3.88$ ,  $SD = 1.30$ ) were more willing to engage in action to support the candidate than men ( $M = 3.13$ ,  $SD = 1.37$ ),  $F(1, 221) = 18.33$ ,  $p < .001$ , 95% CI  $(-1.14, -.42)$ ,  $\eta_p^2 = .08$ . No interaction between expression of anger and participant gender was found,  $F(2, 221) = .86$ ,  $p = .423$ ,  $\eta_p^2 = .01$ .

In line with Hypothesis 1, we found that participants perceived the candidate to be less warm, more of a complainer, and less willing to engage in collective (but not supportive) action with her when she expressed group-based anger compared to no anger. In line with Hypothesis 2, we also found that participants perceived the candidate to be less warm, more of a complainer, and were less willing to engage in collective (as well as supportive) action with her when she expressed group-based anger compared to communal anger.

We did not find an effect of expression of anger on perceptions of the candidate's competence, and no difference between the expression of communal anger and no anger in perceptions of the candidate's warmth as well as willingness to engage in collective (and supportive) action with the candidate was found. The exception to this was participants perceived the candidate to be more of a complainer in the communal anger compared to the no anger condition.

Finally, we consistently found that women had more positive evaluations of the candidate and were more willing to engage in both collective action and action to support the candidate compared to men. This is to be expected because women seek to benefit from greater gender equality but men might find advocating for this outcome threatening to their higher status.

## Study 2

Study 2 replicated and extended Study 1 by examining 1) evaluations and willingness to engage in action with a woman who either expressed group-based anger, communal anger, or no anger about gender inequality, and 2) whether this relationship was dependent upon the woman's race (i.e., whether she was Black or White). Participants were again exposed to a newspaper article about a woman political candidate who identified gender inequality as one of her key campaign issues. Study 2 allowed us to confirm our results from Study 1 and investigate the role race might play when women express anger about gender inequality. It is necessary to consider race given that this is an important facet of a person's identity which intersects with gender (Cole, 2009; Crenshaw, 1991) but at times has been ignored by the psychological literature (Richeson & Sommers, 2016; Shelton, 2000).

Previous research has found that White but not Black women leaders are conferred lower status when they express dominance (Livingston et al., 2012). This finding suggest that participants will evaluate the Black woman who expresses anger (an indicator of dominance; Gaertig et al., 2019; Tiedens, 2001) about gender inequality less negatively and be more willing to engage in action with her compared to the White woman. However, other research indicates that Black women are judged more harshly for expressing anger because this emotion activates the negative Angry Black Woman stereotype (Donovan, 2011; Motro et al., 2022). We therefore explore these competing predictions in Study 2. We also chose to focus on the role of race instead of participant gender because participant gender did not moderate the findings in Study 1 and we were concerned that including participant gender as an additional independent variable in Study 2 would lead to inaccuracies in the interpretation of results due to reduced power.<sup>5</sup>

## Method

### Participants

Power analysis using G\*Power (Faul et al., 2007) indicated that a total sample of 244 participants would be needed to detect a small to medium effect ( $f = .20$ ) with 80% power and an alpha of .05. We aimed to over recruit participants so that we had enough participants to account for those who failed the manipulation checks. Four hundred and twelve participants were removed because they clicked on

the information sheet but did not continue with the study. Twenty participants were excluded because they saw the manipulation but did not complete the manipulation check questions. One hundred and fifty-three participants were excluded in line with our preregistration because they failed the second and/or third manipulation checks.<sup>1</sup>

The final sample size consisted of 254 participants (59 men, 131 women, 10 non-binary, 54 participants did not report their gender<sup>5</sup>) who volunteered their time and were recruited by advertising the study on social media and posting flyers around a UK university. Their ages ranged between 18 and 71 years old with a mean of 35.20 years ( $SD = 14.32$ ; 58 participants did not report their age). The sample was comprised mostly of White (64.5%, 164 participants), followed by Black (7%, 18 participants), multiracial (6.5%, 16 participants), and Asian (2%, 5 participants). One percent of participants (3 participants) were from another racial/ethnic group which they indicated in the textbox provided (48 participants did not indicate their race/ethnicity). The majority of participants reported that they were heterosexual (54%; 137 participants), followed by bisexual (10.5%, 27 participants), lesbian (4%, 10 participants) and gay (3.5%, 9 participants). 10.5% of participants (22 participants) identified with another sexual orientation which they indicated in the textbox provided (49 participants did not indicate their sexual orientation).

