



# Feminist $\neq$ Feminine? Feminist Women Are Visually Masculinized Whereas Feminist Men Are Feminized

Aleksander B. Gundersen<sup>1</sup> · Jonas R. Kunst<sup>1,2</sup>

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## Abstract

Many people hold negative stereotypes about feminists. Verbally, feminist women are often described in masculine terms whereas feminist men tend to be described in feminine terms. Here, we demonstrate that these effects extend to a fundamental perceptual level, more specifically, to the domain of face perception even in Norway, the most gender-egalitarian country of the world. Four studies were conducted using a data-driven reverse-correlation technique to test how feminist women and men are visually represented. In Studies 1 ( $n = 123$ ) and 2 ( $n = 61$ ), Norwegians had more masculine-looking and less feminine-looking visual representations of feminist women as compared to women with moderate gender-related beliefs or other activist identities (i.e., the control conditions). These effects, which were particularly pronounced among male participants and those with stronger hostile sexist beliefs, further explained why feminist women were perceived as threatening. In Studies 3 ( $n = 131$ ) and 4 ( $n = 74$ ), participants had a less masculine-looking visual representation of feminist men as compared to the control condition. This effect was especially pronounced among female participants. In addition, effects were again moderated by hostile sexism, such that participants with stronger hostile sexist beliefs visualized the feminist man as less masculine than the man in the control condition. In sum, the results suggest that people have asymmetrically gendered visual representations of feminist women and men. Feminist women are visually represented as more masculine whereas the opposite is true for feminist men. We discuss our findings in light of women's and men's reluctance to identify as feminists and suggest potential interventions to change biased visual representations of feminists.

**Keywords** Face perception · Hostile sexism · Feminism · Masculinity · Stereotypes

But the weight gain, bizarre hair colour, piercings and “genderqueer” fashion trends in feminism aren't, it seems to me, enough on their own to explain why women who strongly identify as feminists are so often either physically unappealing or mistaken for men.

– Milo Yiannopoulos, *Breitbart News*, 2015

Although the feminist movement, above all, is a political movement for women, it has indisputable implications for the

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✉ Aleksander B. Gundersen  
aleksbgu@student.jus.uio.no

<sup>1</sup> Department of Psychology, University of Oslo, Postboks 1094 Blindern, 0317 Oslo, Norway

<sup>2</sup> Department of Psychology, Yale University, New Haven, CT, USA

lives of men. A key principle of feminism holds that gender relations are power relations, which suggest that any advance in the position of women must, in some sense, be offset by a reduction of the power and influence exerted by men (Ruthig et al. 2016; Segal 1990). Heath (1987, p. 6) argued that feminism “makes things unsafe for men, unsettles assumed positions [and] undoes given identities.” However, not only men may feel threatened by feminism. For instance, women who endorse traditional gender roles may perceive feminists as undermining their gender identities (Glick and Fiske 1997). It may therefore be unsurprising that both men and women often feel threatened by feminism, leading them to confront and challenge it.

It has been proposed that individuals opposing feminism fight it through the production and spread of negative and grim stereotypes of feminists, which are dispersed and maintained through media portrayals (Percy and Kremer 1995). In line with the description of feminists provided in the opening epigraph, people frequently associate typical feminist women

with masculine traits and a manly appearance (Bashir et al. 2013). But, is it possible that these associations can be observed not only in the form of verbal stereotypes but also in the way people visually represent feminists at a fundamental, perceptual level? And, what downstream consequences and implications would such a process have? In the present paper, we aimed to demonstrate that people have gendered, visual stereotypes of feminist women and men even in Norway, the most gender-egalitarian country of the world (United Nations Development Program [UNDP] 2016).

## Stereotypes and Visual Representations of Out-Groups

Stereotypes reflect personal or culturally-shared beliefs about social groups and categories (Devine 1989; Krueger 1996), providing readily retrievable information about what typical group members are like. For instance, female gender stereotypes often characterize women as kind, helpful, and sympathetic, but as less suited for executive-level jobs that may be seen as requiring typically masculine traits (e.g., aggressiveness or emotional toughness; Heilman 2001). Crucially, stereotypes also influence how people visually represent prototypical members of a specific social category. Higher-level social cognitive processes (such as stereotypes) can dynamically influence perceptions of lower-level visual cues (such as facial features) during person construal (Adams et al. 2011; Freeman and Ambady 2011; Johnson et al. 2012). Importantly, social knowledge, such as stereotypes, can systematically alter the brain's visual representation of faces, distorting their looks to match biased expectations (Stolier and Freeman 2016). For instance, individuals may have deep-rooted, implicit stereotypes that associate women with being docile, or men with being aggressive, although they may not endorse these stereotypes explicitly. These kinds of associations can, in turn, modify the fundamental visual processing of other people, predictably twisting how the brain represents the face of prototypical group members (Stolier and Freeman 2016).

The relationship among stereotypes, prejudice, and the visual representation of group category members has been established in terms of racial intergroup relations using the *reverse-correlation* method (Dotsch and Todorov 2012), which we also used in the present research. In this data-driven method, each participant is repeatedly presented with two adjacent, visually slightly differing stimuli faces and asked to select the one which better resembles or fits a specific target category (e.g., criminals, ethnic groups). To achieve visual variation between the stimuli faces, random noise patterns (similar to white noise) are generated and superimposed on the same base image (e.g., an average White woman). Because each noise pattern is randomly generated, each

stimulus face will look slightly different. After participants have completed this task over a specific number of trials (commonly >150), the researcher can calculate the average image chosen across participants, reflecting approximations of their visual representation of the target category.

