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All employees benefit: arguments that help increase support for affirmative action in academic careers

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The goal of affirmative action programs is to establish equal opportunities for women and men. Past research has focused on one type of affirmative action, namely quotas, and found that the implementation of quotas is often met by a backlash from employees. The current study adds to the literature by investigating fairness and importance perceptions of career development programs offered only to women at Austrian universities or the Austrian Science Fund. Using the model of attitudes toward affirmative action programs the current experimental study tested whether providing participants with information about the benefits (gain-message condition) or costs (loss-message condition) of the implementation of affirmative action programs influenced participants' perceptions of affirmative action programs. In the current online study, the 510 participants (52.5% cisgender women and 47.5% cisgender men; $M_{\text{age}} = 29.5$, $SD = 9.5$) from German-speaking countries in Europe gave on average higher fairness and importance ratings to career development programs offered to all employees than to such programs offered specifically to women. Men in the gain-message condition and loss-message condition gave higher fairness ratings to affirmative action programs than did men in the control condition (i.e., men who read a text that gave no justification for the implementation of affirmative action programs). Men in the gain-message condition also gave higher importance ratings to affirmative action programs than did men in the control condition. Women were not influenced in their ratings by the justification of the implementation of affirmative action programs. Nevertheless, women's perceptions of affirmative action programs were more favorable than men's. When implementing affirmative action programs in organizations, providing information that explains why affirmative action is needed and how all employees benefit therefrom can increase support from men who, as seen from past research, are known to be most opposed to affirmative action.

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Introduction

Even though in many European countries and the United States of America the number of women among doctoral graduates is nearly equal to the number of men among doctoral graduates, women are underrepresented in higher academic positions, especially in Grade B (assistant professorships/tenure track positions; 40% women and 60% men) and Grade A (full professorships; 26% women and 74% men) academic positions (European Commission, 2021; Lee et al., 2023). Thus, women holding leadership positions in academia are in the minority, and affirmative action (i.e., interventions that specifically support women's job advancement in order to avert systematic discrimination) needs to be implemented (Laver et al., 2018). However, women and men employees in academia often react negatively to the implementation of affirmative action programs or hold negative opinions about affirmative action, whereby employees who are not the subject of affirmative action programs (i.e., men) have more negative opinions than employees who are offered support by the affirmative action (i.e., women) (Crosby et al., 2006). The current study is based on the model of attitudes toward affirmative action programs (Bell et al., 2000) and investigates whether providing people with positively framed information (i.e., that affirmative action benefits all employees) or negatively framed information (i.e., that affirmative action programs replace career development programs that mostly benefit men) can help increase supportive opinions about affirmative action. Thereby, the current study uses existing advertisements or calls to affirmative action programs at Austrian universities or the Austrian Science Fund (FWF).

Gender inequality in academic careers

According to the role congruity theory of prejudice towards female leaders (Eagly and Karau, 2002), women are disadvantaged when aspiring to a leadership position, because stereotypes of typical leaders (i.e., being agentic, focused on work, being competent) are in opposition to stereotypes of women (Koenig et al., 2011). Furthermore, a so-called masculine default, i.e., a bias that includes regarding male gender norms as standard, "normal", "neutral", or necessary (Cheryan and Markus, 2020) for a leadership position can disadvantage women (Spoon et al., 2023). The role congruity theory of prejudice towards female leaders and the masculine default is in line with the theory of hegemonic masculinity (Connell, 2015), i.e., a value system and practices that privilege a specific way of being a man in a given social context and provide legitimacy for the power of men over women (and men with different ways of being a man) (Heise et al., 2019).

Therefore, while aspiring to leadership positions in academia, women (and gender minority people) face unique barriers that men not only do not encounter but that put men in a privileged position to achieve leadership positions (Corlett et al., 2023; O'Brien et al., 2023). The systemic disadvantages women experience stem from academia being an organization with masculine default (Cheryan and Markus, 2020), in which attributes that lead to being successful in a job are associated with male gender norms (Bleakley, 2013; Nett et al., 2022; Savigny, 2014; Zinn and Hofmeister, 2022). Systemic disadvantages result from specific expectations towards women and men that can undermine women's credibility as leaders or researchers (Nash and Moore, 2019) and (re-)produce asymmetry and inequality in academia (Zinn and Hofmeister, 2022).

Research has shown that women's progress in academic careers is undermined by not receiving adequate recognition for their scientific contributions or their work (Staniscuaski, 2023). For instance, it has been found that women working in a team are less likely than men in the team to be named as authors of the

