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Examining the Effects of Different Gender Awareness-Raising Frames on Attitudes Toward Women and Gender Equality

Andreea A. Constantin  | Isabel Cuadrado 

University of Almería, Almería, Spain

Correspondence: Andreea A. Constantin (ac125@ual.es)

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ABSTRACT

According to recent research, the impact of awareness-raising interventions about gender (in)equality depends on how messages are framed. Extending previous work, we conducted an experimental study ($N = 1093$; 50% women) to examine whether the combination of two frames about gender (in)equality (emphasizing the achievement of gender equality and the persistence of gender inequality) had more positive effects on attitudes toward women and gender equality of women and men than each framing individually. Additionally, we considered the mediating role of identity threat and cognitive unfreezing, and the moderating role of participants' neosexism and feminist identification. The results showed that the combined frame, compared to the gender inequality persistence-frame, reduced identity threat and improved attitudes toward women and gender equality solely among women. We also found that the combined framing, compared to the equality framing, increased cognitive unfreezing and improved women's and non-sexist men's attitudes toward women and gender equality. However, for non-sexist women, this framing was less beneficial than the inequality framing. In conclusion, the present study highlights the need to examine both the possible mechanisms involved and the gender ideology of individuals whenever interventions targeting gender equality are designed.

1 | Introduction

Advancing gender equality is one of the 17 United Nations Sustainable Development Goals since it is critical to all areas of a healthy society. Consequently, numerous initiatives and interventions targeting gender equality have been carried out over the last few decades. One strand of work has focused on gender awareness raising, that is, initiatives aimed at “increasing general sensitivity, understanding, and knowledge about gender (in)equality” (European Institute for Gender Equality, EIGE, 2024, p. 3). Research conducted from this perspective (e.g., Cuadrado et al. 2024; Doolaard et al. 2022; Moss-Racusin

et al. 2018; Subašić et al. 2018) has concentrated on finding effective ways to communicate information on key gender (in)equality topics (e.g., the negative consequences of gender discrimination) to stimulate attitudinal and social change. For example, Moss-Racusin et al. (2018) found that exposing participants to an intervention based on providing evidence of gender discrimination in different formats increased awareness and improved gender attitudes, yet Doolaard et al. (2022) showed that evidence of sexism had a detrimental effect on women. Subašić et al. (2018) found that framing gender equality as a common cause, rather than a women's issue, can be a catalyst for men's solidarity.

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Although these studies have shown that highlighting aspects related to either gender inequality or gender equality affects people's attitudes, they have not directly tested the contrasting effects of initiatives that address gender inequality versus those that address gender equality. In this vein, recent research (Cuadrado et al. 2024) has highlighted that different framings of gender (in)equality—either as the achievement of gender equality or the persistence of gender inequality—have different effects on women and men, due to the involvement of different psychological mechanisms (identity threat and cognitive unfreezing). Furthermore, the effects varied depending on the level of neosexism and feminist identification of the participants.

Through two experimental studies, these authors found that identity threat negatively affected evaluations toward women—measured by the dimensions of morality, immorality, competence, and sociability—as well as attitudes toward gender equality—measured by the rejection of affirmative actions, support for a zero-sum perspective of gender status, and openness to information about gender inequality. On the contrary, cognitive unfreezing positively affected these evaluations and attitudes.

Study 1 revealed that, for women, regardless of their level of neosexism or feminist identification, both emphasizing the achievement of gender equality and, especially, the persistence of gender inequality (vs. control condition) led to higher cognitive unfreezing, but the gender inequality frame also activated more identity threat. For men, the effect was contingent on feminist identification: for those with low feminist identification, both the inequality-persistence and the equality-achievement framing (vs. control) threatened their identity. In contrast, for men with high feminist identification, the gender equality framing (vs. control) decreased their identity threat.

Study 2 replicated the results of Study 1 for women regarding the inequality-persistence framing. Moreover, it was found that the equality-achievement framing (vs. control) activated cognitive unfreezing (but to a lesser extent than inequality) and reduced identity threat. For men, the effects were contingent on neosexism and feminist identification. For those with low neosexism, the inequality-persistence framing (vs. control) led to more cognitive unfreezing, whereas for those with high feminist identification or low in neosexism, the equality-achievement framing (vs. control) reduced their identity threat.

The authors concluded that the most effective framing for raising awareness of gender (in)equality would depend on whether the framing evokes identity threat or cognitive unfreezing and on individual differences in gender ideology. They also recommend exploring whether an intervention with the equality-achievement and the inequality-persistence frameworks combined could benefit from the strengths of both approaches by counteracting the threatening aspects of the inequality-persistence framing while prompting higher levels of cognitive unfreezing than the equality-achievement framing.