Using this method, Dotsch et al. (2008) showed that prejudiced individuals had more criminal-looking visual representations of Moroccans when compared to those lower in prejudice. However, whereas research so far has focused on how prejudice and stereotypes influence the visual representations of racial and ethnic groups (Dotsch et al. 2008; Kunst et al. 2018; Wittenbrink et al. 1997), far less is known about these processes within the field of gender relations. As we argue and tested for the first known time in the present paper, it is likely that similar processes also are at play for visual representations of feminist women and men.

## Stereotypes about Feminist Women and Men

Feminism is a collective term for ideologies, intellectual traditions, ethics, and political and social movements that focus on freedom, equality, and fairness for all sexes (Beasley 1999). In the Western world, the feminist movement is historically considered as main force behind major societal improvements of women's rights. These include the right to vote, to hold public offices, to work, to earn fair wages, to own property, and to receive education, among others. However, despite these positive achievements and societal changes, many negative stereotypes and prejudices are still tied to the label "feminist."

Within the domain of prejudice and stereotyping, it is well-established that people often have more than one evaluation toward the same social group (Dovidio and Gaertner 2004; Durante et al. 2017; Fiske et al. 2002, 2007). This is the case in terms of people labeled as feminists. On the one hand, feminists are sometimes evaluated in a positive manner with stereotypically positive descriptions such as intelligent, career-oriented, productive, and knowledgeable (Berryman-Fink and Verderber 1985; Twenge and Zucker 1999). On the other hand, feminists are also devalued as man-hating, angry, domineering, unattractive, or manly (Bashir et al. 2013; Kamen 1991; Noseworthy and Lott 1984; Six and Eckes 1991). However, there is some evidence suggesting that the specific stereotype content associated with feminists depends on whether the target group is feminist women or feminist men.

There are two literatures that have associated feminism with specific traits: one focusing on how other people describe feminists and the other on how feminists describe themselves. In terms of how other people describe feminists, feminist women are often associated with stereotypically masculine traits (e.g., aggressive, dominant; Rubin 1994) but less so with

stereotypically feminine traits (e.g., warmth; Fiske et al. 2002; Meijis et al. 2017). These findings correspond in part with research on how feminist women describe themselves. For instance, Jackson et al. (1996) showed that more masculine women are more likely to self-label as feminists, potentially suggesting the internalization of such stereotypes or less adherence to traditional gender roles.

Although far less researched, circumstantial evidence suggests the opposite associations for feminist men. People describing male feminists might think of them as feminized men or men who have renounced their masculinity, arguably because the term “feminist” can elicit images of women or the quality of femininity (Berryman-Fink and Verderber 1985; Williams and Wittig 1997). Indeed, Anderson (2009) showed that stereotypical feminine characteristics (e.g., submissive, weak, emotional) are often seen as typical of feminist men, who also are seen as less heterosexual than are prototypical men. Because heterosexuality is considered to be a hallmark of masculinity (Kilmartin 2007; Messner 2004), and feminine men are often perceived as being gay (Helgeson 1994; McCreary 1994), this evidence further suggests that people associate more feminine and less masculine traits with feminist men. Research on how feminine men describe themselves partly corresponds with this notion. Feminine men tend to be more likely to support the feminist movement (Jackson et al. 1996), and men who rate themselves as feminine are more likely to self-label as feminists (Toller et al. 2004). However, given the correlational nature of these relationships observed in previous research, a reverse causality can of course not be ruled out, so that it equally may be possible that feminist men are more willing to express their feminine sides.

## The Role of the Perceivers’ Beliefs and Gender

Against the background of research on stereotypes associated with feminist women and feminist men and research showing how stereotypes are reflected visually (Dotsch et al. 2008; Stolier and Freeman 2016), it is likely that people have masculinized visual representations of feminist women but feminized visual representations of feminist men. Such a process may arguably be driven by hostile sexist beliefs (Glick and Fiske 1997). Sexism is defined as “prejudice, stereotyping, or discrimination, typically against women, on the basis of sex” (New Oxford American Dictionary 2015). Following ambivalent sexism theory (Glick and Fiske 1997), one can further distinguish between two major forms of sexism: hostile and benevolent.

Hostile sexism, which we view as particularly relevant for the present research, seeks to justify patriarchy and male power, to maintain traditional gender roles, and to legitimize men’s exploitation of women as sexual objects through demeaning characterizations of women. It is typically associated with

negative affect toward, and stereotyping of, nontraditional women such as feminists who reject traditional gender roles in favor of taking on stereotypically masculine roles (Glick and Fiske 1996, 1997). Individuals who more strongly endorse hostile sexist beliefs also more strongly support the domination of women (Kunst et al. 2017a), see women as inferior to men, and perceive women as sexual objects (Glick and Fiske 2011), which may promote further hostility toward feminists who challenge these views. Benevolent sexism, on the other hand, justifies male dominance and traditional gender roles in a gentler way: men’s dependence on women is acknowledged and their sexual relationships with women are romanticized. Benevolent sexists generally show more positive affect and stereotypes toward traditional women (Glick and Fiske 1996, 1997). We focus primarily on hostile sexism in the present research because it targets nontraditional women such as feminists (Glick et al. 2015).