resulting scientific article (Ross et al., 2022). Consequently, women have been found to be more likely to experience authorship disagreements than men (Ni et al., 2021), which can ultimately result in women's lower publication activity (Hart and Perlis, 2019; Komlenac et al., 2019, 2022; Sugimoto et al., 2013). When women are listed as authors, their work is more likely to be published in less prestigious journals than articles authored by men (Lerchenmüller et al., 2018). On average, women are less likely to be accepted when applying for grant programs and, when accepted, women on average receive lower grant amounts than men (Llorens et al., 2021; Saif et al., 2022; Schmalig and Gallo, 2023; Yuen et al., 2023). Thereby, it has been reported that gender bias in grant funding can be attributed to women being less favorably evaluated as principal investigators than men, irrespective of the quality of the proposed research project (Witte-man et al., 2019). Furthermore, there are reports about women being provided with less office or laboratory space in academia than men (Wadman, 2023). Not receiving adequate acknowledgment for their work or adequate resources/support can lead to women needing to constantly "prove" themselves to be qualified and to deserve a certain academic position. Often women need to exceed the performance of men to gain respect and acknowledgment in academia (O'Brien et al., 2023). Being confronted with gender stereotypes can hamper women's self-concept regarding fitting into an academic career and can lead to a divergence between own and organizational goals and values or to the feeling of not being accepted or respected by colleagues (Schmader, 2023). Women have reported that such an organizational climate can lead to a lack of confidence, to a reluctance to speak up, or to low levels of perceived self-efficacy in career advancement (O'Brien et al., 2023; Ovseiko et al., 2019).

Affirmative action

Affirmative action can be implemented in organizations in which a group of people (e.g., women) are systematically disadvantaged in order to abolish or avert systematic discrimination (Bendl and Schmidt, 2013; Crosby et al., 2006). Affirmative action programs focus on gender equity, thus recognize that specific groups (e.g., women) start from a social place of disadvantage and therefore need specific interventions to address imbalances. Often affirmative action programs are not offered to other groups of people who are not experiencing discrimination (or who are in a prestigious position), e.g., men (Craig and Bhatt, 2021; Legg et al., 2023).

One form of affirmative action often implemented in academia is career development programs (Knight and Hebl, 2005), such as mentoring, courses, coaching, and workshops that help women gain academic career skills, especially skills that help them engage successfully within systems and institutions that are home to gender bias and practices that impede the career advancement of women (Chang et al., 2016; Laver et al., 2018; Magrane et al., 2012). Those courses, workshops, or coaching can help increase the confidence and negotiation skills of women. Such career development programs can teach leadership skills or give counseling on the advantages or disadvantages of certain career paths in academia (Bona et al., 2023; Son Hing et al., 2023). Career development programs can also help women expand their career network or increase access to resources. Finally, some affirmative action programs in academia offer grant opportunities and prizes that are awarded solely to women (Laver et al., 2018).

Backlash to affirmative action

The implementation of affirmative action programs in organizations is often met with a backlash, i.e., opposition or negative

reactions, by employees, especially those employees who are not the subject of affirmative action (Crosby et al., 2006). Thus, women have been found to endorse affirmative action more strongly than do men (Crosby et al., 2006; Harrison et al., 2006; Möhring and Teney, 2023). However, women and men can often hold negative opinions about affirmative action (Möhring and Teney, 2023; Zehnter and Kirchner, 2020). Opposition and negative opinions often stem from the impression that discrimination is no longer prevalent in society (Crosby et al., 2006) and that therefore affirmative action programs are unfair (Crosby et al., 2006) because not all individuals and groups are treated the same (Son Hing et al., 2023).

Furthermore, negative opinions about affirmative action can go along with the advantaged group perceiving that their own resources, opportunities, or positions are threatened by the implementation of affirmative action programs (Iyer, 2022). Such so-called zero-sum perspectives are characterized by the belief that gains in resources and rights of one group (i.e., the previously disadvantaged group) directly mean loss of resources and rights of the currently privileged group and, thus, can cause resistance or opposition to affirmative action (Kim and Kweon, 2022; Mergaert and Lombardo, 2014; Ruthig et al., 2017).

However, for affirmative action to be successful or for organizational changes that guarantee equal opportunities to all employees to be possible, the support of employees is needed for such transformations (Anicha et al., 2020; Mattheis et al., 2022; Mergaert and Lombardo, 2014). Support from employees for affirmative action programs is important because negative reactions or negative opinions about affirmative action can lead to sabotage or resistance to organizational attempts to guarantee equal opportunities (Leck, 2002). Especially the support of the group that is not the subject of affirmative action programs would be important because men are more likely to be in a leadership position (European Commission, 2021; Lee et al., 2023) that allows them to implement or reinforce affirmative action (Anicha et al., 2020). Finally, in an organizational climate that supports an increase in diversity, women were found to experience conflict with coworkers and managers less frequently than in organizations with a climate that did not support diversity (Sliter et al., 2014).

Communicating the need for affirmative action

Increasing support for affirmative action can contribute to the success of affirmative action. Past research about the factors influencing people's opinion on affirmative action demonstrates that information about affirmative action that people receive is essential. Based on the model of attitudes toward affirmative action programs (Bell et al., 2000), information that highlights positive aspects (e.g., gains for disadvantaged groups) can help enhance supportive opinions about affirmative action programs, whereas information that highlights negative aspects (e.g., that the privileged group might experience "reverse discrimination") can lead to people forming non-supportive opinions about affirmative action programs (Bell et al., 2000, p. 729; White et al., 2008).