Indeed, a dual message that combines both frames would be closer to reality, as in real life people often face different

competing perspectives on an issue. Considering ecological validity, a growing body of research has examined the effect of dual frames on perception, attitudes, and decision-making (e.g., Detenber et al. 2018). These studies have focused mainly on the effect of dual competing frames (Chong and Druckman 2010; see also Petty and Wegener 1998). These findings suggest that this type of frame could have either no effect (Sniderman and Theriault 2004), a small effect on attitudes compared to a baseline (Amsalem and Zoizner 2022), or could place the perceiver in an intermediate position relative to the one expressed when the frames comprised in the dual frame are presented separately (Detenber et al. 2018). However, frames with different emphases that share a common goal (e.g., improving attitudes toward women and gender equality) could be complementary and mutually reinforcing (Wise and Brewer 2010), leading to stronger effects in combination than in isolation. In addressing the issue of gender equality and the situation of women in contemporary societies, different aspects can be emphasized to motivate individuals to engage in social change: the negative consequences of the gender inequality persistence or the positive consequences of the progress achieved toward gender equality. Awareness raising of the negative consequences of gender inequality implicitly points to gender equality as an alternative. Thus, combining the two frames would provide information on both the negative impact of the problem (i.e., gender inequality) and the positive impact of the solution (i.e., gender equality).

The present study aims to test the effectiveness of a frame that combines the two frames proposed by Cuadrado et al. (2024)—the inequality persistence and the equality achievement—considering the two frames independently as anchoring points of comparison. Following the work developed by these authors, we will examine the process underlying the effects considering the mediating role of identity threat and cognitive unfreezing, and the moderating role of neosexism and feminist identification. Specifically, we will examine the effect and the mechanisms through which the combined frame affects evaluations of women. Recent theoretical and empirical research on social perception (e.g., Abele et al. 2021; Koch et al. 2024) has shown that adopting a multidimensional perspective on the components of social perception facilitates a more nuanced and profound comprehension of how groups are evaluated. Consequently, we will examine how women are perceived in terms of morality, sociability, competence, and immorality. In addition, we will assess the effect of the combined frame on broader gender-related attitudes (e.g., rejection of affirmative actions).

Regarding the effect of the combined frame relative to each single one, based on the revised literature, we expect it could mitigate the threatening aspects of the gender inequality-persistence framing while eliciting higher levels of cognitive unfreezing than the gender equality-achievement frame. Furthermore, based on the findings of Cuadrado et al. (2024), we expect cognitive unfreezing to improve participants' evaluation of women (i.e., higher perceived morality, sociability, and competence, and lower perceived immorality) and of broader gender-related attitudes (e.g., rejection of affirmative actions), whereas identity threat is expected to have the opposite effect.

2 | Methods

2.1 | Participants

Spanish participants were recruited among a sample of national survey panelists. After removing duplicates, incomplete surveys, participants who did not identify as either a man or a woman and those who failed reading and attention checks ($n = 612$), a total of 1093 of the recruited participants completed the questionnaire (women: $n = 547$; men: $n = 546$). The participants' age ranged from 18 to 65 years (women: $M = 43.78$, $SD = 11.61$; men: $M = 51.10$, $SD = 9.42$). Most of the participants (93.2%) were born in Spain, 94.3% had Spanish nationality, 79.2% were active workers, and 53.2% had completed university. The participants self-located around the left-center of the political orientation scale (women: $M = 2.69$, $SD = 0.82$; men: $M = 2.70$, $SD = 0.83$), ranging from 1 (*extreme left*) to 5 (*extreme right*).

We conducted separate sensitivity analyses for women and men samples using G*Power (Faul et al. 2007) to determine the effect size that the current study could detect with $\alpha = 0.05$ and $1 - \beta$ (power) = 0.80. For an ANOVA with three groups, the minimum effect size was $f = 0.13$ ($\eta_p^2 = 0.017$) for both women and men samples. For a multiple regression with two tested predictors for the interaction term and a total of five predictors, the minimum effect to be detected was $f^2 = 0.018$, ($\Delta R^2 = 0.018$), for both men and women samples.

2.2 | Procedure

Participants accessed an online questionnaire designed in Qualtrics. Upon their access, they were informed that they would participate in a study regarding social perception of different groups and their consent was requested. Next, they completed the scales of neosexism and feminist identification, and they were randomly assigned to read a text corresponding to one of three experimental conditions (gender inequality persistence, gender equality achievement or the combined condition) and to summarize the information. In the combined condition the participants were asked to read the following text, which included simultaneously the text from the other two conditions extracted from Cuadrado et al. (2024):

Recent official data from different public institutions, such as the Spanish National Institute of Statistics and the International Labour Organization (ILO), reveal that the inequality between men and women in the Spanish workplace is still very present. For example, the data support that nowadays: 1) Women earn an average of 22% less than men for performing the same job and have more difficulties in reconciling family and work life; 2) The presence of women in positions of power is significantly lower than the presence of men; 3) Women are those who perform to a greater extent precarious jobs (part-time and temporary contracts) and/or jobs related to caring for others.

However, the data also reveal that the incorporation of women into the Spanish labor market over the last few decades has had a very positive effect on the Spanish society in general, especially concerning the achievement of real equality between men and women. For example, the data support that the incorporation of women into the labor market: 1) Promotes greater autonomy and economic independence for women; 2) Contributes to the modification of traditional gender roles (female caretaker, male worker); 3) Facilitates the development of more egalitarian relations between men and women.