Importantly, the theory of ambivalent sexism (Glick and Fiske 1997) also argues that sexist attitudes are not restricted to men. For example, women who more strongly hold hostile sexist attitudes are likely to more strongly identify with traditional gender-roles and see feminists as a threat to the gender-role distinctions that are intrinsic to traditional women’s identities (Glick and Fiske 1997). Accordingly, hostile sexism may underlie men’s as well as women’s masculinized visual representations of feminist women and feminized representations of feminist men.

However, there are reasons to believe that men on average have more gendered representations of feminists than women do. Because men often perceive increased gender equality as a threat to their power and status, they show more negativity toward feminism and feminists than women do (Breen and Karpinski 2008; Burn et al. 2000; Hartung and Rogers 2000; Henderson-King and Zhermer 2003; Jackson et al. 1996) and prefer “housewives” (i.e., traditional women) to “feminists” (Haddock and Zanna 1994). Women, in contrast, often have a more favorable view of feminist women (Breen and Karpinski 2008; Twenge and Zucker 1999), and are more likely than men to support the feminist movement and to self-label as feminist (Jackson et al. 1996). Nevertheless, Alexander and Ryan (1997; as cited in Roy et al. 2007) showed that women also endorse negative stereotypes about feminist women and that even self-labeled feminist women often assume that typical feminists hold more radical beliefs than they themselves do (Liss et al. 2001). Hence, although men likely have particularly masculinized visual representations of feminist women, this tendency may to some extent be present among women as well.

It is also possible that women differ in their visual representations of feminist men. Although both men and women rate feminist men high on some stereotypically feminine characteristics, women in particular associate feminist men with stereotypically feminine traits (e.g., warm, affectionate, and

kind), while at the same seeing them as less attractive (Anderson 2009). Following this observation and the finding that many women perceive masculinity as an attractive trait (Little et al. 2001; Penton-Voak and Perrett 2000), women in particular may have a less masculine- and more feminine-looking visual representation of feminist men.

## Masculinity, Femininity, and Perceptions of Threat

The perceptual mechanisms we outlined may have downstream consequences for how threatening individuals are evaluated to be. Dall'Ara and Maass (1999) demonstrated that feminist women who confronted the legitimacy of male superiority were harassed more frequently than non-feminist women were (also see Holland and Cortina 2013). The authors argued that, because feminist women question the very idea of gender-based status differences and male superiority, they are often perceived as highly threatening. It is possible that at a fundamental, perceptual level, the threat that feminist women often elicit is driven at least in part by masculinized visual representations. Navigating through social environments commonly involves scanning the surroundings for potential threats, which entails keeping an eye out for people who might pose a danger (Neuberg et al. 2011). Considering that our social nature has made us highly attuned to reading faces, one way to identify whether a perceived person poses a potential threat involves looking for facial features and expressions conveying behavioral intent. In humans, displays of masculine traits such as aggression and dominance (Windhager et al. 2011) are thought to reflect attack intentions (Montepare and Dobish 2003), which naturally signal threat. Indeed, throughout history, acts of violence have disproportionately been committed by men (Daly and Wilson 1994), and more masculine men tend to engage in more violence compared to less masculine men (Carré and McCormick 2008; Ellis et al. 2008). Consequently, signs of masculinity may elicit threat perceptions, explaining why feminist women often are perceived as threatening.

## The Present Research

To the best of our knowledge, no study so far has tested whether stereotypes toward feminists extend to a fundamental perceptual level. Moreover, whereas verbally-expressed stereotypes toward feminist women are relatively well-researched, little is known about stereotypes toward feminist men. Using a reverse-correlation technique (Dotsch and Todorov 2012), we aimed to address these gaps in the literature in four studies. Specifically, we investigated whether people in general would have masculinized visual representations

of feminist women (Studies 1 and 2) and feminized visual representations of feminist men (Studies 3 and 4). We further tested whether this effect would be driven by participants' degree of hostile sexism and their gender.

All studies were conducted in Norway, which according to the United Nations' Gender Inequality Index (assessing women's reproductive health, empowerment, and labor market participation) is currently ranked as the most gender-equal country in the world (UNDP 2016). Thus, if we find the predicted effects with Norwegians who in general tend to be relatively positive toward feminism and feminists (Bye et al. 2014; Jakobsson and Kotsadam 2010), this evidence can be seen as strong support for our hypotheses.

## Study 1

The purpose of our first study was to probe people's visual representations of feminist women as compared to women with moderate gender-related beliefs or other activist identities using the reverse-correlation method. Moreover, to be able to test for potential moderation of these differences by participants' hostile sexism and gender in the subsequent rating study, these visual representations were probed for participants with higher and lower hostile sexist beliefs and for male and female participants.