Studies have shown that the framing of information about affirmative action programs, i.e., selecting and calling attention to particular aspects of affirmative action while simultaneously directing attention away from other aspects (Bullock and Shulman, 2020), can influence people's opinions about affirmative action. For instance, formulating a decision-task so that the task is about the decision to accept one of two candidates (positive framing), rather than the rejection of one candidate (negative framing) for an intervention, can influence participants' support for such interventions. Thereby, positive framing in comparison to negative framing was found to go along with positive opinions about the intervention (Gamliel, 2007).

Another study used a different framing to provide the justifications for the need for affirmative action before letting participants judge whether they perceived such affirmative action programs to be beneficial or fair (Knight and Hebl, 2005). In one condition ("compensation justification") participants were informed about the benefits that the disadvantaged groups gained from the implementation of affirmative action programs. In another condition ("instrumental justification") participants were informed about the benefits of affirmative action programs for all students at the university. The type of justification did not influence participants' judgment of fairness of the affirmative action. However, participants who read the compensation justification perceived affirmative action to be more beneficial than did participants who did not read any justification for the implementation of affirmative action programs (Knight and Hebl, 2005).

The current study

Most studies about the effects that positive or negative framing of information about affirmative action can have on support for affirmative action have focused on quotas, i.e., the increased recruiting of persons of a disadvantaged group to certain academic positions (Bell et al., 2000; Gamliel, 2007; Knight and Hebl, 2005; Möhring and Teney, 2023; Sinclair and Carlsson, 2021; White et al., 2008; Zehnter and Kirchner, 2020). However, opinions about other affirmative action programs, such as career development programs (Knight and Hebl, 2005) that include mentoring, courses, coaching, workshops, grant opportunities, and prizes specifically offered to women were not considered. The current study will add to the literature by studying persons' opinions about currently offered career development programs at Austrian universities or the Austrian Science Fund (FWF).

Similar to previous experimental studies (Knight and Hebl, 2005), the current study will test different arguments that might help increase people's support for affirmative action. Thereby, the effect that two different arguments have on fairness and importance perceptions will be compared to a neutral condition. One argument will be similar to the instrumental justification condition (Knight and Hebl, 2005) and highlight the fact that increasing the diversity of teams and interventions that help increase diversity in teams benefits all employees ("gain-message condition"). A second condition ("loss-message condition") was intended to evoke a zero-sum perspective (Kim and Kweon, 2022). Thus, the information in the loss-message condition will state that the implementation of affirmative action means a direct decrease in the number of career development programs that can be offered to men (Kim and Kweon, 2022; Mergaert and Lombardo, 2014; Ruthig et al., 2017). The current study's negative framing condition is different from previously used negative framing conditions (Bell et al., 2000; White et al., 2008), in that it refrains from making statements, such as affirmative action is not needed, is not effective in increasing socioeconomic situations for target groups, is unfair to non-target groups, or is a form of "reverse discrimination" (Bell et al., 2000, p. 729) because those statements do not reflect research findings (Crosby et al., 2006). To the contrary, in both experimental conditions of the current study participants were informed that affirmative action programs for women were needed, whereby in the loss-message condition participants were additionally informed about the current state of discrimination against women in academia.

From previous experiments concerning support for quotas (Bell et al., 2000; Gamliel, 2007; Knight and Hebl, 2005; Möhring and Teney, 2023; Sinclair and Carlsson, 2021; White et al., 2008; Zehnter and Kirchner, 2020) and the model of attitudes toward affirmative action programs (Bell et al., 2000) the following hypotheses (Hs) were established for testing:

- H1: Career development programs offered to all scientific employees will be more favorably perceived (as having higher levels of fairness and importance) than will career development programs offered specifically to women (i.e., affirmative action).
- H2: Women will have more supportive opinions about affirmative action than will men.
- H3: Participants in the gain-message condition will perceive affirmative action programs as having a higher level of fairness and importance than will participants in the neutral condition.
- H4: Men in the loss-message condition will perceive affirmative action programs as having a lower level of fairness and importance than will participants in the neutral condition, whereas women in the loss-message condition will perceive affirmative action programs as having a higher level of fairness and importance than will participants in the neutral condition.

Methods

Procedure. The medical university's Research Ethics Committee confirmed (on March 31, 2023) that under Austrian law the current study does not require formal approval by an ethics committee ("Federal Act on the Organization of Universities and their Studies (Universitätsgesetz 2002—UG)," 2002; "Hospitals and Health Resorts Act (Bundesgesetz über Krankenanstalten und Kuranstalten—KAKuG)," 2016). Participants were recruited from April to May 2023 via the crowdsourcing service (Chandler and Shapiro, 2016; Gleibs, 2017) Prolific Academic (Prolific, London, UK). On Prolific 250 women and 250 men located in Austria, Germany, or Switzerland were invited to the study. Participants received GBP 1.5 as compensation for their participation which took on average 11 min (SD = 4.6). Additionally, a minority of participants (Table 1) was recruited via promotions on Facebook and Instagram by using authors' private accounts (Stokes et al., 2019). Participants recruited through Facebook and Instagram did not receive any compensation for their participation. The study was hosted on SoSci: der onlineFragebogen (SoSci Survey GmbH, Munich, Germany).

