



# Feminine honor concerns, reactivity to femininity threats, and aggression in U.S. women

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Accepted: 13 June 2023 / Published online: 21 June 2023

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## Abstract

Prior research has suggested that women are relatively nonreactive to femininity threats. Given this, research on gender threats over the last decade has functioned under the premise that men almost exclusively account for reactivity to gender threats and, oftentimes, subsequent aggression. Interestingly, recent work has suggested otherwise, primarily that women from cultures of honor, who tend to place strong emphasis on their social reputations, may be a subgroup who responds similarly to men in regard to gender identity threats. A sample of 305 women on MTurk answered questions about their endorsement of feminine honor ideology, then were randomly assigned to receive different types of false feedback about their femininity (femininity threat, control condition, or femininity boost). Results across eight separate dependent variables showed that women, in general, showed threat reactivity in regard to four of the eight outcomes, although honor endorsing women displayed signs of threat reactivity across all eight outcomes. Furthermore, when threatened, honor endorsing women showed stronger support for forms of aggressive behavior towards the false feedback providers (i.e. seeking out the firing of the survey creators, wanting to physically fight the survey creators, insulting the survey creators). These findings suggest that there is considerable variability in women's responses to femininity threats, especially if such threats are administered to women high in feminine honor concerns. Findings are discussed in the context of intimate relationships and suggest the importance of incorporating feminine honor concepts into future work on gender identity threats.

**Keywords** Femininity · Gender identity threat · Culture of honor · Aggression

Perhaps one of the oldest and most widely studied research topics in psychology is that of aggression. Many different explanations for human aggression have been posited (see Anderson & Bushman, 2002), including personality factors (Hosie et al., 2014), interpersonal factors (Graham & Wells, 2002), general environmental factors like heat and neighborhood instability (Kuo & Sullivan, 2001; Miles-Novelo & Anderson, 2019), and, of interest to the current research, gender identity threats (Vandello et al., 2008). More specifically, the current research seeks to explore how gender

identity threats and cultural factors may interact to facilitate aggression. While some cultural factors have been discussed in this area (see Bond, 2004), the present work is specifically interested in cultures of honor. Culture of honor research has largely posited that men are primary enactors of aggression in such cultures, while women are relatively nonreactive to femininity threats (O'Dea et al., 2022; Vandello & Cohen, 2003)—this claim is consistent with prior research on women, in general, as well (Vandello & Bosson, 2013). Not until recently has evidence been provided which suggests honor endorsing women are supportive of aggressive behavior in response to femininity threats (Foster et al., 2022). The current research seeks to extend this work by examining women's direct responses to a femininity threat manipulation, and to determine if honor endorsing women tend to be more reactive than other women.

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## Relevant theories of aggression

A multitude of frameworks have been utilized to understand aggression, but the General Aggression Model (GAM; Anderson & Bushman, 2002) is likely the most generally-used model at present. In this model, aggressive behavior begins from “input” variables (personal and situational variables), which lead to changes in internal states (arousal, cognitions, and affect), which lead to primary and secondary appraisals which, finally, lead to behavior. The personal variables in this model are wide-ranging, but include expectations about gendered behavior as well as cultural norms and values (Allen et al., 2018), which give insight as to the forms of aggression which may be mandated in certain circumstances. For example, normative beliefs about aggression often suggest that physical aggression is a “masculine” behavior, while relational aggression (i.e., gossip, social exclusion) is a “feminine” behavior (Andrasczyk & Gierczyk, 2017; Cohn & Zeichner, 2006). Further, cultural values may suggest that violence is only warranted in circumstances of retribution or revenge (Cohen et al., 1996; Uskul & Cross, 2020). While the aforementioned findings are certainly useful it is also important to extend this research to show how these perceived threats might help facilitate aggression in specific cultural contexts, such as U.S. cultures of honor.

## Identity threats and aggression

Various social identities, such as religious and national identity (Barnes et al., 2014; McGregor et al., 2015; Wright et al., 2020), have been suggested as potential sources for aggression when such identities are salient and subsequently threatened (Fischer et al., 2010; Purdie-Vaughns et al., 2008). Perhaps the most heavily investigated effect in social identity threats has been that of gender identity. Vandello et al.’s (2008) *precarious manhood* model discusses how men are particularly reactive to gender identity threats because status is socially conferred for men. Here, masculine status is difficult to earn yet can be easily lost, leading to a relative fragile/precarious state of masculine self-concept. This model has helped to explain myriad aggressive outcomes, such as men’s violence towards intimate partners and aggression towards gay men (Harrington et al., 2021; Parrot, 2009; Vieira de Figueiredo et al., 2021). This model is also closely related to models of gender role stress, which focus on the psychological strain caused by gender identity threats (see Copenhaver et al., 2000). Taken together, these two sets of conceptual models help, in part, to explain reactivity to gender identity threats, which is often operationalized as aggressive responding in some fashion.

Interestingly, the *precarious manhood* model has posited that women are relatively nonreactive to gender identity threats. For example, Vandello et al. (2008) found that while men had a marked reaction to a manipulation which indicated gender atypical performance, this manipulation had no discernible effect for women. However, one may question the manner which the researchers determined if participants felt threatened (a word-completion task for anxiety-related words) given that women actually had lower anxiety word scores after receiving feedback that they were ostensibly “low in feminine gender identity”. Jin et al. (2021) found that men, but not women, endorsed cultural scripts that they were supposed to defend their gender identity using aggression. However, as the authors note, using relational aggression (as opposed to physical aggression) as the form of aggression in the vignettes may have altered their findings (p. 18).