## Method

### Participants

In previous reverse-correlation research, typically 15 to 20 participants per condition were needed to observe medium effects (Dotsch and Todorov 2012; Dotsch et al. 2013; Imhoff et al. 2011). Given that several of our predictions involved moderated effects that we statistically planned to test in the rating studies later, it was important to recruit a sample that would warrant a minimum of 15–20 participants per cell when testing for interactions. Satisfying this criterion, 123 respondents ( $M_{age} = 27.66$ ,  $SD_{age} = 7.71$ , range = 18–66;  $n = 113/91.9\%$  White,  $n = 10/8.1\%$  with one or both parents from a non-western country) were recruited through social media networks for a study on “how we visualize various social groups.” As a result, the sample size for the three main experimental conditions was at least 40 participants per cell, whereas the cell sizes when testing effects for individuals low and high in hostile sexism was at least 17. In all studies, participants were asked to self-select gender as either male, female, or other. In the present study, 64 (52%) indicated they were female ( $n = 59/48\%$  male, 0% other).



## Procedure and Materials

All studies presented in the present paper were approved by the Institutional Review Board of the first author. Prior to the reverse-correlation task, participants were informed that the aim of the study was to investigate the mental images people have of different social groups and that they would be asked to answer questions regarding social attitudes. Participants were then randomly assigned to one of three conditions and completed a two-image forced choice variant of the reverse-correlation method developed by Dotsch and Todorov (2012). This task repeatedly presents participants with two horizontally adjacent and visually slightly different facial images. Each time, participants are asked to always select the one of two images that better fits a specific social category.

In the present between-subjects research, images of women were presented and participants were, dependent on condition, asked to always select the facial image they believed most likely to belong to a person with (a) “strong feminist attitudes,” (b) “moderate gender-related attitudes” (control condition 1), or (c) “strong pro-animal welfare attitudes” (control condition 2). The last condition allowed for exclusion of the possibility that the potentially masculine representation of a feminist woman is simply driven by extremity in attitudes or political agenda. Additional instructions urged participants to respond intuitively. Each participant performed 300 trials in total. A video demonstrating the reverse-correlation task in the feminist condition can be seen at [https://osf.io/tkr7e/?view\\_only=850b948c12214490bc19ac780896af18](https://osf.io/tkr7e/?view_only=850b948c12214490bc19ac780896af18).

**Stimuli** Every trial showed two facial images of women created by superimposing different random noise patterns on the same facial base image. The base image used in the present study was the average gray scale image of all Scandinavian female faces from the Karolinska Face Database (see [online supplement](#), Figure 1s; Lundqvist et al. 1998). The superimposed noise patterns were generated in R using the *rcicr* script (Dotsch 2016) with 4092 truncated sinusoid patches of 2 cycles in six orientations (0°, 30°, 60°, 90°, 120°, and 150°) x five spatial scales (2, 4, 8, 16, 32 cycles per image) x two phases (0,  $\pi/2$ ), with random contrasts (amplitudes) as parameters. Each parameter defines the contrast value of one truncated sinusoid spanning 2 cycles. The stimulus size was 512 × 512 pixels. A unique random noise pattern was generated for every trial looking similar to white noise, which in turn was applied to one of the adjacent images, whereas the negative version of the noise pattern was superimposed on the other image (see [online supplement](#) Figure 1s for a demonstration of this process). The negative pattern was a mathematical opposite, which means that each dark pixel in the original noise pattern was bright in the negative pattern (comparable to a photo negative). This process maximized the difference between pictures within the trials.

Whether the original or negative noise pattern was presented on the left or right side of the screen was counterbalanced. The same stimuli were used for all participants.

**Ambivalent Sexism Inventory** Having finished all trials, participants completed the Ambivalent Sexism Inventory (ASI; Glick and Fiske 1996), which was forward-back translated (Brislin 1970) into Norwegian (see the [online supplement](#), Text 1s for the translated inventory). The ASI is a 22-item self-report measure comprising two 11-item subscales that tap benevolent (e.g., “Many women have a quality of purity that few men possesses”) and hostile sexism (e.g., “Many women are actually seeking special favors, such as hiring policies that favor them over men, under the guise of asking for ‘equality’”). Cronbach’s alphas for the benevolent and hostile sexism subscales in this study were .79 and .90, respectively. Responses were rated on a 7-point Likert scale, ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). Scales were computed by mean-scoring the respective items. The scales were scored so that higher averaged values represented more sexism.

## Analyses

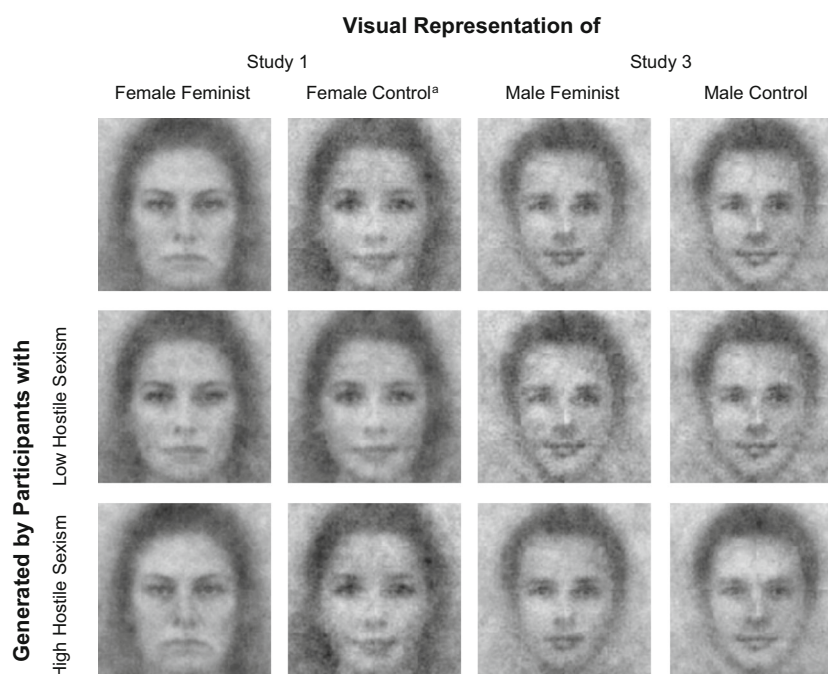
The visual representations in all studies presented in our paper were generated using the *rcicr* script created by Dotsch (2016) in R (version 0.3.4.1). The script calculates the mean of all noise patterns selected by participants within a given experimental cell. It does so by first averaging the parameters on which those noise patterns are based, resulting in a computation of 4092 mean parameters per participant, and then averaging the mean parameters across all participants for each cell of the design. The average noise pattern per condition is then superimposed on the base image to create the visual representations.