The study was preregistered ([https://aspredicted.org/blind.php?x=XST\\_TQN](https://aspredicted.org/blind.php?x=XST_TQN)) and the data and materials are available on the OSF (<https://osf.io/24axr>).

### ***Design, manipulation, and procedure***

The study employed a 3 (expression of anger: group-based anger, communal anger, control)  $\times$  2 (candidate race: Black, White) between-subjects design. The expression of anger independent variable was manipulated the same as in Study 1. The candidate race independent variable was manipulated by including information about Sarah Wilson either being a Black or White woman in the newspaper article (“Continuing with our coverage of campaign launches for candidates running in the next General Election, yesterday Sarah Wilson, a local Black/White politician, launched her campaign at her local Town Hall”) and question prompts (“Earlier in the questionnaire, you read a newspaper extract about a speech made by a Black/White woman called Sarah who was launching her campaign to be elected to Parliament. Please respond to the following statements”). Participants were randomly assigned to one of six conditions.

As in Study 1, after reading the newspaper article participants completed the manipulation checks before responding to the dependent variables. They were then asked to report their demographic details. Informed consent was obtained and ethics approval to conduct the research was obtained from the University of Edinburgh ethics committee.

### ***Measures***

Perceptions of warmth ( $\alpha = .88$ ), competence ( $\alpha = .70$ ), that the candidate was a complainer ( $\alpha = .86$ ), as well as willingness to engage in collective action with the candidate ( $\alpha = .92$ ) and willingness to engage in action to support the candidate ( $\alpha = .93$ ) was measured as in Study 1.

***Manipulation checks.*** The same manipulation checks from Study 1 were included in Study 2. As expected, participants perceived that the candidate expressed significantly more anger in the group-based anger and the communal anger conditions compared to the control condition<sup>6</sup>. As in Study 1, the second manipulation check measured whether participants correctly identified the content of the anger manipulation. We also measured whether participants correctly identified the candidate’s race (“Which of the following is correct;” Sarah is a Black woman, Sarah is a White woman). In line with our preregistration, participants who incorrectly answered the second and/or third manipulation checks were excluded from the data analysis.

**Table 2.** Means, standard deviations, and correlations for Study 2.

	Mean (SD)	1	2	3	4	5	6	7	8	9
1. Age	35.20 (14.32)	-								
2. Gender	-.38 (.93)	.19*	-							
3. Race	.59 (.81)	.23**	-.01	-						
4. Sexual Orientation	.34 (.94)	.35***	.05	.06	-					
5. Warmth	4.66 (.89)	-.27***	-.16*	.01	-.12	-				
6. Competence	5.22 (.74)	-.12	-.16*	-.02	-.11	.66***	-			
7. Complainer	3.23 (1.17)	.21**	.15*	.04	.01	-.66***	-.45***	-		
8. Collective Action	4.86 (1.36)	-.29***	-.26***	-.17*	-.13	.62***	.49***	-.59***	-	
9. Supportive Action	3.76 (1.32)	-.21**	-.19**	-.13	-.01	.66***	.52***	-.56***	.77***	-