The current work does not question the strength of the findings tied to the precarious manhood model for men. In fact, this type of finding is demonstrated convincingly by Himmelstein et al. (2019), who showed that precarious manhood beliefs mediate the links between masculinity threats and cortisol reactivity. However, we feel further research is warranted as to how *femininity* threats may elicit responses in women. For example, in an interesting exchange between researchers, Chrisler (2013) notes that womanhood *can* be threatened or lost, in a sense, when women do not adhere to norms regarding motherhood and physical appearance (it is likely that sexual purity plays a role in this as well; Awaad, 2011). In response, Bosson and Vandello (2013) state that while threats to these aspects of femininity may elicit some damage to self-worth, it is unlikely to elicit the same magnitude of social rejection as analogous threats might pose for males, citing a study where men unable to produce children were viewed as “only boys” (not men), while no similar effect was found for women (Vandello et al., 2008; Study 3).

It is also not clear *how* women might react to such threats. For example, work on gender role stress (stress about conforming to gender expectations) has shown that while both men and women may feel detriments to self-worth when they do not meet gender-related standards, this sense of shame leads to externalizing behaviors for men but internalizing behaviors for women (Efthim et al., 2001; Martz et al., 1995). In contrast to this, outside work by Benard (2013) has suggested that relational aggression, a clear externalizing behavior, emerges when women feel the need to manage their reputation in social systems, implicating a higher level of overt aggression in response to threat. In summary, there is a lack of consensus regarding whether or not women are reactive to gender identity threats, with some work suggesting reactivity (Awaad, 2011; Chrisler, 2013), while other

suggest little to no reactivity in women (Bosson & Vandello, 2011; Vandello et al., 2008).

## Honor and aggression

One potential reason for the inconsistency in findings with women may be that *some* women experience a deep sense of threat during femininity threat manipulations, whereas other women do not. An example of the former group of women may be found in cultures of honor. Cultures of honor exist all over the world, including the Mediterranean, the Middle East, and the southern United States (Brown, 2016; Cohen et al., 1996; Mosquera et al., 2002), and are characterized by a strong emphasis on defending one's social reputations at all costs. While men in cultures of honor are expected to be strong and fearless (Brown, 2016), women are expected to be sexually pure and loyal (Foster et al., 2022; Mosquera, 2011). The importance of a man's reputation has been heavily researched, leading to the development of the Masculinity-based model of Aggressive Retaliation in Society (MARS) model to explain how honor endorsing men engage in violence to defend their masculine identities (O'Dea et al., 2022).

Only recently has it been suggested that honor endorsing women may be reactive to gender identity threats in ways similar to honor endorsing men. For example, Howell et al. (2015) demonstrated that a link between social anxiety and aggression was explained by masculine honor beliefs in a sample of southern U.S. women. The researchers suggested that this may be because honor endorsing women respond aggressively to anxiety-inducing social threats, but utilized a measure of masculine honor as their mediator and did not actually manipulate threat in the study. Chalman et al. (2021) found that honor endorsing women were more supportive of women who engaged in aggression to respond to threats and insults—however, this study used a masculine honor measure as the primary predictor and did not include a direct threat manipulation. Foster et al. (2022) recently found that feminine honor endorsement was linked with higher levels of relational, but not physical aggression, consistent with prior work suggesting that relational aggression is more typically found in women (compared with men; see Bjorkqvist, 2018). Perhaps most important to the current research, Foster et al. (2022; Study 2) demonstrated that this link was only found in women who scored lower in honor fulfillment, suggesting that women only engage in aggression when they feel they are not living up to the standards of what it means to be a “real woman.” Unfortunately, Foster et al. (2022) also did not include a threat manipulation to supplement their claims, which would have allowed the researchers to more directly test of if there are causal links between threatening a woman's honor and

aggressive outcomes. Overall, assessing if honor endorsing women's response to honor threats would benefit the extant literature by providing the first evidence of a *causal* link between honor threats and aggressive outcomes in women. In summary, honor research has consistently shown that men are reactive to gender identity threats (Brown, 2016), but has only just begun to explore women's involvement with aggression and reactivity to gender identity threats. In this area, research has only shown associations between feminine honor endorsement and support for aggression, under the premise that women use aggression to “restore” lost honor (see Foster et al., 2022), although an experimental design addressing this has not yet been conducted in the literature.

## Present research

Overall, a few things are increasingly clear. First, there is currently a lack of conclusive evidence regarding women's reactance to femininity threats. Some prior work suggests low reactivity to gender identity threats (Bosson & Vandello, 2013; Vandello et al., 2008), whereas other researchers have suggested otherwise (Chrisler, 2013; Benard, 2013). It is possible that women who endorse feminine honor norms may be contributing to these inconsistencies found in prior work. As detailed by recent research, women who endorse feminine honor norms appear to be particularly reactive to femininity threats (Chalman et al., 2021; Foster et al., 2022), although a direct test of this claim has not yet been conducted.

Therefore, we first sought to explore if women, in general, women respond to femininity threats, using an online false feedback paradigm. Second, we sought to explore if honor endorsing women tend to respond more strongly to femininity threats, and if they respond via aggressive behavior as has been suggested by recent work (Foster et al., 2022). We hypothesized that women who receive a femininity threat will display more negative affect and higher levels of reactive aggression intentions than women in a control or “femininity boost” condition. Furthermore, we hypothesized that these relationships will be stronger in those who more strongly endorse feminine honor norms.

## Method

### Participants

Participants were 305 women ( $M_{age} = 42.05$ ,  $SD = 13.48$ ) collected via CloudResearch (Litman et al., 2017). Participants were primarily White, non-Latina (71.5%)—the remaining participants identified as African American

(12.8%), Latina/Hispanic (6.2%), Asian (5.6%) or “Other” (3.9%). This study was IRB approved and adhered to APA ethical standards—all participants completed an informed consent document as well as a debriefing form with an option to delete their data if they wished for it not to be included in the dataset. Power analysis was conducted using G\*Power version 3.1 which determined that we had sufficient sample size needed to detect small effect sizes ( $f=0.20$ ,  $\alpha=0.05$ ,  $1-\beta=0.80$ ) for the one-way ANOVAs (necessary  $n=246$ ). For the interaction effect, we used the INTxPower application (Sommet et al., 2022) for a two-way factorial design, with the comparison between threat and control conditions as the first factor (small effect size) and the comparison between high honor and low honor as the second factor (large effect size). This estimate recommended an overall sample size of 297, deeming our sample size sufficient for simple slope tests.