To test for the role of hostile sexism, a median split was used to divide participants into two groups with relatively high and low scores on the measure, such that group-based visual representations for these groups could be computed. This approach was chosen because treating the hostile sexism measure continuously would mean computing individual visual representations for each participant, complicating the subsequent rating task. We will return to this potential limitation in the general discussion.

## Results

The generated visual representations for the main conditions are displayed in Fig. 1. Visual inspection of the visual representation of the feminist woman showed that it displayed a more square-shaped and masculine face, with deep-set eyes and an almost angry expression. Visual representations from

**Fig. 1** Visual representations generated in the main conditions (top) and by participants high and low in hostile sexism (bottom rows) in studies 1 and 3 are displayed. <sup>a</sup>Due to the similarity of the visual representations from the two control conditions in Study 1 and for purposes of presentation, only the visual representation of the women in the moderate gender-related attitudes control condition is displayed



the control conditions, however, appeared more feminine, with round faces and fuller lips.

### The Role of Hostile Sexism

To examine whether hostile sexism would influence the effects, visual representations were generated based on participants' scores on the hostile sexism scale. Specifically, participants were divided into low-scoring ( $n = 62$ ,  $M = 2.22$ ,  $SD = .62$ ) and high-scoring subgroups ( $n = 61$ ,  $M = 4.13$ ,  $SD = .73$ ) on the hostile sexism subscale, with the cutoff at the 50th percentile. For each subgroup, visual representations were generated for each condition, resulting in six visual representations (see Fig. 1). Reflecting the general tendency in our sample for men to show more hostile sexism ( $M = 3.65$ ,  $SD = 1.07$ ) than women ( $M = 2.72$ ,  $SD = 1.09$ ),  $t(121) = 4.77$ ,  $p < .001$ ,  $d = .86$ , a Chi-square test showed that more participants in the high sexism condition were men (38 men vs. 23 women), whereas the opposite was true for the low sexism condition (21 men vs. 41 women),  $\chi^2(1) = 9.95$ ,  $p = .002$ ,  $\phi_c = .28$ .

The visual representations in the control condition looked relatively similar across the sexism conditions. By contrast, the visual representation of the feminist woman generated by those high in hostile sexism appeared to be more masculine, square-shaped, cold, and angry-looking than the visual representation of the feminist woman generated by those low in hostile sexism, which, in turn, appeared to be more feminine, with fuller lips, and more protruding eyes.

### The Role of Gender

In order to investigate whether male participants had more masculine visual representations of feminist women than female participants had, visual representations were generated separately for male and female participants for all conditions. (The respective visual representations are presented in the [online supplement](#), Figure 2s.) In contrast to the visual representations generated in the control conditions that appeared quite similar for both genders, male participants' visual representation of the feminist woman seemed to have more deep-set eyes and appeared slightly sterner than the visual representation that female participants had of the feminist woman.

### Discussion

Visual inspection of the visual representations indicated that participants had a more masculine and less feminine visual representation of feminist women than of women with moderate gender-related attitudes or other activist identities (i.e., animal activist). Results also indicated that this effect differed depending on participants' hostile sexism and gender. Specifically, individuals high in hostile sexism and men appeared to have a more masculine visual representation of feminist women. However, these results are solely based on subjective visual inspection of the generated visual representations. In the next study, we therefore let an independent sample of judges, who are unaware of a set of specific hypotheses, rate the visual representations on various dimensions.

## Study 2

The purpose of the second study was to investigate whether ratings by an independent sample of participants would support our initial visual inspections of the visual representations generated in Study 1. Participants rated each visual representation generated in Study 1 on general “masculinity” and “femininity” dimensions but also in terms of traits that stereotypically are associated with both dimensions. Specifically, they rated the images on typically masculine traits (i.e., dominant; Boothroyd et al. 2007; Perrett et al. 1998) and typically feminine traits (i.e., trustworthy, empathic, and warm; Johnston et al. 2001). Lastly, participants rated how threatening they perceived each visual representation to be. The present study tested four hypotheses: (a) the visual representation of the feminist woman will be rated as more masculine and less feminine than the visual representation of the women in the control conditions (Hypothesis 1); (b) the visual representation of the feminist woman generated by participants high in hostile sexism will be rated as more masculine and less feminine as compared to the visual representation generated by participants low in hostile sexism. (Hypothesis 2); (c) the visual representation of the feminist woman generated by male participants will be rated as more masculine and less feminine than the visual representation generated by female participants, and (d) the visual representation of the feminist woman will be perceived as more threatening than the visual representations of the women in the control conditions and this effect will be mediated by higher perceived masculinity and lower perceived femininity (Hypothesis 4).