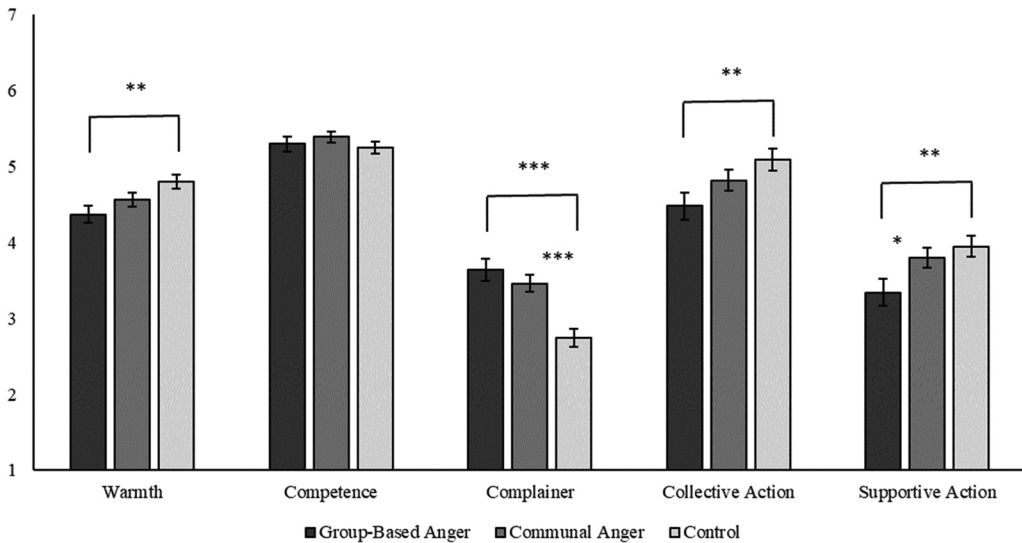
\* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$ . Gender: Man = 1, Woman = -1. Race: White = 1, Person of Color = -1. Sexual Orientation: Heterosexual = 1, LGBTQ+ = -1.

**Results and discussion**

Means, standard deviations, and correlations between the variables are summarized in Table 2. A 3 (expression of anger: group-based anger, communal anger, control)  $\times$  2 (candidate race: Black, White) between-subjects MANOVA was conducted for the dependent variables (perceptions of warmth, competence, complainer, willingness to engage in collective action with the candidate, willingness to engage in action to support the candidate). No significant multivariate interaction effects between expression of anger and candidate race was found,  $F(10, 454) = .94, p = .495, \eta_p^2 = .02$ ; Wilks'  $\Lambda = .96$ . There was a significant multivariate main effect of expression of anger,  $F(10, 454) = 5.03, p < .001, \eta_p^2 = .10$ ; Wilks'  $\Lambda = .81$ . There was also a significant multivariate main effect of candidate race,  $F(5, 227) = 3.16, p = .009, \eta_p^2 = .07$ ; Wilks'  $\Lambda = .94$ . We conducted five univariate ANOVAs for each of the dependent variables to follow-up the results of the MANOVA (see Figure 2).

**Perceptions of warmth**

We found a significant main effect of expression of anger,  $F(2, 236) = 4.42, p = .013, \eta_p^2 = .04$ . Participants perceived the candidate to be significantly less warm when she expressed group-based anger ( $M = 4.41, SD = 0.92$ ) compared to no anger ( $M = 4.84, SD = 0.76$ ),  $p = .004, 95\% CI (-.72, -.14)$ . However, there was no significant difference in perceptions of warmth of the candidate between the



**Figure 2.** Main effect of anger expression on the dependent variables (Study 2; standard errors reported; \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$ ).

group-based anger and communal anger conditions ( $M = 4.63$ ,  $SD = 0.95$ ),  $p = .147$ , 95% CI  $(-.49, .07)$ . There was also no significant difference in perceptions of warmth of the candidate between the communal anger and no anger conditions,  $p = .086$ , 95% CI  $(-.47, .03)$ .

We also found a main effect of candidate race such that participants perceived the Black candidate ( $M = 4.82$ ,  $SD = 0.96$ ) to be warmer than the White candidate ( $M = 4.49$ ,  $SD = 0.78$ ),  $F(1, 236) = 8.35$ ,  $p = .004$ , 95% CI  $(.11, .55)$ ,  $\eta_p^2 = .03$ . No interaction between expression of anger and the candidate's race was found,  $F(2, 236) = .30$ ,  $p = .740$ ,  $\eta_p^2 = .01$ .