## Procedure

Participants were told they would be completing a survey in Qualtrics about their “experiences as a woman, as well as views on various social circumstances”—the study was estimated to take 15–20 min to complete, and participants were paid \$2.05 upon completion. Participants first completed a series of pre-manipulation questionnaires and, upon reaching the manipulation, all participants received a prompt stating that they would be completing a measure of femininity to help the researchers determine the statistical stability of the measure. The prompt ended with:

Afterwards, you will be presented with how you scored overall, and on the 4 subscales of the measure in relation to the many other women across the country who have completed the questionnaire up to this point. In other words, you will be able to see how you scored in relation to a large number of women on certain aspects of femininity.

Participants then proceeded to complete a 24-item “Femininity Survey” which was entirely made up for purposes of the false-feedback paradigm. Items were designed to appear, on the surface, to pertain to traditional femininity, so as to convince participants that we were in fact measuring femininity. Items included “I don’t call people just to talk” and “I know that sometimes my clothes don’t match (and I don’t care)”. Once participants had completed the Femininity Survey, a page displayed which stated that “Please wait while our computer algorithm generates your scores. Once your score has been calculated, you will be automatically taken to the next page.”—this page automatically moved participants to the next page after 10 s.

At this point, Qualtrics randomly assigned participants into either a threat ( $n=101$ ), control ( $n=102$ ), or boost ( $n=102$ ) condition. Participants in all conditions were told to “recall that the results shown are your scores in comparison with all of the other women who have taken the survey you have just taken” and that they would receive scores on overall femininity as well as a for the main subscales of the survey. The subscales were labeled “sexual purity,” “motherly abilities,” “family loyalty,” and a neutral “economic” subscale. Participants received both a written description of their performance on the scale and a visual gauge of their performance.

Depending on the participant’s condition, the written description and gauge appeared different. In the threat condition, participants were told they scored in the 25th percentile of all other women. So, for the overall score, the written response stated “Overall Score: 25%. This means you scored significantly below average in comparison with women on the overall scale”, next to the picture below:

For the control condition, participants were told they scored in the 50th percentile, and received the picture below.

Finally, for the boost condition, participants were told they scored in the 75th percentile, and received the picture below:

After receiving their false feedback scores (1 “overall” score and 4 subscale scores), participants completed a series of questionnaires addressing their responses to the survey, intentions about those who created the survey, and affective responses to the manipulation.

Upon completion of the survey, participants were debriefed about the true nature of the survey and asked if they would allow their anonymous data to be included in the dataset, of which every participant indicated “yes”. Open-ended responses regarding the believability of the cover story demonstrated that all of the participants believed that the purpose of this survey was to, in some way, validate/test a femininity questionnaire that we were developing. All measures, manipulations, and exclusions in the study are disclosed, and no additional data was collected after the initial data analysis. The false feedback approach was modeled off of prior research using the precarious manhood framework to elicit gender identity threats in men and women (see Cheryan et al., 2015; Rudman et al., 2007; Valved et al., 2021; Vandello et al., 2008).

## Measures

*Feminine honor endorsement* Feminine honor endorsement was measured using a latent variable approach—a



**Fig. 1** Threat condition figure



**Fig. 2** Control figure

latent variable method has been used in recent research to better represent feminine honor endorsement, and also, in general, helps to minimize measurement error found in the observed feminine honor scales (Bollen, 2002; Foster et al., 2021a, b). More specifically, prior to the manipulation, we collected the 12-item Honor Ideology for Womanhood Scale ( $\alpha=0.93$ ; HIW; Barnes et al., 2014; “a respectable

woman knows that what she does reflects on her family name.”), the feminine honor subscale of Rodriguez Mosquera et al.’s (2002) Honor Concerns Scale ( $\alpha=0.92$ ; HC-Fem; asked participants to indicate how bad they would feel having a reputation of “being known as having many sexual contacts”), and the Honor Concerns Scale (HC) IJzerman and colleagues (2007) which assesses a general



**Fig. 3** Boost condition figure

sense of one's concern for honor ( $\alpha=0.88$ ; "I think that honor is one of the most important things that I have as a human being"). In order to create the latent feminine honor factor for our analysis, we entered the HIW, HC-Fem, and HC to exploratory factor analysis using principal axis as the extraction method. A single dominant factor emerged (eigenvalue=2.38) that explained 69.48% of the variability corresponding to the honor measures. All three indicators loaded significantly onto the latent factor (HIW=0.91, HC-Fem=0.84, HC=0.73). A regression method was used to estimate participant's scores on the latent factor that was extracted, which were then used as a predictor variable in the subsequent analysis.

**Hostility** To measure hostility, we collected the 21-item State Hostility Scale (Anderson & Carnagey, 2009). This scale prompted participants with "to what extent do you feel the following feelings at the current moment? I feel..." followed by items such as "...like I'm about to explode", "...aggravated", and "...burned up". Participants responded on a scale from 1 (*strongly disagree*) to 5 (*strongly agree*)—scores were averaged to create a mean hostility score. This was collected before ( $\alpha=0.97$ ) and after ( $\alpha=0.97$ ) the manipulation.

**Anger** To specifically assess anger, we asked participants "please indicate the extent to which you feel the following emotions in the present moment. – Anger" on a scale from 1 (*not at all*) to 5 (*extremely*). This was collected before and after the manipulation.

**Pride** To specifically assess pride, we asked participants "please indicate the extent to which you feel the following emotions in the present moment. – Pride" on a scale from 1 (*not at all*) to 5 (*extremely*). This was collected before and after the manipulation.

**Denial** After the manipulation, we assessed the extent to which participants denied the results of the femininity scale. This 3-item scale ( $\alpha=0.92$ ) included items such as "I do not think the results of the femininity survey are accurate" and "I think the results of the femininity survey are wrong"—participants responded on a scale from 1 (*strongly disagree*) to 7 (*strongly agree*). Scores were averaged to create a mean denial score.