Following the manipulation, the participants were asked to complete a reading check item (asking participants to identify the response option related to the text they had read) and if they responded correctly, they were presented with the measures of the study. Upon completion, they were thanked and debriefed. Participation in the study was voluntary and anonymous. Materials, data, and codebook are available at https://osf.io/pvw8c/?view_only=0c84ce5de08744f4acc1af3958f36613.

2.3 | Measures

We used the same measures as Cuadrado et al. (2024), which were presented in the following order. All measures used a five-point response scale ranging from 1 (*nothing/strongly disagree*) to 5 (*very much/strongly agree*).

Neosexism was assessed with the Spanish adaptation of the 11-item scale of Moya and Expósito (2001) of the Neosexism scale (Tougas et al. 1995). For example, "Discrimination against women in the labor force is no longer a problem in Spain" (women: $\alpha = 0.76$; men: $\alpha = 0.83$).

Feminist identification was measured with two items from Estevan-Reina et al. (2020; e.g., "To what extent do you identify with feminists?" [women: $r(545) = 0.92$, $p < 0.001$; men: $r(544) = 0.92$, $p < 0.001$].

Subsequently, participants read the assigned text (experimental manipulation) and completed the following measures.

Identity threat was measured using a 3-item scale (e.g., "The information I have just read threatens my worldview"; women: $\alpha = 0.89$; men: $\alpha = 0.81$) adapted by Cuadrado et al. (2024) from Hameiri et al. (2018).

Cognitive unfreezing was also measured with a 3-item scale (e.g., "To what extent did the information you just read make you reevaluate your beliefs regarding the fight for equality between women and men"; women: $\alpha = 0.92$; men: $\alpha = 0.93$) from Cuadrado et al. (2024) based on Hameiri et al. (2018).

Openness to information about gender inequality was measured with two items assessing the extent to which the participants were willing to be exposed to information (e.g., movies, flyers, television programs, banners) about inequality between men and women; and personally meet women who have suffered

situations of discrimination and listen to their opinions about the subject [women: $r(545) = 0.71$, $p < 0.001$; men: $r(544) = 0.62$, $p < 0.001$].

The zero-sum perspective of gender status was measured with the 7-item scale of Ruthig et al. (2017) (e.g., “The more power women gain, the less power men have”) and an additional item (“More decision-making power in the workplace for women means less decision-making power for men in the workplace”). Women: $\alpha = 0.89$; men: $\alpha = 0.93$.

Evaluation of women was measured with nine items adapted by López-Rodríguez et al. (2013) from Leach et al. (2007) to evaluate morality (honest, sincere, trustworthy; women: $\alpha = 0.85$; men: $\alpha = 0.86$), sociability (likable, friendly, warm; women: $\alpha = 0.84$; men: $\alpha = 0.84$), and competence (competent, intelligent, skillful; women: $\alpha = 0.83$; men: $\alpha = 0.86$) and three items (Sayans-Jiménez et al. 2017) assessing immorality (malicious, treacherous, false; women: $\alpha = 0.87$; men: $\alpha = 0.88$). An attention check item (to select the number two) was included among these items.

Rejection of affirmative actions was measured with the 7-item scale developed by Case (2007) (e.g., “Affirmative actions causes men to lose jobs that should be theirs”) and an additional item (reversed) from the scale of general attitudes toward affirmative actions developed by Tougas et al. (1995) (women: $\alpha = 0.78$; men: $\alpha = 0.83$).

The sociodemographic variables included the participants’ gender, age, level of education, main occupation, birth country, nationality, and political orientation.

2.4 | Data Analysis

Following Cuadrado et al. (2024), we conducted all the analyses separately for men and women. Preliminary analyses examined using ANOVAs the main effect of the manipulation on identity threat and cognitive unfreezing, and whether these effects were moderated by participants’ level of feminist identification or neosexism using the Model 1 from the PROCESS macro for SPSS (Hayes 2022). The results of these analyses are presented in Supporting Information: S1. The main analyses examined the process underlying the effect of the manipulation on attitudes toward women and gender equality. Concretely, using PROCESS we tested the indirect effect of the combined condition relative to each one of the other two conditions on the outcome variables via identity threat and cognitive unfreezing acting as parallel mediators. Considering that the effect of the manipulation on cognitive unfreezing was moderated by neosexism (see Supporting Information: S1), the model was customized, and the moderation was included in the model. Thus, the resulting model included the indirect effect of the manipulation via cognitive unfreezing moderated by neosexism, and the indirect effect of the manipulation via identity threat. The relative effects were defined with the indicator coding system considering the combined condition as the reference group, coded as (0), and each experimental condition coded as (1). To make inferences about the effects, 5000 bootstrap samples were used to estimate 95% percentile confidence intervals. The effects are significant when the 95% CI does not include zero.

3 | Results

3.1 | Conditional Process Analyses for the Women Sample

3.1.1 | Indirect Effects via Identity Threat

The analyses revealed significant indirect effects of the combined condition (vs. equality and vs. inequality) on openness to alternative information, zero-sum beliefs, and rejection of affirmative actions via identity threat (see Table 1). Specifically, the combined condition led to more identity threat than the equality condition, but to less identity threat than the inequality condition. In turn, the level of identity threat was negatively related to openness to alternative information and positively associated with women’s endorsement of zero-sum beliefs and rejection of affirmative actions for women (see Figure 1).