### **Perceptions of competence**

We did not find a main effect of expression of anger,  $F(2, 236) = .60$ ,  $p = .551$ ,  $\eta_p^2 = .01$ , candidate race,  $F(1, 236) = .03$ ,  $p = .855$ ,  $\eta_p^2 = .01$ , or an interaction between expression of anger and candidate race for perceptions of the candidate's competence,  $F(2, 236) = .39$ ,  $p = .675$ , 95% CI  $(-.18, .21)$ ,  $\eta_p^2 = .01$ .

### **Perceptions of the candidate as a complainer**

We found a significant main effect of expression of anger,  $F(2, 236) = 15.55$ ,  $p < .001$ ,  $\eta_p^2 = .12$ . Participants perceived the candidate to be significantly more of a complainer when she expressed group-based anger ( $M = 3.64$ ,  $SD = 1.26$ ) compared to no anger ( $M = 2.72$ ,  $SD = 1.02$ ),  $p < .001$ , 95% CI  $(.55, 1.29)$ . However, there was no significant difference in perceptions that the candidate was a complainer between the group-based anger and communal anger conditions ( $M = 3.47$ ,  $SD = 1.10$ ),  $p = .371$ , 95% CI  $(-.20, .53)$ . Participants also perceived the candidate to be significantly more of a complainer in the communal anger compared to the no anger condition,  $p < .001$ , 95% CI  $(.43, 1.07)$ .

We did not find a main effect of candidate race,  $F(1, 236) = 2.74$ ,  $p = .099$ , 95% CI  $(-.53, .05)$ ,  $\eta_p^2 = .01$ , or an interaction between expression of anger and candidate race for perceptions that the candidate was a complainer,  $F(2, 236) = .13$ ,  $p = .880$ ,  $\eta_p^2 = .01$ .

### **Willingness to engage in collective action with the candidate**

We found a significant main effect of expression of anger,  $F(2, 235) = 3.71$ ,  $p = .026$ ,  $\eta_p^2 = .03$ . Participants were less willing to engage in collective action with the candidate when she expressed group-based anger ( $M = 4.48$ ,  $SD = 1.45$ ) compared to no anger ( $M = 5.10$ ,  $SD = 1.35$ ),  $p = .007$ , 95% CI  $(-1.07, -.17)$ . However, there was no significant difference in willingness to engage in collective action with the candidate between the group-based anger and communal anger conditions ( $M = 4.85$ ,  $SD = 1.28$ ),  $p = .110$ , 95% CI  $(-.81, .08)$ . There was also no significant difference in willingness to engage in collective action with the candidate between the communal anger and control conditions,  $p = .192$ , 95% CI  $(-.65, .13)$ .

We did not find a main effect of candidate race,  $F(1, 235) = 1.72$ ,  $p = .191$ , 95% CI  $(-.12, .58)$ ,  $\eta_p^2 = .01$ , or an interaction between expression of anger and candidate race for willingness to engage in collective action with the candidate,  $F(2, 235) = 1.05$ ,  $p = .351$ ,  $\eta_p^2 = .01$ .

### **Willingness to engage in action to support the candidate**

We found a significant main effect of expression of anger,  $F(2, 231) = 4.11$ ,  $p = .018$ ,  $\eta_p^2 = .03$ . Participants were less willing to engage in action to support the candidate when she expressed group-based anger ( $M = 3.34$ ,  $SD = 1.33$ ) compared to no anger ( $M = 3.96$ ,  $SD = 1.26$ ),  $p = .005$ , 95% CI  $(-1.06, -.19)$ . We also found that participants were less willing to engage in action to support the candidate when she expressed group-based anger compared to communal anger ( $M = 3.82$ ,  $SD = 1.32$ ),  $p = .031$ , 95% CI  $(-.91, -.05)$ . There was no significant difference in willingness to engage in action to support the candidate between the communal anger and control conditions,  $p = .441$ , 95% CI  $(-.52, .23)$ .

We also found a main effect of the candidate's race such that participants were significantly more willing to engage in action to support the candidate when she was Black ( $M = 3.94$ ,  $SD = 1.38$ ) compared to White ( $M = 3.58$ ,  $SD = 1.23$ ),  $F(1, 231) = 4.79$ ,  $p = .030$ , 95% CI  $(.04, .72)$ ,  $\eta_p^2 = .02$ . No

interaction between expression of anger and the candidate's race was found,  $F(2, 231) = .83, p = .439, \eta_p^2 = .01$ .