**Insult** This 2-item scale ( $\alpha=0.93$ ; Spearman-Brown=0.94) assessed the extent to which participants agreed with statements directly insulting the intelligence of the survey creators. Participants responded to the items "I think the creators of the femininity survey are dumb" and "I think whoever created the femininity survey isn't very smart" on a scale from 1 (*strongly disagree*) to 7 (*strongly agree*). Scores were averaged to create a mean insult score.

**Fight intentions** This 2-item scale ( $\alpha=0.84$ ; Spearman-Brown=0.85) assessed the extent to which participants indicated they would like to fight the creators of the survey. Participants responded to the items, "I'd like to fight the creators of the femininity survey" and "I'd like to give the creators of the femininity survey a piece of my mind" on a

scale from 1 (*strongly disagree*) to 7 (*strongly agree*). Scores were averaged to create a mean fight intentions score.

*Support for firing* Participants were asked the extent to which they think felt the creators of the survey should be fired. This was done in a less direct and more direct fashion. Less directly, participants were asked the extent to which they agreed with a 3-item scale ( $\alpha=0.95$ ), including items such as “I think the creators of the femininity survey should get fired” and “I think the creators of the femininity survey don’t deserve to be doing research” on a scale from 1 (*strongly disagree*) to 7 (*strongly agree*). Scores were averaged to create a mean support for firing score. We also included a single dichotomous item which began with the following prompt:

*As managers of the survey production team, we are able to take into account participant responses as a way to judge the quality of our team’s work. One way we do this is by asking participants if they think the survey creators have done a good job- if enough participants indicate “No”, the survey creators will be removed from future projects, which will subsequently limit the amount of money they will be paid for creating new surveys. Do you feel the survey creators of the femininity survey have done a good job?*

Participants responded to this prompt with either a “yes” (0) or “no” (1), with “no” responses intended to represent support for firing/removing the creators from their future projects and limiting their income.

In addition to these variables, we also collected Buss and Perry’s (1992) 29-item General Aggression Questionnaire ( $\alpha=0.94$ ) as a covariate, to remove any potential confound with generally aggressive individuals in our sample. Data is available on request from the first author.

### Results

Descriptive statistics and bivariate correlations can be found in Table 1. In order to ensure that affective states did not significantly differ prior to our manipulation, we conducted a one-way ANOVA with condition as the factor and the pre-manipulation hostility, anger, and pride variables as outcomes. None of the omnibus tests were significant,  $F_s(2) < 1.83$ ,  $p_s < 0.180$ , indicating that participants did not differ on our affective variables prior to the manipulation.

**Table 1** Means, standard deviations, and bivariate correlations for the variables of interest

Variable	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	M	SD
1. Honor	-	-0.08	0.28*	0.23*	0.33*	0.31*	0.28*	0.31*	-0.09	0.17*	0.25*	0.24*	-0.08	0.00	0.95
2. Cond.		-	-0.09	-0.08	-0.05	-0.20*	-0.18*	0.11*	-0.33*	-0.32*	-0.33*	-0.21*	-0.29*	0.003	0.82
3. Neg. <sup>a</sup>			-	0.84*	0.08	0.84*	0.69*	0.21*	0.04	0.34*	0.45*	0.57*	-0.10	1.51	0.78
4. Ang. <sup>a</sup>				-	0.08	0.76*	0.70*	0.20*	0.03	0.36*	0.46*	0.56*	-0.06	1.40	0.87
5. Prd. <sup>a</sup>					-	0.13*	0.17*	0.70*	-0.12*	0.06	0.10	0.15*	-0.15*	2.65	1.35
6. Neg. <sup>b</sup>						-	0.83*	0.10	0.16*	0.42*	0.51*	0.56*	-0.01	1.49	0.80
7. Ang. <sup>b</sup>							-	0.09	0.19*	0.44*	0.50*	0.51*	0.04	1.41	0.89
8. Prd. <sup>b</sup>								-	-0.30*	-0.01	0.05	0.18*	-0.25*	2.46	1.37
9. Deny									-	0.38*	0.32*	0.12*	0.49*	4.84	1.78
10. Insult.										-	0.85*	0.61*	0.34*	2.55	1.83
11. Fire <sup>1</sup>											-	0.74*	0.24*	2.26	1.76
12. Fight												-	-0.01	1.82	1.44
13. Fire <sup>2</sup>													-	0.34	0.47

Note:  $N=305$ ; \*  $p < .05$ . <sup>a</sup> administered pre-manipulation. <sup>b</sup> administered post-manipulation. Cond. = Condition. Neg. = Negative Affect. Ang. = Anger. Prd. = Proud. Deny = Denial. Insult = Insult. Fire<sup>1</sup> = Support for Firing. Fire<sup>2</sup> = Dichotomous Firing Variable. General Aggression Scale linked with post-manipulation anger, hostility, insult, support for firing, and fight variable at  $p < .05$