## Method

### Participants

A power analysis using G\*Power 3.1 (Faul et al. 2007) indicated that a total sample of 61 participants would give 95% power to detect medium effects ( $f = .25$ ) in a repeated-measures ANOVA at an alpha of .05 and assuming an average correlation of .30 between measures. Hence, 61 respondents ( $M_{age} = 26.43$ ,  $SD_{age} = 5.38$ , range = 18–60;  $n = 30/49.2\%$  female; one participant who did not provide any demographics) were recruited through social media networks for a study on “how we perceive various characteristics in faces.” No information on participants’ ethnicity was collected.

### Procedure and Materials

All participants were asked to rate the 15 visual representations generated in the reverse-correlation task in Study 1. In addition to the three visual representations generated from the main conditions, they rated six visual representations generated by participants high and low in hostile sexism (3 main

conditions  $\times$  2 hostile sexism: high vs. low) and six visual representations generated by male and female participants (i.e., 3 main conditions  $\times$  2 gender: male vs. female). Although not central to our paper, participants also rated six corresponding visual representations from the interaction with benevolent sexism (3 main conditions  $\times$  benevolent sexism: high vs. low). Participants rated all visual representations in terms of how masculine, feminine, dominant, trustworthy, empathic, warm, and threatening they appeared on a scale from 0 (*not masculine/ feminine/ dominant/ trustworthy/ empathic/ warm/ threatening*, respectively) to 6 (*very masculine/ feminine/ dominant/ trustworthy/ empathic/ warm/ threatening*, respectively). Participants rated the visual representations in random order for each dimension. The order in which the trait dimensions were assessed was also randomized.

Participants were also asked to indicate the degree to which they believed that the individuals displayed in the different visual representations had feminist attitudes on a scale from 0 (*not feminist*) to 6 (*very feminist*). This was included as an exploratory measure in order to test whether the visual representation of the feminists also would be perceived by the raters as belonging to more feminist individuals. (Exploratory analyses for this measure are presented in the [online supplement](#), Text 2s.)

To simplify the analyses and keep presentation of results as parsimonious as possible, we took a formative approach (see Bagozzi 2007) to the measurement of “masculinity” and “femininity.” Specifically, based on previous research (Boothroyd et al. 2007; Johnston et al. 2001; Perrett et al. 1998), the masculinity measure was calculated by averaging masculinity and dominance ratings, whereas the femininity measure was calculated averaging femininity, warmth, empathy, and trustworthiness ratings. Ratings of perceived threat were maintained as a third dependent variable. Please note that treating each trait separately in analyses did not change the pattern of results (see [online supplement](#)).

### Analytic Procedure

Repeated-measures analyses of variance (ANOVA) were conducted to test for main and interaction effects. Bonferroni-corrected  $p$ -values are reported for multiple comparisons to reduce the likelihood of false positives.

## Results

### Main Effect

A repeated-measures ANOVA determined that mean masculinity and femininity ratings differed significantly between conditions (see Table 1a). Results fully supported the first hypothesis. Post-hoc comparisons revealed that the visual representation of the feminist was rated as more masculine than

**Table 1** Effects of conditions on image ratings in repeated-measures ANOVA in Studies 2 and 4

Dependent variable	<i>F</i>	<i>p</i>	$\eta_p^2$	Visual Representation of		
				Feminist <i>M</i> ( <i>SE</i> )	Control 1 <i>M</i> ( <i>SE</i> )	Control 2 <i>M</i> ( <i>SE</i> )
(a) Study 2						
Masculinity	245.04	< .001	.81	5.04 (.15) <sub>a</sub>	1.94 (.10) <sub>b</sub>	2.19 (.11) <sub>c</sub>
Femininity	520.51	< .001	.90	2.24 (.11) <sub>a</sub>	5.65 (.10) <sub>b</sub>	5.38 (.11) <sub>c</sub>
Perceived Threat	206.86	< .001	.78	5.24 (.19) <sub>a</sub>	1.56 (.12) <sub>b</sub>	1.68 (.14) <sub>b</sub>
(b) Study 4						
Masculinity	6.97	.010	.09	3.02 (.10) <sub>a</sub>	3.28 (.10) <sub>b</sub>	
Femininity	.06	.814	.00	4.37 (.09) <sub>a</sub>	4.38 (.10) <sub>a</sub>	
Perceived Threat	1.11	.297	.02	1.88 (.13) <sub>a</sub>	1.77 (.13) <sub>a</sub>	

Means with differing subscripts within rows are significantly different at least at  $p < .05$  (effectively  $p < .017$  after Bonferroni correction for three comparisons is applied). Control 1 = Individual with moderate-gender related attitudes, Control 2 = Animal activist

the visual representation generated in the moderate gender-related attitudes control condition ( $p < .001$ ,  $d = 3.19$ ) and in the animal activist control condition ( $p < .001$ ,  $d = 2.84$ ), which also differed from each other but less of a degree ( $p = .028$ ,  $d = .31$ ). In terms of femininity ratings, the visual representation of the feminist was rated as less feminine than the visual representation generated in the moderate gender-related attitudes condition ( $p < .001$ ,  $d = 4.38$ ) and the animal activist condition ( $p < .001$ ,  $d = 3.86$ ). The latter two conditions also differed ( $p = .002$ ,  $d = .34$ ). Support for the first hypothesis was also obtained when separately testing effects on each individual trait that stereotypically is associated with the masculinity or femininity dimension (see [online supplement](#), Table 1s).