Providing support for Hypothesis 1 and replicating the results from Study 1, we found that participants perceived the candidate to be less warm, more of a complainer, and were less willing to engage in collective (and supportive) action with her when she expressed group-based anger compared to no anger. As in Study 1, we did not find any differences in perceptions of the candidate's competence.

Contrary to our findings in Study 1 and Hypothesis 2 we did not find that participants evaluated the candidate differently and were less willing to engage in collective action with her when she expressed group-based anger compared to communal anger. We only found that participants were less willing to take action to support the candidate when she expressed group-based anger compared to communal anger. And while she was perceived to be more of a complainer when expressing communal anger compared to no anger, evaluations of warmth and willingness to engage in collective (and supportive) action with her did not differ between these two conditions. While we found no interaction between expression of anger and candidate race on the dependent variables, we did find that participants perceived the Black candidate to be warmer and they were more willing to engage in action to support her compared to the White candidate. We discuss these results in more detail in the below.

## **General discussion**

In this paper, we investigated whether exposure to a woman who expresses group-based anger about gender inequality is negatively evaluated and undermines collective action for greater gender equality. We also examined whether this hypothesized effect could be attenuated when group-based anger is expressed for communal reasons (i.e., on behalf of women and girls in her community). Finally, we explored the role participant gender as well as candidate race played in influencing these outcomes. To do this, we exposed participants to a woman political candidate who expressed anger about gender inequality (group-based anger), communal anger (i.e., on behalf of women and girls in her community), or no anger. We then measured participants' perceptions of the candidate's warmth, competence, whether she was a complainer, willingness to engage in collective action for gender equality with her, and willingness to engage in action to support the candidate (e.g., voting for her, donating money to her campaign).

### **Hypothesis 1: Group-Based Anger vs No Anger**

Across two studies, we found that participants evaluated the candidate more negatively and were less willing to engage in collective action with her when she expressed group-based anger compared to no anger. These findings support Hypothesis 1 and aligns with previous research which found that women are derogated when they express anger (Brescoll & Uhlmann, 2008; Heilman & Okimoto, 2007; Phelan et al., 2008; Rudman & Glick, 1999, 2001) because this emotion violates the feminine social norms and communal gender roles expected of them (A. Eagly & Wood, 2012; Mahalik et al., 2005; Wood & Eagly, 2002).

### **Hypothesis 2: Group-Based Anger vs Communal Anger**

We found only partial support for Hypothesis 2. Participants evaluated the candidate more negatively and were less willing to engage in collective action with her when she expressed group-based anger compared to communal anger in Study 1 but not Study 2 (except for willingness to engage in action to support the candidate). It is possible that these inconsistent findings are due to differences between the samples – more women compared to men participated in Study 2 and these participants were more diverse in terms of their race and sexual orientation. As a result, their support may be less dependent upon whether the candidate

embodies communal characteristics or not because 1) women may be more aware of the expectations of women compared to men, 2) women of color and members of the LGBTQIA+ community are often excluded from traditional narratives of femininity (Donovan, 2011), and 3) participants with intersecting identities may be more aware of the need for collective action (Pham et al., 2023).

### ***Communal anger vs no anger***

Besides from increased perceptions that the candidate was a complainer, across both studies we found no differences in evaluations of the candidate and willingness to engage in action with her when she expressed communal anger compared to no anger. This finding is in line with previous research which has found that negative evaluations of a woman's agency can be offset when combined with communality (Haines & Stroessner, 2019; Heilman & Okimoto, 2007; Rosette & Tost, 2010), and provides further support for our argument that the violation of feminine social norms and communal gender roles is driving our results. Importantly, exposure to communal anger did not undermine collective action for gender equality compared to no anger despite increased perceptions that she was a complainer and participants being less willing to engage in collective action with the candidate when exposed to group-based anger compared to no anger.