3.1.2 | Conditional Indirect Effects via Cognitive Unfreezing

The indirect effects of the combined versus equality condition via cognitive unfreezing on morality, sociability, competence, and immorality, openness to alternative information, and rejection of affirmative actions were significant and independent of the women’s level of neosexism (Table 1). The combined condition led to more cognitive unfreezing than the equality condition regardless of women’s endorsement of neosexism. In turn, higher cognitive unfreezing led women to perceive women as more moral, sociable, and competent, and as less immoral, and to manifest more openness to alternative information, and less rejection of affirmative actions (Figure 1).

Furthermore, the indirect effects of the combined versus inequality condition on the evaluation of women and attitudes toward gender equality were moderated by women’s level of neosexism (Table 1). Specifically, only for women with low levels of neosexism did the combined framing led to less cognitive unfreezing than the inequality framing which, in turn, led women to perceive women as less moral, sociable, and competent and as more immoral, and to manifest less openness to alternative information, and more rejection of affirmative actions (Figure 1).

3.2 | Conditional Process Analyses for the Men Sample

3.2.1 | Indirect Effects via Identity Threat

The analyses revealed significant indirect effects via identity threat of the combined condition compared to the equality condition, but not compared to the inequality condition, on the measured variables (see Table 2). As shown in Figure 2, men exposed to the combined framing manifested higher identity threat than men exposed to the equality framing. In turn, the higher perceived threat led men to perceive women as less moral, sociable, and competent, and as more immoral, and to

TABLE 1 | Relative direct effects and relative indirect effects of the manipulation via identity threat, and relative conditional indirect effects via cognitive unfreezing at low and high levels of neosexism on the dependent variables (women sample).

Predictor	Effects	Morality		Sociability		Competence		Immorality		Zero-sum perspective		Openness		Rejection of affirmative actions	
		<i>b</i> (SE) [95% CI]	<i>b</i> (SE) [95% CI]	<i>b</i> (SE) [95% CI]	<i>b</i> (SE) [95% CI]	<i>b</i> (SE) [95% CI]	<i>b</i> (SE) [95% CI]	<i>b</i> (SE) [95% CI]	<i>b</i> (SE) [95% CI]	<i>b</i> (SE) [95% CI]	<i>b</i> (SE) [95% CI]	<i>b</i> (SE) [95% CI]			
Combined (0) vs. Equality (1)	Direct	0.06 (0.08) [-0.10, 0.21]	0.01 (0.07) [-0.14, 0.16]	-0.01 (0.06) [-0.13, 0.11]	-0.06 (0.10) [-0.26, 0.13]	-0.07 (0.08) [-0.23, 0.09]	0.41 (0.12) [0.18, 0.63]	-0.09 (0.08) [-0.24, 0.07]							
	Indirect via identity threat	0.05 (0.03) [-0.003, 0.10]	0.03 (0.02) [-0.02, 0.07]	0.04 (0.02) [-0.001, 0.08]	-0.05 (0.03) [-0.12, 0.02]	-0.07 (0.03) [-0.12, -0.02]	0.09 (0.04) [0.01, 0.17]	-0.07 (0.03) [-0.12, -0.02]							
	Indirect via cognitive unfreezing	-0.03 (0.02) [-0.08, -0.002]	-0.04 (0.02) [-0.08, -0.003]	-0.02 (0.01) [-0.05, 0.000]	0.04 (0.02) [0.00, 0.10]	0.01 (0.01) [-0.01, 0.04]	-0.07 (0.04) [-0.15, -0.01]	0.04 (0.02) [0.003, 0.10]							
	Low neosexism	-0.03 (0.02) [-0.07, -0.004]	-0.04 (0.02) [-0.08, -0.01]	-0.02 (0.01) [-0.05, -0.001]	0.05 (0.02) [0.01, 0.10]	0.01 (0.01) [-0.02, 0.03]	-0.07 (0.03) [-0.15, -0.01]	0.05 (0.02) [0.01, 0.09]							
	High neosexism	-0.002 (0.02) [-0.04, 0.04]	-0.002 (0.02) [-0.04, 0.04]	-0.001 (0.01) [-0.02, 0.02]	0.003 (0.02) [-0.05, 0.05]	0.001 (0.01) [-0.02, 0.01]	-0.004 (0.04) [-0.08, 0.07]	0.003 (0.02) [-0.05, 0.05]							
	IMM	0.08 (0.08) [-0.08, 0.24]	-0.04 (0.07) [-0.18, 0.10]	0.02 (0.06) [-0.10, 0.13]	-0.10 (0.09) [-0.28, 0.09]	-0.15 (0.08) [-0.30, 0.01]	0.42 (0.12) [0.19, 0.65]	-0.17 (0.08) [-0.32, -0.02]							
Combined (0) vs. Inequality (1)	Direct	-0.02 (0.01) [-0.05, 0.001]	-0.01 (0.01) [-0.04, 0.01]	-0.02 (0.01) [-0.04, 0.001]	0.02 (0.02) [-0.01, 0.07]	0.03 (0.02) [0.01, 0.07]	-0.04 (0.02) [-0.09, -0.004]	0.03 (0.02) [0.01, 0.07]							
	Indirect via identity threat	0.05 (0.03) [0.01, 0.11]	0.06 (0.03) [0.02, 0.12]	0.03 (0.02) [0.003, 0.07]	-0.07 (0.03) [-0.14, -0.02]	-0.01 (0.02) [-0.05, 0.02]	0.11 (0.05) [0.03, 0.22]	-0.07 (0.03) [-0.14, -0.02]							
	Low neosexism	0.002 (0.01) [-0.02, 0.03]	0.003 (0.02) [-0.03, 0.04]	0.001 (0.01) [-0.01, 0.02]	-0.003 (0.02) [-0.04, 0.03]	-0.001 (0.01) [-0.01, 0.01]	0.01 (0.03) [-0.05, 0.07]	-0.003 (0.02) [-0.04, 0.03]							
	High neosexism	-0.04 (0.02) [-0.10, -0.005]	-0.05 (0.02) [-0.10, -0.01]	-0.02 (0.01) [-0.06, -0.001]	0.06 (0.03) [0.01, 0.13]	0.01 (0.02) [-0.02, 0.04]	-0.09 (0.05) [-0.19, -0.01]	0.06 (0.03) [0.01, 0.12]							
	IMM														