### Hostile Sexism Moderation

A 2 (hostile sexism: low vs. high)  $\times$  3 (condition: feminist vs. control 1 vs. control 2) repeated-measures ANOVA with masculinity and femininity ratings as dependent variables was conducted. Results for masculinity ratings revealed both a main effect of the experimental condition,  $F(1.41, 81.69) = 250.00$ ,  $p < .001$ ,  $\eta_p^2 = .81$ , and the predicted Hostile sexism  $\times$  Condition interaction effect,  $F(1.75, 101.70) = 53.99$ ,  $p < .001$ ,  $\eta_p^2 = .48$ . The main effect of hostile sexism was not significant,  $F(1, 58) = 2.00$ ,  $p = .163$ ,  $\eta_p^2 = .03$ .

Results fully supported the second hypothesis. Simple effects analysis revealed a significant effect of hostile sexism on masculinity ratings of the visual representation of the feminist,  $F(1, 60) = 42.91$ ,  $p < .001$ ,  $\eta_p^2 = .42$ . Post-hoc comparisons revealed that the visual representation of the feminist generated by participants high in hostile sexism in Study 1 was rated as substantially more masculine than the visual representation of the feminist generated by those low in hostile sexism ( $p < .001$ ,  $d = .98$ ; see Fig. 2a). Simple effects analysis also revealed a significant effect of hostile sexism on masculinity

ratings of the visual representations generated in the animal activist condition,  $F(1, 60) = 42.96$ ,  $p < .001$ ,  $\eta_p^2 = .42$ . Here, the visual representation generated by those low in hostile sexism was rated as slightly more masculine than the visual representation generated by those high in hostile sexism ( $p < .001$ ,  $d = .76$ ).

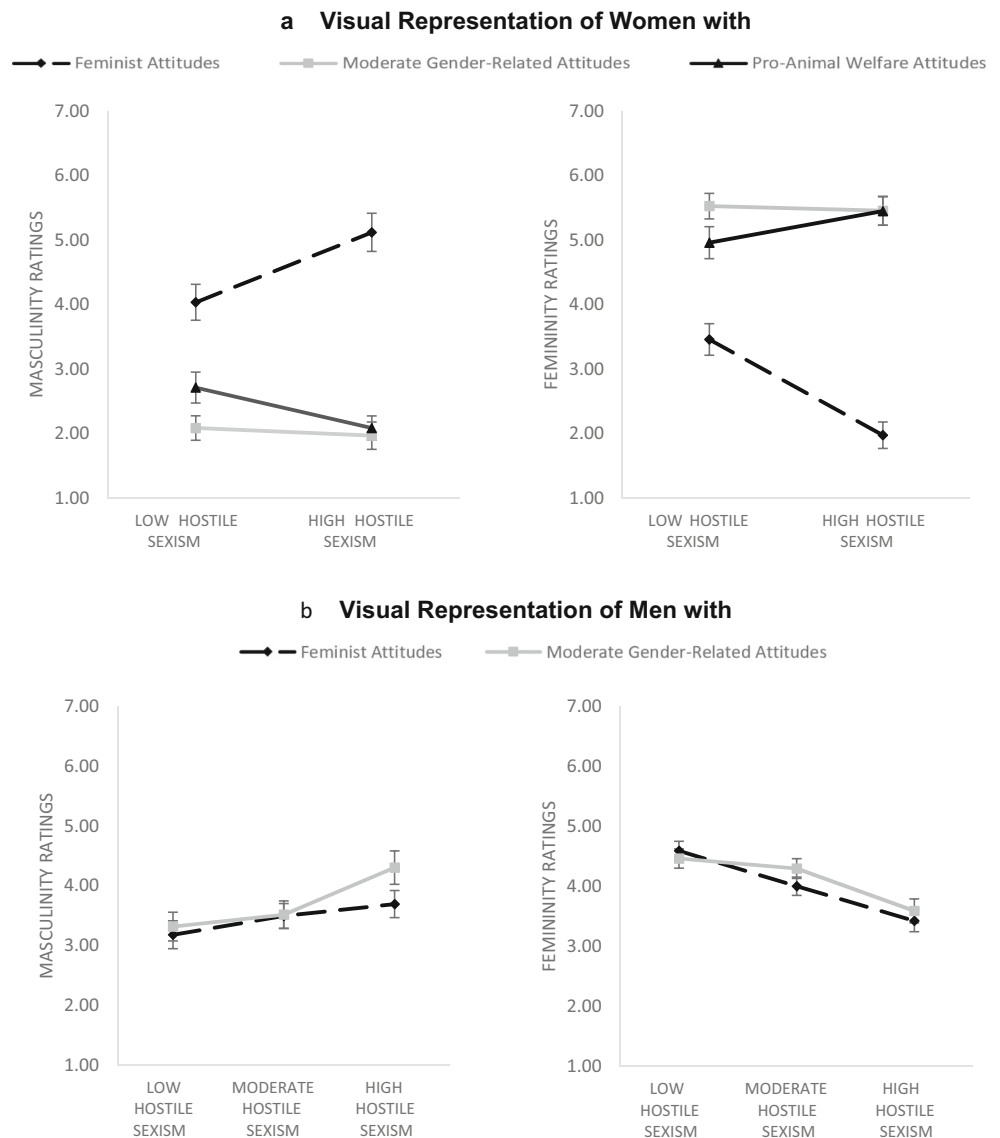
In terms of femininity ratings, the ANOVA revealed both a significant main effect of the conditions,  $F(1.28, 81.69) = 429.04$ ,  $p < .001$ ,  $\eta_p^2 = .88$ , and hostile sexism,  $F(1, 58) = 49.55$ ,  $p < .001$ ,  $\eta_p^2 = .46$ , and the predicted Hostile sexism  $\times$  Condition interaction effect,  $F(1.75, 101.36) = 94.55$ ,  $p < .001$ ,  $\eta_p^2 = .62$ . Simple effects analysis indicated a significant effect of hostile sexism on femininity ratings of the visual representations of the feminist,  $F(1, 60) = 187.79$ ,  $p < .001$ ,  $\eta_p^2 = .76$ . Post-hoc tests indicated that the visual representation of the feminist generated by those high in hostile sexism was rated as less feminine compared to the visual representation of the feminist generated by those low in hostile sexism ( $p < .001$ ,  $d = 1.71$ ; see Fig. 2a). Pillai's trace also indicated a significant effect of hostile sexism on femininity ratings of the visual representation generated in the animal activist condition,  $F(1, 60) = 17.01$ ,  $p = .001$ ,  $\eta_p^2 = .22$ . Here the visual representation generated by those high in hostile sexism was rated as more feminine than that generated by participants low in hostile sexism ( $p < .001$ ,  $d = .53$ ). Separate follow-up analyses testing for individual effects on the different trait measures traditionally associated with masculinity and femininity gave convergent support of the second hypothesis (see the [online supplement](#) Figure 6s).