## Manipulation effects

One of our focal analyses was to test if women, in general, were significantly impacted by the femininity threat. Therefore, we elected to run a repeated measures 3 (condition) x 2 (time point, pre/post manipulation) ANOVA for each of the affective outcomes. The omnibus test for the interaction between time and condition was significant for all three affect outcomes,  $F_s(2) > 1.05$ ,  $p_s < 0.010$ . Pairwise comparisons were conducted using the Tukey correction for multiple comparisons. The pairwise comparisons showed that those in the threat conditions experienced more post-manipulation hostility than those in the control conditions ( $M_{threat} = 1.75$ ,  $SD_{threat} = 0.08$ ;  $M_{control} = 1.46$ ,  $SD_{control} = 0.08$ ;  $p = .038$ ), although no significant differences were found for the anger or pride outcomes ( $p_s > 0.302$ ). None of the pairwise comparisons between control and boost conditions were significant (all  $p_s > 0.583$ ). The pairwise comparisons between threat and boost were significant for hostility ( $M_{threat} = 1.75$ ,  $SD_{threat} = 0.08$ ;  $M_{boost} = 1.48$ ,  $SD_{boost} = 0.08$ ) and anger ( $M_{threat} = 1.55$ ,  $SD_{threat} = 0.08$ ;  $M_{boost} = 1.28$ ,  $SD_{boost} = 0.08$ ; all  $p_s < 0.047$ ), but not pride ( $p = .809$ ). Next, we ran a multiple regression analysis for each of the aggression outcomes, with two dummy-coded condition variables for threat and boost (dummy code 1: threat = 1, control = 0, boost = 0); dummy-code 2: threat = 0, control = 0, boost = 1) predicting the outcome variables while controlling for the General Aggression Scale. Regression outcomes showed a significant effect of the threat condition on the denial ( $b = 0.86$ ,  $p < .001$ ), insult ( $b = 0.96$ ,  $p < .001$ ), support for firing ( $b = 0.90$ ,  $p < .001$ ), fight ( $b = 0.37$ ,  $p = .033$ ), and dichotomous fire outcomes ( $\beta = 0.21$ ,  $p = .001$ ). The effect of the pride condition was significant for the denial ( $b = -0.58$ ,  $p = .015$ ), support for firing ( $b = -0.49$ ,  $p = .025$ ), and fight outcomes ( $b = -0.37$ ,  $p = .032$ ). General aggression was a significant covariate in the insult, support for firing, and fight outcomes ( $b_s > 0.42$ ,  $p_s < 0.001$ ), but not the denial or dichotomous firing outcomes ( $|b|s < 0.05$ ,  $p_s > 0.222$ ). This evidence suggests only a limited affective response by women, in general, to the femininity threat, but a consistent response in regard to the aggression outcomes.

## The modifying effect of honor on manipulation outcomes

Next, we sought to examine if feminine honor endorsement significantly impacted the effect of a femininity threat manipulation on the various affective and aggression outcomes. Therefore, for our affect variables, the post-manipulation affect scores were entered as dependent variables in a series of regression analyses which entered feminine honor, condition, and the honor\*condition interaction into a single model while controlling for the pre-manipulation affect score, the General Aggression Scale (Buss & Perry, 1992), and education levels—condition variables were toggled between the two dummy-coded variables to estimate interactions for the threat effect and the boost effect. We ran similar regression analyses for the aggression outcomes while controlling for the General Aggression Scale, as no other specific pre-manipulation aggression score was collected. We conducted these moderation analyses in the PROCESS macro (Hayes, 2017) for SPSS version 28.0.

A summary of regression effects can be found in Table 2. Results from this series of analyses revealed significant honor\*threat interaction terms for the hostility and pride outcomes ( $b_s = 0.15$  and  $-0.25$ , respectively,  $p_s < 0.046$ ), but not the anger outcome ( $b = 0.13$ ,  $p = .106$ ). Simple slope analyses were conducted to test the significance of the slope at low ( $-1 SD$ ) and high feminine honor endorsement ( $+1 SD$ ) values. For hostility, results showed a significant effect of the threat condition on post-manipulation hostility for high honor participants ( $b = 0.38$ ,  $p < .001$ ), but not low honor participants ( $b = 0.09$ ,  $p = .176$ ). For pride, results showed a significant effect of condition on post-manipulation pride for high honor participants ( $b = -0.59$ ,  $p < .001$ ), but not low honor participants ( $b = -0.12$ ,  $p = .493$ ). Although the interaction was not significant for anger, results did show a significant effect of condition on post-manipulation anger for high honor participants ( $b = 0.38$ ,  $p < .001$ ), but not low honor participants ( $b = 0.12$ ,  $p = .184$ ). A visual representation of these differences between low and high-honor participants can be found in Fig. 4 (hostility), Fig. 5 (anger), and Fig. 6 (pride). For the effect of the boost condition, the honor\*boost interaction terms were significant for hostility ( $b = -0.16$ ,  $p = .003$ ), but not for anger or pride ( $b_s$

**Table 2** Summary of the effects of condition, honor, and their interaction on the affect difference scores and post-manipulation outcomes

Variable	Hostility	Anger	Pride	Denial	Insult	Fight Intent	Support Firing	Dichot. Fire
Condition	-0.13*	-0.14*	0.26*	-0.74*	-0.69*	-0.36*	-0.66*	-0.85*
Honor	0.10*	0.10*	0.13*	-0.25*	0.21*	0.24*	0.32*	-0.29*
Interact	-0.11*	-0.07	0.15*	-0.60*	-0.24	-0.12	-0.37*	-0.35*
Aggress	0.04	0.11*	0.05	0.06	0.40*	0.58*	0.48*	-0.13
Pre-Score	0.79*	0.61*	0.70*	N/A	N/A	N/A	N/A	N/A
$R^2$	0.77	0.54	0.53	0.19	0.19	0.30	0.28	0.10

Note:  $N = 305$ . \*  $p < .05$ . Pre-Score refers to pre-manipulation affect scores for the referenced variable