In total 695 persons entered the online questionnaire. Of those, 130 participants were excluded from the study because they did not respond to or responded incorrectly to two instructed response items ("Please select the response 'rather disagree'") (Huang et al., 2012; Ward and Meade, 2023). Participants ($n = 31$) who admitted not having attentively read the information about affirmative action in academic careers (i.e., responded to not have, inattentively, or mostly inattentively have read the text) were also excluded. Gender minority participants (3 transgender women, 2 non-binary people, 1 intersex person, and 3 persons with another gender) were excluded because the number of gender minority participants was too small for a meaningful analysis. Finally, in the analyses that considered sociodemographic information as co-variables, 15 participants with missing information about sociodemographic characteristics were not considered.

Measures

Sociodemographic information. Sociodemographic information was assessed with self-constructed questions about participants' age, gender identity (Fraser, 2018), sexual orientation (i.e., identity label) (Young and Bond, 2023), relationship status, highest level of education, employment, and nationality (Table 1). For each question, participants could choose from several response options or give a free-text response.

Arguments for the implementation of career development programs for women. Two texts about career development programs (Knight and Hebl, 2005) specifically offered to women working in academia were formulated based on the literature on affirmative action and gender equity (Acosta et al., 2020; EIGE, 2016; Etzkowitz et al., 2000; Wolfinger et al., 2009). The first text ("loss-message condition") was intended to evoke a zero-sum perspective (Kim and Kweon, 2022). After a short introduction about the current state of discrimination against women in academia, the text in the loss-message condition stated that interventions to promote women's job advancement were intended to replace currently existing interventions that mostly benefitted men. The second text ("gain-message condition") focused on highlighting the fact that diverse teams and interventions that help increase diversity in teams benefit all employees. Thereby, the second text emphasized that diverse people needed different interventions to help them advance in their academic careers. Therefore, the text argued, that specific interventions for women are needed. Finally, a third text ("neutral condition") contained information about the "linear" job progression in academia (i.e., steps that needed to be taken to reach the position of full professorship) (Etzkowitz et al., 2000; Wolfinger et al., 2009). All texts can be found in the Supplemental Material (S1).

Participants were randomly assigned to one of the three text conditions. Afterward, participants were asked, "How attentively/detailed have you read the text?" Participants could respond that they had 1 = not read, 2 = inattentively, 3 = mostly inattentively, 4 = fairly attentively, 5 = attentively, or 6 = very attentively read the text. This item was used to exclude participants who admitted not having read the text (i.e., responses ≤ 3).

Evaluation of affirmative action. The current study looked at eight interventions, namely either courses/workshops, prizes, or funding offered by Austrian universities or the Austrian Science Fund (FWF) solely to women as a means of supporting women's job advancement in academic careers. The advertisements or calls to the interventions/funding needed to be short, be offered only to women, and be accessible on the Austrian universities' websites or the FWF home page. For the current study, every advertisement or call was modified by removing all information that might indicate the respective university or funding agency. For each advertisement/call a second version was created in which the words that indicated that the advertisement/call targeted only women were replaced with words that indicated that the advertisement/call was targeting all academic employees. All items/stimuli used can be found in the Supplementary Material (S2).

Each participant viewed four ("original") advertisements about interventions that were offered only to women and four ("modified") advertisements about interventions that were offered to all scientific employees. Participants were randomly assigned to either of two conditions. In the first condition, all even-numbered items/advertisements (Item 2, Item 4, Item 6, Item 8) were original and the uneven-numbered items/advertisements (Item 1, Item 3, Item 5, Item 7) were modified. In the second condition, the uneven-numbered items/advertisements were about interventions offered solely to women and the even-numbered items/advertisements were about interventions that were offered to all scientific employees.

After each advertisement participants were asked how fair (1 = not at all fair; 4 = neutral; 7 = very fair) they thought the intervention was. Participants were also asked how important they believed such advertisements/calls were (1 = not at all important; 4 = neutral; 7 = very important). For the analysis fairness estimations and importance estimations were calculated as mean scores across the four items/advertisements about interventions for women and across the four items/

Table 1 Sociodemographic description of the sample (N = 510).