Note: Unstandardized coefficients are presented. Bolded coefficients are statistically significant. Abbreviation: IMM, index of moderated mediation.

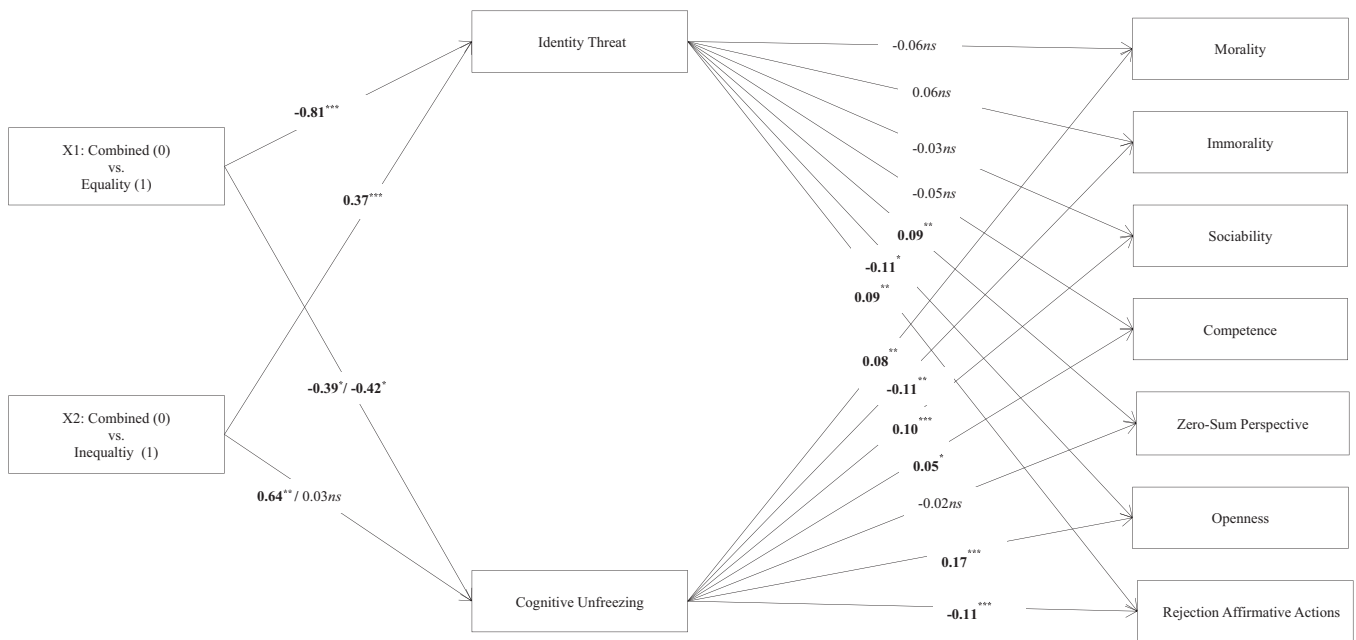


FIGURE 1 | Effects of the conditions on the dependent variables via identity threat, and via cognitive unfreezing at low/high levels of neosexism. Women sample. Note: Unstandardized coefficients are presented. Bolded coefficients are statistically significant. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

manifest higher endorsement of zero-sum beliefs, less openness to alternative information about gender inequality, and more rejection of affirmative actions for women (Figure 2).

3.2.2 | Conditional Indirect Effects via Cognitive Unfreezing

The relative effect of the combined compared to the equality condition via cognitive unfreezing was significant but dependent on men's level of neosexism (Table 2). Specifically, only for men with a low level of neosexism did the combined frame compared to the equality frame elicit more cognitive unfreezing which, in turn, led men to perceive women as more moral and less immoral, and to manifest lower endorsement of zero-sum beliefs, more openness to alternative information, and less rejection of affirmative actions (Figure 2). No indirect effects were found for the effect of inequality relative to the combined condition (Table 2).