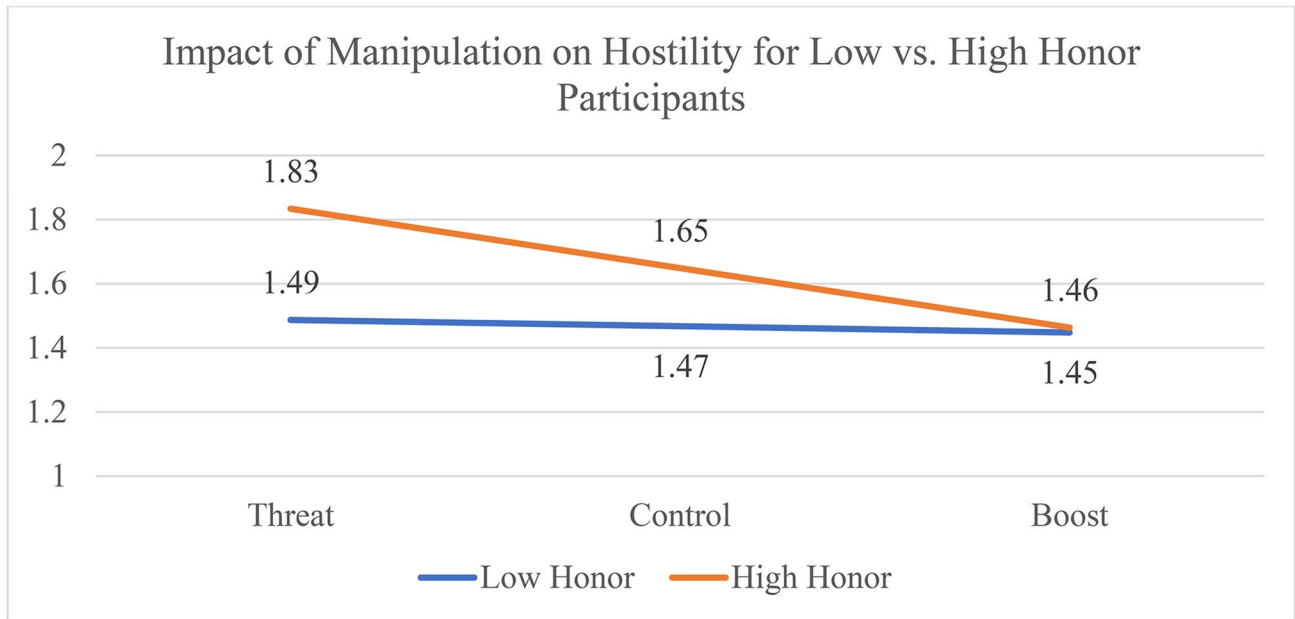


Fig. 4 The impact of the manipulation on hostility for low vs. high honor participants

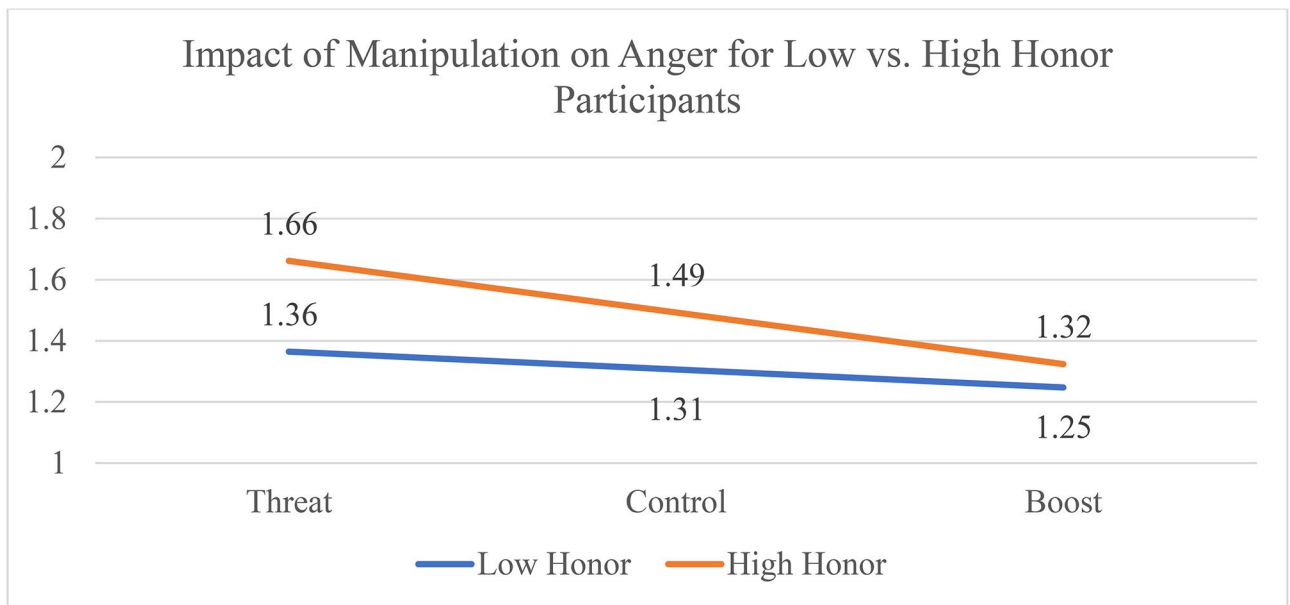
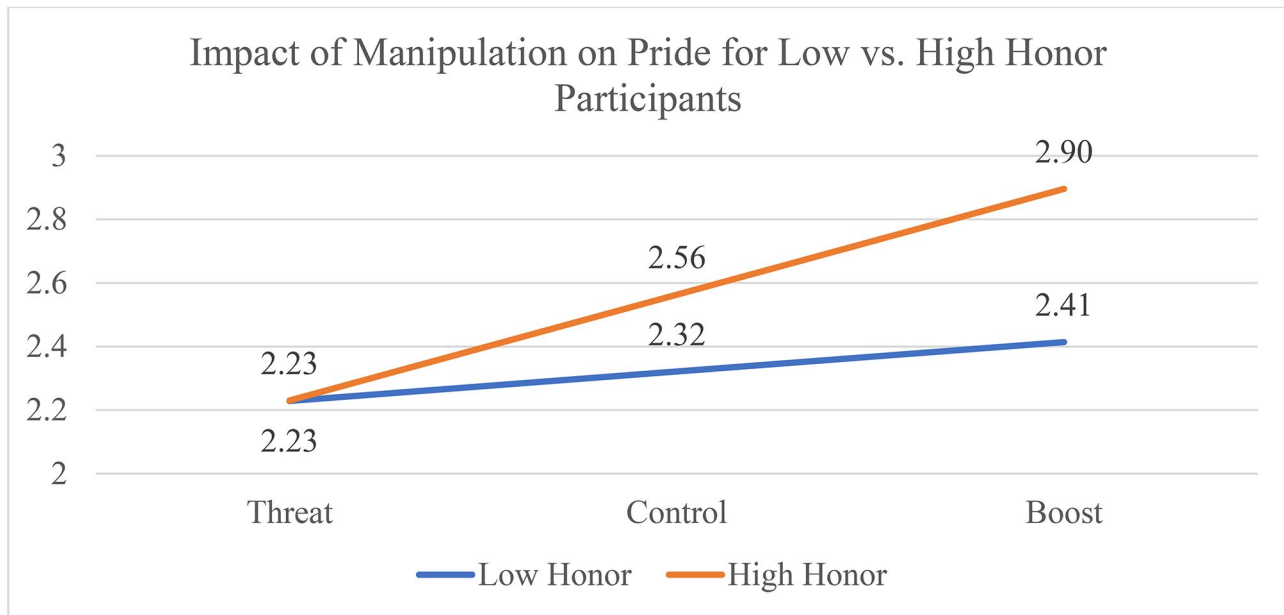