Variable	All N (%)	Men N (%)	Women N (%)	Loss message N (%)	Gain message N (%)	Neutral N (%)
<i>Gender</i>						
Cisgender man	242 (47.5)			84 (48.6)	83 (49.1)	75 (44.6)
Cisgender woman	268 (52.5)			89 (51.4)	86 (50.9)	93 (55.4)
<i>Sexual orientation (identifying as...)</i>						
Heterosexual	411 (80.6)	211 (87.2)	200 (74.6)	138 (79.8)	142 (84.0)	131 (78.0)
Sexual minority	99 (19.4)	31 (12.8)	68 (25.4)	35 (20.2)	27 (16.0)	37 (22.0)
<i>Relationship</i>						
Single	183 (35.9)	99 (40.9)	84 (31.3)	64 (37.0)	61 (36.1)	58 (34.5)
Committed relationship with sexual activity	273 (53.5)	120 (49.6)	153 (57.1)	85 (49.1)	95 (56.2)	93 (55.4)
Other	54 (10.6)	23 (9.5)	31 (11.6)	24 (13.9)	13 (7.7)	17 (10.1)
<i>Nationality</i>						
German	358 (70.2)	185 (76.4)	173 (64.6)	118 (68.2)	111 (65.7)	129 (76.8)
Austrian	59 (11.6)	20 (8.3)	39 (14.6)	16 (9.2)	27 (16.0)	16 (9.5)
Other	93 (18.2)	37 (15.3)	56 (20.9)	39 (22.5)	31 (18.3)	23 (13.7)
<i>Education</i>						
Primary school & vocational training	69 (13.5)	42 (17.4)	27 (10.1)	20 (11.6)	26 (15.4)	23 (13.7)
University entrance level	184 (36.1)	85 (35.1)	99 (36.9)	53 (30.6)	70 (41.4)	61 (36.3)
University degree	257 (50.4)	115 (47.5)	142 (53.0)	100 (57.8)	73 (43.2)	84 (50.0)
<i>Employment</i>						
Paid work	253 (49.6)	135 (55.8)	118 (44.0)	83 (48.0)	82 (48.5)	88 (52.4)
Education	204 (40.0)	81 (33.5)	123 (45.9)	74 (42.8)	64 (37.9)	66 (39.3)
Not in paid work	53 (10.4)	26 (10.7)	27 (10.1)	16 (9.2)	23 (13.6)	14 (8.3)
<i>Text</i>						
Loss message	173 (33.9)	84 (34.7)	89 (33.2)			
Gain message	169 (33.1)	83 (34.3)	86 (32.1)			
Neutral	168 (32.9)	75 (31.0)	93 (34.7)			
<i>Recruited</i>						
Prolific	452 (88.6)	223 (92.1)	229 (85.4)	151 (87.3)	152 (89.9)	149 (88.7)
Facebook/Instagram	58 (11.4)	19 (7.9)	39 (14.6)	22 (12.7)	17 (10.1)	19 (11.3)

Table 2 Descriptive statistics.

Condition	Contrast	Fairness			Importance		
		All M (SE); α	Women M (SE); α	Men M (SE); α	All M (SE); α	Women M (SE); α	Men M (SE); α
Intervention for all employees		5.6 (0.0); 0.76	5.8 (0.1); 0.75	5.5 (0.1); 0.76	5.2 (0.0); 0.70	5.5 (0.1); 0.69	4.9 (0.1); 0.66
Intervention only for women		4.5 (0.1); 0.83 ^a	4.8 (0.1); 0.79 ^a	4.1 (0.1); 0.84 ^a	5.0 (0.0); 0.80 ^a	5.4 (0.1); 0.70	4.5 (0.1); 0.80 ^a
Neutral	Intervention for all employees	5.6 (0.1)	5.7 (0.1)	5.5 (0.1)	5.3 (0.1)	5.5 (0.1)	5.0 (0.1)
Loss		5.6 (0.1)	5.8 (0.1)	5.3 (0.1)	5.1 (0.1)	5.5 (0.1)	4.7 (0.1)
Gain		5.7 (0.1)	5.8 (0.1)	5.5 (0.1)	5.3 (0.1)	5.6 (0.1)	5.0 (0.1)
Neutral	Intervention solely for women	4.2 (0.1)	4.7 (0.1)	3.8 (0.1)	4.9 (0.1)	5.4 (0.1)	4.4 (0.1)
Loss		4.6 (0.1) ^b	4.9 (0.1)	4.4 (0.1) ^b	5.0 (0.1)	5.5 (0.1)	4.5 (0.1)
Gain		4.5 (0.1) ^c	4.8 (0.1)	4.3 (0.1) ^c	5.1 (0.1)	5.4 (0.1)	4.7 (0.1) ^c

^aInterventions for all employees were rated significantly higher than interventions solely for women.
^bSignificant contrast between neutral and loss-message conditions.
^cSignificant contrast between neutral and gain-message conditions.

advertisements about interventions for all employees. Internal consistencies of the scales were above 0.66 (Table 2).

Statistical analysis. Descriptive statistics (means, standard deviations, percentages) are reported. Variables did not markedly violate the assumption of normal distribution (skew: -0.6 to 1.8; kurtosis: -0.6 to 3.7) (Weston and Gore, 2006). Mixed design analyses of co-variance (ANCOVAs) were calculated with SPSS, version 29.0 (IBM Corp., Armonk, NY, USA) to test whether the text condition influenced participants' ratings of the fairness and importance of interventions offered to all employees or

interventions offered to women specifically (Field, 2009). The text condition (neutral [reference group] vs. positive message vs. negative message) and gender were entered as between-subject factors. The nature of the advertisement/call (offered to all employees vs. offered only to women) was the within-subject variable. Finally, the interaction of the Text condition × Gender was included in the analysis, to investigate whether the information influenced women's and men's ratings of the advertisements/calls differently. In each analysis age, relationship status, sexual orientation, nationality, education, and employment were considered as between-subject co-variables. Significant results were indicated when $p \leq 0.05$.