4 | Discussion

Recent evidence (Cuadrado et al. 2024) has shown that addressing gender issues through one-sided frames that emphasize either gender inequality or gender equality has beneficial or adverse effects on men's and women's attitudes toward women and gender equality depending on the perceived level of identity threat or cognitive unfreezing triggered by the frame, and on individual differences in gender ideology. This paper aimed to extend the work of these authors by testing whether combining the two frames would help to reduce the negative effects and enhance the positive ones, in an attempt to increase ecological validity. Specifically, we examined whether the dual frame would counteract the threatening aspects of the gender inequality-persistence framing, while at the same time eliciting

higher levels of cognitive unfreezing than the gender equality achievement frame.

For women, our main findings show that simultaneously emphasizing the persistence of gender inequality and the achievement of gender equality led them to an intermediate position. The combined framing was less efficient in reducing identity threat, and consequently improving attitudes, than the equality framing, but more efficient than the gender inequality framing. Furthermore, the combined framing was more efficient than the equality framing in producing cognitive unfreezing and thus improved attitudes, regardless of women's level of neosexism. However, compared to the inequality framing, the combined framing was less efficient in producing cognitive unfreezing and, in turn, in improving the attitudes of non-sexist women. Thus, for women, the anticipated beneficial effects of the combined frame in reducing identity threat compared to the inequality frame are confirmed, but the decrease was not sufficiently pronounced to achieve comparable levels of threat to those elicited by the equality frame. Similarly, the anticipated increase in cognitive unfreezing compared to the equality frame is also supported, although, unexpectedly, the combined frame compared to the inequality frame had an adverse effect for women with less sexist views diminishing cognitive unfreezing and, in turn, worsening their attitudes toward women and gender equality.

For men, the simultaneous presentation of a frame emphasizing gender inequality persistence and gender equality achievement was less effective than the gender equality frame in reducing identity threat, as observed in the case of women. Moreover, this combined frame was as threatening as the gender inequality frame. Furthermore, the combined framing was more effective than the equality framing in inducing cognitive unfreezing and, in turn, improving attitudes. However, this was only observed in non-sexist men. Thus, the findings do not

TABLE 2 | Relative direct effects and relative indirect effects of the manipulation via identity threat, and relative conditional indirect effects via cognitive unfreezing at low and high levels of neosexism on the dependent variables (men sample).

Predictor	Effects	Morality		Sociability		Competence		Immorality		Zero-sum perspective		Openness		Rejection of affirmative actions	
		<i>b</i> (SE)	[95% CI]	<i>b</i> (SE)	[95% CI]	<i>b</i> (SE)	[95% CI]	<i>b</i> (SE)	[95% CI]	<i>b</i> (SE)	[95% CI]	<i>b</i> (SE)	[95% CI]	<i>b</i> (SE)	[95% CI]
Combined (0) vs. Equality (1)	Direct	0.15 (0.09)	[−0.02, 0.32]	0.06 (0.08)	[−0.10, 0.22]	0.01 (0.08)	[−0.15, 0.17]	−0.14 (0.10)	[−0.32, 0.05]	0.01 (0.10)	[−0.18, 0.20]	0.37 (0.11)	[0.15, 0.59]	−0.11 (0.09)	[−0.28, 0.06]
	Indirect via identity threat	0.05 (0.02)	[0.01, 0.09]	0.03 (0.01)	[0.01, 0.06]	0.03 (0.01)	[0.01, 0.06]	−0.07 (0.03)	[−0.13, −0.02]	−0.12 (0.04)	[−0.21, −0.03]	0.09 (0.04)	[0.02, 0.16]	−0.08 (0.03)	[−0.14, −0.02]
	Indirect via cognitive unfreezing	−0.06 (0.03)	[−0.13, −0.02]	−0.03 (0.02)	[−0.08, 0.01]	−0.03 (0.02)	[−0.08, 0.003]	0.09 (0.04)	[0.03, 0.18]	0.07 (0.03)	[0.02, 0.15]	−0.18 (0.07)	[−0.33, −0.07]	0.13 (0.05)	[0.05, 0.24]
	Low neosexism	−0.003 (0.02)	[−0.04, 0.03]	−0.001 (0.01)	[−0.02, 0.02]	−0.002 (0.01)	[−0.02, 0.02]	0.004 (0.02)	[−0.04, 0.06]	0.003 (0.02)	[−0.03, 0.05]	−0.01 (0.05)	[−0.10, 0.09]	0.01 (0.03)	[−0.06, 0.08]
	High neosexism	0.04 (0.02)	[0.004, 0.09]	0.02 (0.02)	[−0.004, 0.06]	0.02 (0.02)	[−0.003, 0.06]	−0.06 (0.03)	[−0.13, −0.01]	−0.05 (0.03)	[−0.10, −0.01]	0.12 (0.06)	[0.02, 0.24]	−0.09 (0.04)	[−0.17, −0.02]
Combined (0) vs. Inequality (1)	Direct	0.11 (0.08)	[−0.05, 0.28]	0.06 (0.07)	[−0.08, 0.20]	0.10 (0.07)	[−0.05, 0.24]	−0.23 (0.09)	[−0.41, −0.05]	−0.23 (0.09)	[−0.41, −0.06]	0.38 (0.11)	[0.16, 0.60]	−0.14 (0.09)	[−0.31, 0.02]
	Indirect via identity threat	−0.01 (0.02)	[−0.05, 0.02]	−0.01 (0.01)	[−0.03, 0.02]	−0.01 (0.01)	[−0.03, 0.02]	0.02 (0.03)	[−0.04, 0.07]	0.03 (0.05)	[−0.06, 0.12]	−0.02 (0.03)	[−0.09, 0.05]	0.02 (0.03)	[−0.04, 0.07]
	Low neosexism	0.01 (0.02)	[−0.04, 0.05]	0.003 (0.01)	[−0.02, 0.03]	0.003 (0.01)	[−0.02, 0.03]	−0.01 (0.03)	[−0.07, 0.06]	−0.01 (0.02)	[−0.06, 0.04]	0.02 (0.06)	[−0.10, 0.14]	−0.01 (0.04)	[−0.10, 0.07]
	High neosexism	0.02 (0.02)	[−0.01, 0.05]	0.01 (0.01)	[−0.01, 0.03]	0.01 (0.01)	[−0.01, 0.03]	−0.03 (0.02)	[−0.07, 0.02]	−0.02 (0.02)	[−0.06, 0.01]	0.05 (0.04)	[−0.03, 0.14]	−0.04 (0.03)	[−0.10, 0.02]
	IMM	0.01 (0.02)	[−0.03, 0.05]	0.004 (0.01)	[−0.01, 0.03]	0.004 (0.01)	[−0.02, 0.03]	−0.01 (0.03)	[−0.07, 0.04]	−0.01 (0.02)	[−0.06, 0.03]	0.03 (0.05)	[−0.07, 0.13]	−0.02 (0.04)	[−0.09, 0.05]