Moreover, we did not find that exposure to communal anger (or group-based anger for that matter) influenced evaluations of the candidate's competence which suggests that exposure to different types of anger does not shape whether participants perceive her to be capable or not.

### ***Role of participant gender and candidate race***

While gender did not moderate our results in Study 1, we did find that women evaluated the candidate more positively and were more willing to engage in collective action with her which is consistent with our argument that women would be more likely to support collective action for gender equality than men because this behavior benefits women but challenges men's higher status in society (Jackson et al., 1996; Radke et al., 2018).

Candidate race also did not moderate our results for Study 2. However, this result contradicts previous research which suggests that there should be an interaction with candidate race that either heightens or attenuates participants' negative evaluations of the candidate and willingness to engage in action with her (Donovan, 2011; Livingston et al., 2012; Motro et al., 2022). Future research could consider increasing the sample size and strengthening the manipulation (e.g., including a picture of the candidate to make her race more salient) to ensure that methodological limitations are not influencing these results.

Although we did find that participants perceived the Black candidate to be warmer than the White candidate, and were more willing to engage in action which supports the candidate. It is possible that this finding is due to concerns around not appearing prejudice for our White participants (Plant & Devine, 1998), endorsement of the "Strong Black Woman" stereotype (Donovan, 2011), and the perception that the Black candidate is more genuine in their attempts for gender equality as well as a rejection of White feminism (Hamad, 2020). However, we suggest caution when interpreting these results because this was not found for willingness to engage in collective action for gender equality with the candidate.

Related to this point, we found inconsistent results for willingness to engage in action to support the candidate despite this dependent variable being related to and highly correlated with collective action for gender equality. This might be due to participants being less willing to engage in a time-consuming action for a fictional candidate compared to action for the already established cause of gender equality.

### ***Theoretical and empirical contribution***

Previous theoretical work has argued that people might distance themselves from a woman who expresses group-based anger – a key antecedent of collective action (Van Zomeren et al., 2008, 2012) –

because this emotion violates the feminine social norms and communal gender roles expected of them (Radke et al., 2016). As a result, they might be prevented from engaging in collective action for greater gender equality which is necessary to achieve this goal and may explain in part why gender equality has not yet been achieved. This paper makes a novel contribution to the psychological literature by empirically demonstrating support for this theoretical argument because participants were less willing to engage in collective action with the candidate when she expressed group-based anger compared to no anger.

We also found partial evidence to suggest that the violation of feminine social norms and communal gender roles are driving our findings because no differences were found when the woman political candidate expressed anger for communal reasons compared to no anger about gender inequality for perceptions of warmth and willingness to engage in collective action with her. We further explored whether these findings were dependent upon the participants' gender and candidate race. Race is an important facet of a person's identity which intersects with gender (Cole, 2009; Crenshaw, 1991) but at times has been ignored by the psychological literature (Richeson & Sommers, 2016; Shelton, 2000).

### ***Practical implications***

While introducing communal anger is an additional contribution to the psychological literature, we wish to advocate for a cautious approach when interpreting and applying our results. We do not wish to propose that women should be more communal when expressing anger as a way to overcome the negative evaluations women who express this emotion experience. For too long, women have been told that the problem of gender inequality lies with the characteristics, motivations, and behaviors of individual women (Sandberg, 2013) rather than the social context which works to maintain women's lower status (Fiske & Glick, 1996). Instead we interpret our findings as a call to dismantle the narrow expectations that require women to adhere to feminine social norms and communal gender roles in order to avoid derogation as one of the many pathways which can facilitate progress toward gender equality.