From previous studies about the effect that positive or negative framing of information about affirmative action can have on opinions towards affirmative action programs (Bell et al., 2000; Gamliel, 2007; Knight and Hebl, 2005; White et al., 2008) small to medium effect sizes were expected (Cohen, 1988; Fritz and MacKinnon, 2007). In the current study the estimation of the minimum sample size with G*Power, version 3.1.9.7, was based on the assumption of a small effect size ($f = 0.1$) and resulted in a needed sample of 486 participants ($\alpha = 0.05$, $\beta = 0.8$, numerator $df = 2$, number of groups = 3, number of measurements = 2) (Heinrich-Heine-Universität Düsseldorf, Dusseldorf, Germany; Erdfelder et al., 1996; Faul et al., 2009).

Results

Participants. The sociodemographic characteristics of the final sample consisting of 510 participants are reported in Table 1. The study participants consisted of nearly an equal number of women and men. On average, participants were 29.5 (SD = 9.5) years old. The majority of the sample identified as heterosexual was in a committed relationship, had German nationality, and had a university degree. Nearly half of the sample was working in paid work (Table 1).

Fairness ratings. Overall, participants perceived interventions offered to all employees as fair, whereas participants took a neutral standpoint when rating the fairness of interventions offered only to women (Table 2). Women rated the level of fairness of both interventions higher than did men, whereby this difference in ratings between women and men was larger when participants rated interventions offered solely to women than when rating interventions offered to all employees (Table 3).

The text condition had no effect on the fairness ratings of interventions for all employees (Table 2). Participants who were in the loss-message condition and the gain-message condition rated interventions specifically for women as having higher fairness levels than did participants who read the neutral text (Tables 2 and 3). However, this effect of the text condition was evident only in men (Tables 2 and 3).

Importance ratings. Overall, women perceived both interventions, whether offered to all employees or specifically to women, to be equally important (Table 2). Men rated interventions offered to all employees as more important than interventions offered only to women (Tables 2 and 3).

The text condition had no effect on the importance ratings of the interventions offered to all employees (Table 2). Men who were in the gain-message condition rated the interventions offered specifically to women as more important than did men who read the neutral text (Tables 2 and 3). However, this effect of the text condition was not evident in women (Tables 2 and 3).

Discussion

The current study found that career development programs offered to all scientific employees are more favorably perceived, i.e., received higher ratings for fairness and importance, than were career development programs offered specifically to women (H1). Women rated all career development programs, whether offered to all scientific employees or specifically to women, more favorably than did men (H2). Finally, men were influenced by the justification for the need for affirmative action. Men who read that the implementation of affirmative action programs can benefit all employees gave career development programs offered solely to women higher fairness and importance ratings than did men who did not receive any justification for the implementation

Table 3 Results from mixed-design analyses of co-variance (ANCOVAs).

Model Variables	Fairness		Importance	
	F(1-2, 498)	η^2	F(1-2, 497)	η^2
Affirmative action (1 = no, 2 = yes)	27.4***	0.05	5.7*	0.01
Text condition	2.8		1.0	
Affirmative action × Text	4.6 ^{a,b}	0.02	2.0	
Affirmative action × Gender	6.8 ^c	0.01	9.6 ^{**d}	0.02
Affirmative action × Text × Gender	3.2 ^e	0.01	2.9	
Age	0.8		0.1	
Gender	37.3***	0.07	84.9***	0.15
Relationship status	0.4		0.0	
Sexual orientation	2.9		1.1	
Nationality	0.8		0.0	
Education	3.6		0.0	
Employment	0.5		0.0	

^aSignificant contrast between neutral and loss-message conditions in ratings of interventions for women ($p < 0.05$).
^bSignificant contrast between neutral and gain-message conditions in ratings of interventions for women ($p < 0.05$).
^cLarger difference in mean ratings between women and men when rating interventions for women than when rating interventions for all scientific employees.
^dSignificant contrast between men's ratings of interventions for all scientific employees and interventions for women only.
^eSignificant contrast between neutral and gain-message conditions and between neutral and loss-message conditions in men's ratings of interventions for women only.
^{*} $p < 0.05$, ^{**} $p < 0.01$, ^{***} $p < 0.001$.

of affirmative action programs (H3). Finally, men who were informed that some of the currently available career development programs need to be replaced with affirmative action programs, because the currently available career development programs are more tailored to help men's job advancement than to help women, gave higher fairness ratings for affirmative action than did men who received no justification for the implementation of affirmative action programs (H4).

The current study's findings demonstrate that the implementation of career development programs specifically offered to women might meet with a backlash, i.e., opposition or negative reactions, from employees (Crosby et al., 2006). Previous studies have focused on quotas, i.e., the increased recruiting of persons from a disadvantaged group for certain academic positions (Bell et al., 2000; Gamliel, 2007; Knight and Hebl, 2005; Möhring and Teney, 2023; Sinclair and Carlsson, 2021; White et al., 2008; Zehnter and Kirchler, 2020) and found that quotas for women were often unfavorably perceived. The current study adds to the existing literature by showing that people hold more negative opinions about career development programs offered solely to women than about career development programs offered to all scientific employees.