Fig. 5 The impact of the manipulation on anger for low vs. high honor participants

= -0.08 and 0.22, respectively,  $ps > 0.082$ ). For hostility, results showed a significant effect of the boost condition on post-manipulation hostility for high honor participants ( $b = -0.28, p < .001$ ), but not low honor participants ( $b = 0.02, p = .716$ ). Although the interaction was not significant for anger or pride, results did show a significant effect of condition on post-manipulation anger for high honor participants ( $b = -0.23, p = .038$ ), but not low honor participants ( $b = -0.07, p = .525$ ). A similar pattern emerged for pride which

showed a significant effect of condition on post-manipulation pride for high honor participants ( $b = 0.61, p < .001$ ), but not low honor participants ( $b = 0.20, p = .233$ ).

As for the remaining post-manipulation aggression outcomes, we ran similar moderation analyses to detect if honor moderates the links between threat/boost conditions and the denial, insult, fight intentions, support for firing, and the dichotomous firing outcome, while controlling for the General Aggression Scale. Analyses revealed significant



**Fig. 6** The impact of the manipulation on pride for low vs. high honor participants

interactions terms for the denial and support for firing outcomes ( $|b|s > 0.59$ ,  $ps < 0.003$ ), but not the insult outcome ( $b = 0.36$ ,  $p = .059$ ), the fight outcome ( $b = 0.10$ ,  $p = .509$ ), or the dichotomous firing outcome ( $b = 0.47$ ,  $p = .086$ ). Decomposition of the interactions terms revealed significant simple effects. For the denial outcome, condition predicted denial scores, but only for those high in honor endorsement ( $b = -1.84$ ,  $p < .001$ ). For the support for firing outcome, the significant interaction term revealed an impact of threat on both low and high honor groups, but the effect was stronger for high honor individuals (all  $ps < 0.046$ ). For the insult and dichotomous firing outcome, effects were significant for both low and high honor subgroups (all  $ps < 0.025$ ).

For the effect of the boost condition, effects emerged for the denial outcome and the support for firing outcome ( $bs > -0.56$ ,  $ps < 0.006$ ). Significant effects were found for the effect of the boost condition on post-manipulation denial for high honor participants ( $b = -2.13$ ,  $p < .001$ ), but not low honor participants ( $b = -0.06$ ,  $p = .838$ ), and a significant effect of the boost condition on post-manipulation support for firing for high honor participants ( $b = -1.44$ ,  $p < .001$ ), but not low honor participants ( $b = -0.38$ ,  $p = .144$ ). For the dichotomous firing outcome, the insult, and the fight outcomes, the interaction term was not significant ( $bs > |0.25|$ ,  $ps > 0.109$ ). For the dichotomous firing outcome and the insult outcome, effects were significant for both low and high honor subgroups ( $bs = |0.57|$ ,  $ps < 0.046$ ). For the support for firing outcome, effects were significant for high honor participants ( $bs = -1.45$ ,  $p < .001$ ) but not low honor participants ( $b = -0.38$ ,  $p = .144$ ). A summary of all

the effects can be found in Table 3, and visualizations of the effects for each outcome may be found in the Supplemental File.

## Discussion

Prior research has suggested that women are relatively non-reactive to gender identity threats. Recent work, however, provides evidence that women who endorse the norms and values of cultures of honor may aggress in response to reputation threats, though in ways potentially different from honor-endorsing men (relational as opposed to physical aggression; Foster et al., 2022). Using an online false-feedback paradigm, the present research gave women feedback about their “femininity scores” on a bogus femininity scale. Results showed that women high in feminine honor endorsement reacted to the femininity threat manipulation for all eight outcomes (e.g., hostility). In contrast, a significant effect of the manipulation was found for low honor participants in five of the eight outcomes—interestingly, none of these outcomes in low honor participants were affective in nature, only involving the aggression outcomes (i.e., the support for firing outcome, the dichotomous firing outcome, the fight outcome, and the insult outcome). These findings provide evidence that feminine honor endorsement may introduce considerable variability into the extent to which women respond to gender identity threats. In other words, this evidence bridges a critical gap between two literatures—the literature surrounding the *precarious manhood*

**Table 3** Summary of the effect of condition on the post-manipulation outcomes moderated by feminine honor

Predictor	Outcome	Low Honor Effect			High Honor Effect		
		<i>b</i>	<i>SE</i>	<i>p</i>	<i>b</i>	<i>SE</i>	<i>p</i>
Threat	Denial	0.45	0.29	0.122	1.84	0.28	<0.001
	Insult	0.81	0.29	0.006	1.49	0.28	<0.001
	Fight Intentions	0.43	0.21	0.045	0.63	0.20	0.003
	Support for Firing	0.54	0.27	0.045	1.65	0.26	<0.001
	Dichotomous Fire	0.80	0.36	0.025	1.69	0.38	<0.001
Boost	Denial	-0.06	0.28	0.838	-2.13	0.29	<0.001
	Insult	-0.57	0.29	0.047	-1.25	0.30	<0.001
	Fight Intentions	-0.29	0.20	0.157	-0.77	0.21	<0.001
	Support for Firing	-0.38	0.26	0.144	-1.45	0.28	<0.001
	Dichotomous Fire	-0.84	0.37	0.023	-1.75	0.51	<0.001

Note:  $N=305$

model, which posits women's relative lack of reactivity to gender identity threats (Vandello et al., 2008), and the literature involving cultures of honor, which shows some women are more reactive to femininity threats than previously suggested (Chalman et al., 2021; Foster et al., 2022).