Note: Unstandardized coefficients are presented. Bolded coefficients are statistically significant. Abbreviation: IMM, index of moderated mediation.

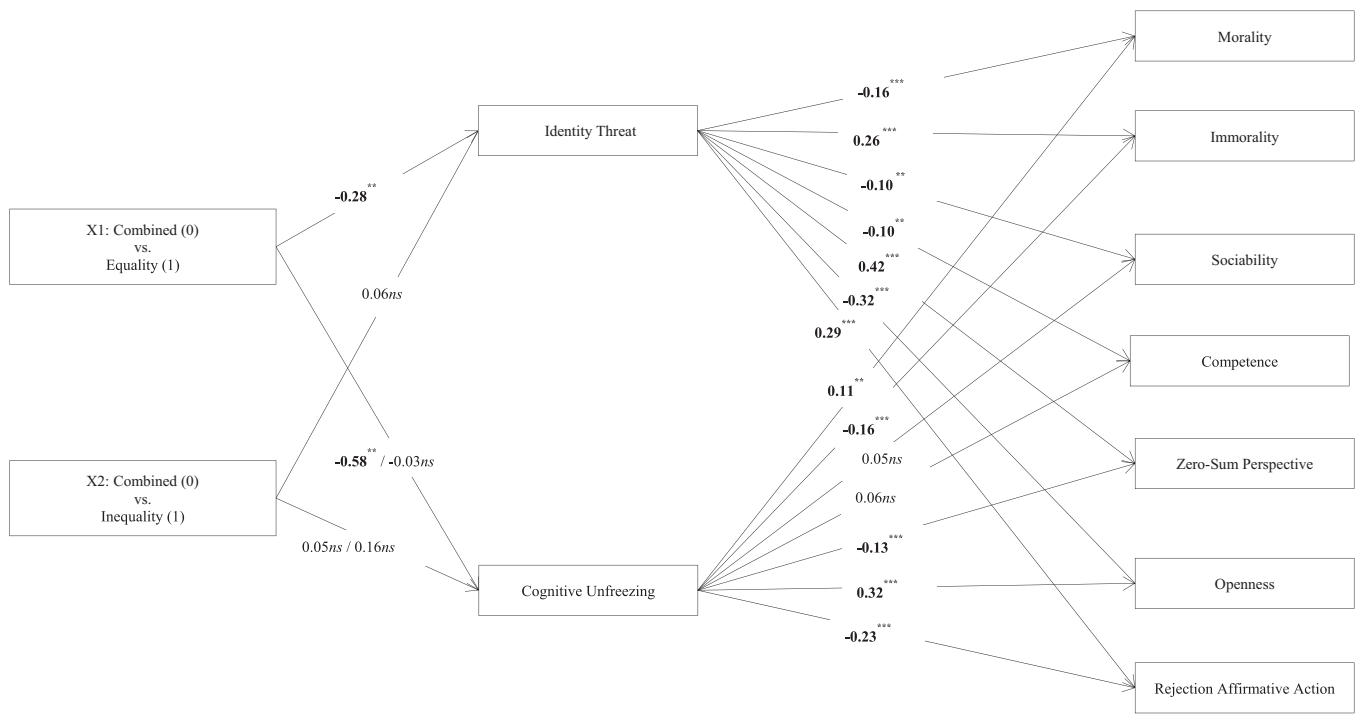


FIGURE 2 | Effects of the conditions on the dependent variables via identity threat, and via cognitive unfreezing at low/high levels of neosexism. Men sample. *Note:* Unstandardized coefficients are presented. Bolded coefficients are statistically significant. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

confirm the beneficial effect of the combined frame in decreasing identity threat compared to the inequality frame. Nevertheless, they partially support our expectation regarding the more beneficial effects on eliciting higher cognitive unfreezing than the equality framing, as this was true only for non-sexist men.