Men's ratings of affirmative action. The current study shows that especially those people who are not offered the specific career development programs (i.e., men) perceived such affirmative action programs as unfair or unimportant. The current findings are in line with previous reports in the literature, namely that men rate affirmative action more unfavorably than do women (Möhring and Teney, 2023; Zehnter and Kirchler, 2020). Men's unfavorable rating of affirmative action can be based on the impression that discrimination is no longer prevalent in society (Crosby et al., 2006) and that therefore affirmative action is unfair (Crosby et al., 2006) because not all individuals and groups are treated the same (Son Hing et al., 2023).

The current study adds to the literature by showing that especially men were influenced in their impressions of affirmative action programs by the justification for the implementation of affirmative action programs. When men were provided with information that discrimination in academia was in fact prevalent and that women started their academic careers from a disadvantaged position, men's ratings of the fairness of career development programs only for women increased, even though the information was also intended to evoke a zero-sum perspective (Kim and Kweon, 2022), namely, it informed that currently available career development programs offered to all employees needed to be replaced with affirmative action programs. Consistent with the current study's finding, a previous European study reported that people's support for affirmative action (i.e., quotas) increased the more people recognized the discrimination against women (Möhring and Teney, 2023).

Therefore, when describing and advertising affirmative action programs, e.g., on websites, information that explains why specific affirmative action programs are needed should be provided. A previous collection of studies concluded that providing people with information that helps them understand and recognize the prevalent discrimination against women (or other underrepresented groups) can lead to more support for affirmative action (Fleischmann and Burgmer, 2020). Accordingly, in the current study, the loss-message condition might have produced greater support for affirmative action programs, because in this condition participants were provided with information about existing discrimination against women.

However, the information that not only increased men's ratings for fairness but also increased ratings for importance was information about the affirmative action programs' benefits for all scientific employees. The finding that information about the fact that own gains from affirmative actions can increase favorable opinions about affirmative actions might be explained by the finding that men in the study anchor their judgment to their own perspectives (i.e., egocentric bias) (Bocian et al., 2020) and base their judgment on self-interest (Kim, 2014). Furthermore, the argument presented by the current study, namely that affirmative action programs benefit all scientific employees, did not mention any costs of such affirmative actions (in contrast to the loss-message condition), which might have increased the favorable perception of the affirmative action and thus been more consistent with self-interests (Darke and Chaiken, 2005).

The current study's findings can be used to formulate arguments to increase men's support for affirmative action. Having methods to increase men's support of affirmative action is relevant because men are often more likely to oppose affirmative action than are women (Crosby et al., 2006; Harrison et al., 2006; Möhring and Teney, 2023), whereby men as compared to women are more likely to be in a (leadership) position (European Commission, 2021; Lee et al., 2023) to implement or reinforce affirmative action programs (Anicha et al., 2020).

However, the effects of increasing men's favorable opinions of affirmative action by providing written justifications that highlight the current state of discrimination against the underrepresented groups or that highlight their own benefits from affirmative action programs were small in effect size. One reason why the effect size was small in the loss-message condition could have been because the text included two aspects, namely benefits (avert systematic discrimination) and costs (affirmative action programs replacing currently offered interventions) (Darke and Chaiken, 2005). Future studies are needed to test whether providing information that lists only the benefits (without costs) of the implementation of affirmative action programs results in stronger effect sizes. Furthermore, future studies can test whether additional arguments, e.g., arguments that evoke the impression

that the implementation of affirmative action programs is a social responsibility (Crosby et al., 2006) or arguments that help to increase men's self-esteem (Unzueta et al., 2008), can increase effect size.

Women's ratings of affirmative action. In the current study, women were not influenced in their impressions of affirmative action by the justification for the implementation of affirmative action programs. However, it is of note that women rated career development programs offered solely to women as equally important as career development programs offered to all scientific employees.

Nevertheless, women's fairness ratings for affirmative action programs were lower than for interventions offered to all scientific employees. This finding, namely that women's reluctance to support interventions aimed at promoting women in academia, was previously reported (Zehnter and Kirchler, 2020). One explanation for the finding that women might not support social change and redistribution of resources in organizations in order to abolish or avert systematic discrimination is based on the system justification theory (Jost and Hunyady, 2003; Jost and Hunyady, 2005). According to the system justification theory people tend to justify and rationalize existing structures (of inequality) so that the structures can be perceived as fair and legitimate. Furthermore, some women might hold zero-sum perspectives and perceive that gains or opportunities offered to women coincide with taking opportunities and resources away from men (Ruthig et al., 2017). Thus, women might fear retaliation from men and worry that a negative reaction to affirmative action might be directed against them. Women benefitting from affirmative action or supporting affirmative action might fear being confronted with derogative behavior or having their qualifications questioned by others because they were promoted through affirmative action (Crosby et al., 2003). In the current study, women might have refrained from judging career development programs offered solely to women as being fair, because women might have believed that such affirmative action programs can foster antagonism or tensions between women and men in organizations. Therefore, women might have been more likely to support interventions that reflect the status quo and were offered to all scientific employees (Mattheis et al., 2022; Mergaert and Lombardo, 2014).