These findings add to a growing body of work suggesting the role feminine honor endorsement plays in various outcomes. While work has been done implicating feminine honor as a predictor of preventive health behaviors (Foster et al., 2021a, b; Gul et al., 2021), this work more closely supports and extends the findings of both Chalman et al. (2021) and Foster et al. (2022) which imply a sensitivity to femininity threats in honor endorsing women. We feel this has important implications for a wide range of outcomes. For example, recent work has suggested higher levels of domestic abuse in cultures of honor (see Dietrich & Schuett, 2013). If one assumes that men in relationships use aggression to reestablish their honor when they feel their partner has damaged it, one might consider if women in relationships may engage in behaviors which utilize this maladaptive approach as well. Future research should consider this possibility in both heterosexual and same-sex relationships.

While the evidence presented here certainly suggests that honor endorsing women are particularly reactive to femininity threats, four of eight outcomes captured effects for the low honor participants. One could arguably classify some of these outcomes (i.e. insult, support for firing, the dichotomous firing outcome) as passive or indirect aggressive responses to the threat manipulation. This effect would then be consistent with the work of Severance et al. (2013), who found that passive aggression is viewed in dignity cultures (often portrayed as a conceptual “opposite” of honor cultures) as indirect aggression—if those in dignity cultures do not need to assert their status to maintain their self-worth, indirect aggression is likely viewed as sufficient to express their potential frustrations. However, low honor participants

did still show heightened endorsement of the fight outcome in response to threat, which is certainly not passive in nature. One might ultimately consider if the responsiveness to threat between low and high honor participants is not so much regarding the existence or nonexistence of an effect, but merely the strength of such an effect.

It may also be that the nature of the outcome variable determines whether women demonstrate threat reactivity or not. The fact that only high honor participants displayed affective responses to the manipulation suggests that honor endorsing women have more of the affective “fuel” which pushes these behavioral intentions into action—this would be consistent with work showing heightened physiological anger responses in honor endorsing men (Cohen et al., 1996), and work suggesting that hostility, anger, and pride are commonly-found honor-specific emotions (Mosquera et al., 2000; Somech & Elizur, 2012). For low honor endorsing women, perhaps the aggression outcomes being primarily behavioral intentions, as opposed to actual, real-world behavior, allowed them to safely express their frustration via the prompts provided. After all, claiming you are prepared to fight does not necessarily mean you will engage in such behavior. Future research should explore the role affect may play in motivating honor endorsing women's aggressive responding, and see if behavioral measures may illuminate how these threat responses play out in real-world scenarios.

One limitation of the current findings is that our manipulation specified three femininity aspects (motherhood, sexual purity, and loyalty) and it is, therefore, impossible to determine which of these factors is the largest contributor to our findings. While we do agree that this does introduce some ambiguity into the findings, we feel this approach also allowed for a wider-reaching approach to the femininity manipulation, to account for participants who may show variability in which particular aspect of femininity is

more critical to their self-concepts. Furthermore, we feel our approach to the gender identity threat manipulation mirrors that of Vandello et al.'s (2008) Study 4, while minimizing the range of topics from 16 down to three, perhaps strengthening the support for our findings. It is also possible some women saw the control condition (scoring around the 50% mark on “femininity”) as somehow negative or positive. Although outcomes such as pride show that the control condition scores ( $M=2.45$ ) sit roughly in the middle of the threat ( $M=2.26$ ) and boost ( $M=2.66$ ) conditions, future research should consider a “true control” condition where no feedback is given.

One should also note that these findings were explored on an exclusively U.S. sample—honor cultures exist all over the world, and these responses may differ with women from different cultures of honor which are often embedded in broader cultural frameworks, such as individualism/collectivism. Our findings also did not utilize a true behavioral outcome. Although we feel we achieved our primary goal of investigating whether or not women, in general, and honor endorsing women, specifically, react to femininity threats, we were not able to include pure behavioral evidence that women would physically react to this sense of threat. Future research should consider investigating more realistic threat outcomes. For example, one might use specific online threat paradigms to measure reactive aggression as has been done in recent aggression and honor research (see Günsoy et al., 2020; Law et al., 2012), or perhaps utilize a similar stress hormone measurement (i.e. cortisol measures) as is found in the classic Cohen et al. (1996) honor studies on men.

Research on aggression is wide-reaching, and has provided much useful insight into how and why individuals aggress. This work extends the specific research area of female-perpetrated aggression by demonstrating a certain level of reactivity by some women, and a strong level of reactivity by those who endorse feminine honor norms. Work should continue to develop these concepts and explore the nuances of these relationships.

**Supplementary Information** The online version contains supplementary material available at <https://doi.org/10.1007/s12144-023-04875-9>.

**Acknowledgements** The authors would like to thank Jazzmine Cross for her contributions to the current article.

**Authors' contributions** Stephen Foster: Conceptualization, methodology, formal analysis, writing-original draft, writing-review & editing, Jarrod Bock: Conceptualization, methodology, writing-review & editing.

**Funding** No funding was received to assist with the preparation of this manuscript.

**Data Availability** The data that support the findings of this study are

available from the corresponding author upon request.

## Declarations

**Ethics approval and consent to participate** All participants completed informed consent documents prior to completing the study, and the study received approval from an Institutional Review Board.

**Consent for publication** All authors agree to consent to submit this article for publication.

**Competing interests** The authors have no relevant financial or non-financial interests to disclose.

**Human and animal ethics** The current study adhered to all ethical principles for human subjects research as set out by the APA.

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