### ***Limitations and directions for future research***

We do, however, acknowledge that there are some limitations in the present work. The sample size could be increased to clarify the inconsistent findings and the manipulation strengthened so that more participants passed the manipulation check. The manipulation could be strengthened by asking participants to listen to a voice recording or watch a video which manipulates a woman's expression of anger. We did, however, take steps to rule out alternative explanations by deliberately including a no anger control condition which still referred to gender inequality so that we could confirm that participants were not responding negatively to the topic of gender inequality but rather the different expressions of anger in response to this topic. Moreover, while examining men's expression of anger was beyond the scope of this paper, we anticipate that they will not be equally penalized for expressing this emotion when discussing gender inequality compared to women. Previous research has shown that men become more influential when they express anger compared to no emotion (Salerno & Peter-Hagene, 2015), and men often garner more support when discussing gender equality than women because they are perceived to be more credible and less self-interested (Drury & Kaiser, 2014) as well as less likely to be viewed as complainers when confronting sexism (Eliezer & Major, 2012). Finally, some readers might attribute the attenuating effect of communal anger to participants perceiving that the candidate is demonstrating greater empathy for her community but further data analysis suggests that this is not the case.<sup>7</sup>

In conclusion, we investigated the role group-based anger plays in undermining collective action for greater gender equality. We found that women who express anger about gender inequality are evaluated more negatively and people are less willing to engage in collective action to address this problem with her. Moreover, exposure to anger about gender inequality for communal reasons partially attenuated these findings suggesting that the feminine social norms and communal gender

roles expected of women are driving these results. We believe that this work is an important piece of the puzzle to understanding why gender equality has not yet been achieved and what could be done to make progress toward achieving this goal.

## Notes

1. We propose that a number of participants failed the second manipulation check because of the subtle nature of this question that required participants to pay attention to the manipulation for it to be answered correctly. Removing participants who failed the second manipulation check allowed us to confidently attribute the findings to the manipulation. The decision to exclude participants who failed the second (as well as third for Study 2) manipulation check was preregistered.  
Demographic information for participants who failed the manipulation check in Study 1 ( $N = 140$ ): For participants who did not pass the manipulation check, 73 were men and 67 were women. Their ages ranged between 18 and 60 years old with a mean of 27.48 years ( $SD = 9.04$ ). The participants were mostly White (89.3%, 125 participants), followed by Asian (4.3%, 6 participants), Black (1.4%, 2 participants), and multiracial participants (2.1%, 3 participants). Four participants (2.9%) were from another racial/ethnic group which they indicated in the textbox provided. The majority of participants reported that they were heterosexual (87.2%; 122 participants), followed by bisexual (8.6%, 12 participants), gay (1.4%, 2 participants), and lesbian (1.4%, 2 participants). Finally, 1.4% of participants (2 participants) identified with another sexual orientation which they indicated in the textbox provided.  
Demographic information for participants who failed the manipulation checks in Study 2 ( $N = 153$ ): For participants who did not pass the manipulation checks, 39 were men, 76 were women, 2 were non-binary, and 36 did not report their gender. Their ages ranged between 17 and 60 years old with a mean of 32.66 years ( $SD = 12.59$ ). The participants were mostly White (58.2%, 89 participants), followed by Black (10.5%, 16 participants), Asian (3.9%, 6 participants), and multiracial participants (4.6%, 7 participants). One participant (.7%) was from another racial/ethnic group which they indicated in the textbox provided. Thirty-four participants (22.2%) did not indicate their race/ethnicity. The majority of participants reported that they were heterosexual (61.4%; 94 participants), followed by bisexual (7.8%, 12 participants), and gay (2%, 3 participants). Finally, 3.3% of participants (5 participants) identified with another sexual orientation which they indicated in the textbox provided, and 25.5% of participants (39 participants) did not indicate their sexual orientation.
2. While the response option was available, we did not have any non-binary participants in the sample. Participants were given the option to indicate another gender in the textbox provided.
3. Participants were asked to respond to the question “How angry was Sarah in her speech?” from 1 (*not at all*) to 7 (*extremely angry*) likert-type scale. Pilot testing revealed that participants ( $N = 96$ ; 15 men, 77 women, 2 non-binary, 2 participants did not report their gender;  $M_{age} = 37.09$ ,  $SD_{age} = 14.64$ ; 18–74 years old) perceived Sarah to be significantly more angry in the group-based anger ( $M = 5.90$ ,  $SD = 1.50$ ) compared to the control condition ( $M = 2.85$ ,  $SD = 1.58$ ),  $p < .001$ , 95% CI (2.36, 3.74). And significantly more angry in the communal anger ( $M = 6.06$ ,  $SD = 0.95$ ) compared to the control condition,  $p < .001$ , 95% CI (2.55, 3.87). There was no significant difference in participants’ perceptions of Sarah’s anger between the group-based anger and communal anger conditions,  $p = .639$ , 95% CI (-.85, .52),  $F(2, 93) = 57.41$ ,  $p < .001$ ,  $\eta_p^2 = .55$ . These findings indicate that anger was successfully manipulated in the newspaper article.
4. Participants were asked to respond to the question “How angry was Sarah in her speech?” from 1 (*not at all*) to 7 (*extremely angry*) likert-type scale. As expected, participants perceived that the candidate expressed significantly more anger in the group-based anger ( $M = 5.95$ ,  $SD = 1.10$ ;  $p < .001$ , 95% CI [3.24, 3.99]) and communal anger conditions ( $M = 6.07$ ,  $SD = 0.92$ ;  $p < .001$ , 95% CI [3.39, 4.07]) compared to the control condition ( $M = 2.34$ ,  $SD = 1.25$ ). There was no significant difference in perceptions of the candidate’s anger between the group-based anger and communal anger conditions,  $p = .500$ , 95% CI (-.45, .22),  $F(2, 224) = 261.04$ ,  $p < .001$ ,  $\eta_p^2 = .70$ .
5. A number of participants completed the dependent variables but did not report their demographic details which was included at the end of the study. We suspect that this was because of the length of time it took participants to complete the study and because we were unable to provide a reward for their participation. However, these participants were retained in the data analysis to ensure that the study was adequately powered and because they did not meet the preregistered criteria for exclusion (e.g., failing the manipulation checks). We did not examine the effect of participant gender in Study 2 because our findings from Study 1 indicated that participant gender did not moderate the effect of condition on the outcome variables.
6. Participants were asked to respond to the question “How angry was Sarah in her speech?” from 1 (*not at all*) to 7 (*extremely angry*) likert-type scale. As expected, participants perceived that the candidate expressed significantly more anger in the group-based anger ( $M = 5.95$ ,  $SD = 1.06$ ;  $p < .001$ , 95% CI [3.45, 4.18]) and the communal anger conditions ( $M = 5.94$ ,  $SD = 1.08$ ;  $p < .001$ , 95% CI [3.48, 4.12]) compared to the control condition ( $M = 2.14$ ,  $SD = 1.22$ ). There was no significant difference in perceptions of the candidate’s anger between the group-based