The current study's justifications for the implementation of affirmative action programs did not provide any help or reassurance for women who face or might fear encountering negative reactions from colleagues as a result of being offered or taking advantage of affirmative action programs (Crosby et al., 2003). Future studies are needed to explore whether information about a supportive organizational climate and explicit supportive signals by colleagues can increase women's favorable perceptions of affirmative action programs (Sliter et al., 2014).

Limitations. Some limitations of the study need to be addressed. Even though the information provided to participants was similar to that in previous studies about support for quotas (Bell et al., 2000; Gamliel, 2007; Knight and Hebl, 2005; Möhring and Teney, 2023; Sinclair and Carlsson, 2021; White et al., 2008; Zehnter and Kirchler, 2020) and was formulated based on the literature about affirmative action and gender equity (Acosta et al., 2020; EIGE, 2016; Etzkowitz et al., 2000; Wolfinger et al., 2009), no pre-tests were conducted to assess how participants understood the provided information. Knowing which aspect of the provided information was important to the participants would have been important because the loss-message condition contained two aspects that might have influenced participants' judgments of affirmative action programs, namely a zero-sum perspective and information about existing discrimination against women in

academia. Even though the loss-message condition was intended to evoke a zero-sum perspective, which was expected to lead to an unfavorable perception of the implementation of affirmative action programs (Bell et al., 2000; Kim and Kweon, 2022; Mergaert and Lombardo, 2014; Ruthig et al., 2017), the loss-message condition also provided information about existing discrimination against women, which might have increased favorable perceptions of affirmative action programs (Fleischmann and Burgmer, 2020). The current study's results indicate that the information about existing discrimination against women was more important to men because men in the loss-message condition were more supportive of affirmative action programs for women than were men in the neutral condition (Möhring and Teney, 2023). Future studies should take care not to include information in one condition that can have opposite impacts on people's support for affirmative action.

An advantage of the current study is the use of existing advertisements or calls for affirmative action programs at Austrian universities or the Austrian Science Fund (Supplemental Material S2). However, the types of affirmative action programs, namely whether the advertisement/call referred to courses/workshops, prizes, or funding offered only to women, varied from item to item. Participants could have different opinions about the implementation of affirmative action programs depending on the specific type of career development program involved. The use of different types of career development programs might explain the relatively low internal consistency of men's importance judgments about interventions for all scientific employees (Ponterotto and Ruckdeschel, 2007).

Another limitation of the chosen advertisements or calls (and the study design) was that the items used implied gender binarism and did not address gender minority people. Thus, the current study risked perpetuating cis-normative beliefs held in the (academic) workplace (Anderson, 2023). It is important that future studies about support for affirmative action include affirmative action programs for intersex* and gender minority people (Walser et al., 2023) because intersex* and gender minority people also face systemic discrimination during their academic careers (Hart and Shakespeare-Finch, 2022). For instance, some gender minority people have reported encountering discrimination in the workplace to such a degree that they feel certain career paths are unattainable for them because they are a gender minority person (Corlett et al., 2023).

As is the case with many questionnaire studies, this study is based on self-reports. Participants may not respond honestly to all questions or may try to respond in a particularly socially desirable way (Choi and Pak, 2005).

Conclusion

The current study revealed that men's favorable perceptions of career development programs offered specifically to women in academia can be enhanced by providing information that helps men understand and recognize the existing discrimination against women in academia (Fleischmann and Burgmer, 2020) or information that highlights the benefits of having access to a diverse team (Crosby et al., 2003). Women in the current study were not influenced by the information and judged affirmative action programs to have lower levels of fairness than career development programs offered to all employees.

Future studies are needed to investigate whether additional arguments that list multiple benefits can increase the currently found low effect sizes. Other studies can test whether men's favorable perceptions of affirmative action programs in organizations translate to a supportive organizational climate. Finally, future work can explore whether a supportive organizational climate reduces

retaliation or other negative reactions by (male) colleagues against women who take advantage of affirmative action programs and can increase women's participation in career development programs specifically offered to women (Crosby et al., 2003).

Data availability

The datasets used and/or analyzed in the present study are available from the corresponding author on reasonable request.

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Author contributions

Conceptualization: NK, LN, MH. Data curation: NK. Formal analysis: NK. Funding acquisition: NK. Investigation: NK. Methodology: NK. Project administration: NK, MH. Resources: MH. Software: NK. Supervision: MH. Validation: NK. Visualization: NK. Writing—original draft: NK. Writing—review & editing: NK, LN, JB. All authors read and approved the final manuscript.

Ethics approval

The medical university's Ethics Committee exempted the present study from full ethics review because under Austrian law the present study did not require formal approval by an ethics committee ("Federal Act on the Organization of Universities and their Studies (Universitätsgesetz 2002—UG)," 2002; "Hospitals and Health Resorts Act (Bundesgesetz über Krankenanstalten und Kuranstalten—KAKuG)," 2016).

Informed consent

The study was conducted in accordance with the Declaration of Helsinki (World Medical Association, 2013) and the APA standards (APA, 2002). All participants were informed that the study was about advertisements or calls to affirmative action programs for women but were blind to the aims and hypotheses of the study. Before entering the questionnaire study participants agreed that their anonymous data was saved and used for research.

Competing interests

The authors declare no competing interests.

Additional information

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