In sum, concerning the ability of the combined frame to reduce identity threat and improve attitudes toward women and gender equality, this is only true for women and only when compared to the gender inequality persistence-frame. Overall, for women, these findings are consistent with previous expectations and align with those of Cuadrado et al. (2024) regarding the effects of the two frames in isolation. The gender equality frame was found to be the least threatening, while the gender inequality frame generated the highest level of identity threat. Additionally, they align with prior research (e.g., Detenber et al. 2018), showing that dual competitive frames prompt perceivers to adopt an intermediate stance between the two frames presented. This is somewhat surprising. Both frames highlight the positive consequences of gender equality, either explicitly or implicitly. Therefore, it would be reasonable to expect that, for women, as members of the disadvantaged group, the frames would reinforce each other, leading to a stronger effect of the combined frame. However, the findings indicate that the frames interfered with each other's effect (Brewer 2002). One potential explanation is that, despite both frames pointing to the same goal, the gender inequality frame was negatively valenced, whereas the gender equality frame was positively valenced. Negative information is more threatening and also more influential (Baumeister et al. 2001). When individuals perceive a threat, they tend to seek ways to reduce its perceived impact (Branscombe et al. 1999). The inclusion of the positively valenced information from the equality frame in the combined

frame might have informed women that the threat posed by gender inequality can be addressed. This in turn, may have reduced the level of perceived threat.

For men, the overall findings suggest that, in contrast to women, the gender inequality information may have a more significant impact on men, given that when this information was presented alongside the gender equality frame, it appeared to cancel the effect of the gender equality information. As members of the advantaged group, gender inequality might be more threatening for men, as this frame might mirror their responsibility as perpetrators and bystanders of women's disadvantage, thus signaling the need for change and a potential loss of status. Conversely, awareness of the benefits of gender equality might be more reassuring, as this frame not only does not affect the group's image but also indicates that there is no need for change. It is therefore reasonable to posit that men were more inclined to pay attention to the threatening than to the non-threatening information.

Regarding the effects via cognitive unfreezing, in general, the results show the combined framing compared to the equality framing alone had beneficial effects on cognitive unfreezing and improved women's and non-sexist men's attitudes toward women and gender equality, yet, for non-sexist women, this framing was less beneficial than the inequality framing. These findings are consistent with prior research indicating that dual frames increase information seeking (Borah 2019), a pivotal antecedent of cognitive unfreezing (Wohl et al. 2016) leading to attitude change. Nonetheless, for this process to occur, the information presented should introduce some level of inconsistency with existing beliefs (e.g., Festinger 1957) and/or elicit a sense of surprise (e.g., Hameiri et al. 2018). Non-sexist women are likely more egalitarian and engaged in efforts to

achieve gender equality than sexist women, but also more aware of the persistence of gender inequality. Therefore, it is plausible that the information presented in the dual frame more closely reproduced their existing beliefs about the current situation of women and the progress of gender equality. In contrast, the inequality frame may have provided only a partial account of their views presenting a one-sided perspective that challenged, rather than confirmed, their understanding, thus prompting cognitive unfreezing.

Furthermore, the findings align with those of Cuadrado et al. (2024), which indicate that exposure to frames emphasizing gender inequality has a heightened impact on cognitive un-freezing, as well as the relevance of considering the influence of gender ideology.

Altogether, the data contributes to the existing literature on the impact of different frames of gender (in)equality and extends this literature by addressing the effects of exposure to a dual frame, which is closer to reality. However, the findings must be interpreted with caution. Although the observed pattern of variations between men and women suggests potential gender differences in the processes examined, they are not warranted as the data were analysed separately for men and women samples. Therefore, the ability to determine whether the differences are statistically meaningful is limited. Moreover, the frames considered in the study were presented simultaneously. Yet, in real-world contexts, people might be exposed to different alternatives on an issue at different time points. Consequently, future research could address this issue to further enhance ecological validity (see, Chong and Druckman 2013). Additionally, future studies could also examine the longitudinal effects of the exposure to dual frames of gender (in)equality. Furthermore, the study was developed in a context characterized by high levels of gender equality, thus, it could be of interest to examine the variations of the effects in contexts with different levels of gender equality.

In conclusion, the present study highlights the need to examine both the possible mechanisms that could be involved and the gender ideology of individuals whenever interventions targeting gender equality are designed.

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Ethics Statement

All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional research committee at Universidad de Almería and with the 1964 Helsinki Declaration and its later amendments or comparable ethical standards.

Consent

Informed consent was obtained from all individual adult participants included in the study.

Conflicts of Interest

The authors declare no conflicts of interest.

Data Availability Statement

Materials, data, and codebook of the current study are available at https://osf.io/pvw8c/?view_only=0c84ce5de08744f4acc1af3958f36613.

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