anger and communal anger conditions, ( $p = .952$ , 95% CI  $[-.35, .38]$ ),  $F(2, 251) = 337.73$ ,  $p < .001$ ,  $\eta_p^2 = .73$ . These findings indicate that anger was successfully manipulated.

- Participants were asked at the end of Study 2 how much Sarah cared about her local community (“Sarah cares a lot about her local community,” 1 = *strongly disagree* to 7 = *strongly agree*). We found no significant main effect of expression of anger,  $F(2, 206) = 1.91$ ,  $p = .151$ ,  $\eta_p^2 = .02$ . We found a main effect of candidate race such that participants perceived the Black candidate ( $M = 5.62$ ,  $SD = 1.11$ ) to care more about her community than the White candidate ( $M = 5.20$ ,  $SD = 1.14$ ),  $F(1, 206) = 8.26$ ,  $p = .004$ , 95% CI  $(.14, .77)$ ,  $\eta_p^2 = .04$ . No interaction between expression of anger and the candidate’s race was found,  $F(2, 206) = .42$ ,  $p = .656$ ,  $\eta_p^2 = .01$ .

## Disclosure statement

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## Notes on contributors

*Dr. Helena R. M. Radke* is a Senior Lecturer in Psychology at James Cook University in Australia. She is a social psychologist interested in understanding how we can make progress towards social equality with a particular interest in collective action (especially allyship) and gender equality.

*Amy Hanson* completed this project as part of her Masters of Science in Social Psychology at the University of Edinburgh.

## Open Scholarship



This article has earned the Center for Open Science badges for Open Data, Open Materials and Preregistered. The data and materials are openly accessible at <https://osf.io/24axr>

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