### Gender Moderation

Masculinity and femininity ratings were subjected to a 2 (gender of participants in the reverse-correlation task: male vs. female)  $\times$  3 (condition: feminist vs. control 1 vs. control 2) repeated measures ANOVA. Results revealed both a main



**Fig. 2** Interactions between conditions and hostile sexism of participants in the reverse-correlation task of (a) study 1 (top) and (b) study 3 (bottom) on masculinity and femininity ratings by an independent sample of raters are displayed. 95% confidence intervals are indicated by error bars



effect of the experimental conditions,  $F(1.24, 73.27) = 277.63$ ,  $p < .001$ ,  $\eta_p^2 = .83$ , and the predicted Gender  $\times$  Condition interaction effect,  $F(2, 118) = 13.51$ ,  $p < .001$ ,  $\eta_p^2 = .19$ , on masculinity ratings. The main effect of gender was not significant,  $F(1, 59) = .56$ ,  $p = .457$ ,  $\eta_p^2 < .01$ . Simple effects analyses did not support the hypothesis in terms of masculinity ratings. No significant effect of gender on masculinity ratings of the visual representation of the feminist was observed ( $p = .185$ ,  $d = .15$ ). However, significant differences in masculinity ratings were observed in terms of the visual representation generated in the animal activist condition, demonstrating that the visual representation generated by male participants was rated as less masculine ( $M = 2.04$ ,  $SE = .10$ ) compared to the visual representation generated by female participants ( $M = 2.51$ ,  $SE = .11$ ,  $p < .001$ ,  $d = .59$ ; see the [online supplement](#), Figure 4 s). No significant difference was observed in

the moderate gender-related attitudes control condition ( $p = .058$ ,  $d = .23$ ).

However, support for hypothesis 3 was obtained in terms of femininity ratings. The ANOVA here revealed a significant main effect of the conditions,  $F(1.33, 78.34) = 399.33$ ,  $p < .001$ ,  $\eta_p^2 = .87$ , gender,  $F(1, 59) = 10.60$ ,  $p = .002$ ,  $\eta_p^2 = .15$ , and the predicted Gender  $\times$  Condition interaction effect,  $F(2, 118) = 8.73$ ,  $p < .001$ ,  $\eta_p^2 = .13$ . A simple effects analysis indicated a significant effect of gender on femininity ratings of the visual representation of the feminist,  $F(3, 57) = 11.74$ ,  $p < .001$ ,  $\eta_p^2 = .38$ . Post-hoc comparisons showed that the visual representation of the feminist generated by male participants was rated as less feminine ( $M = 2.23$ ,  $SE = .11$ ) than was the visual representation of the feminist generated by female participants ( $M = 2.60$ ,  $SE = .12$ ,  $p = .001$ ,  $d = .42$ ; see the [online supplement](#), Figure 4s). No difference was

observed between the visual representation in the moderate gender-related attitudes control condition ( $p = .175$ ,  $d = .12$ ) or the animal activist control condition ( $p = .682$ ,  $d = .03$ ). Convergent support of the third hypothesis was obtained from separate follow-up analyses of each trait traditionally associated with masculinity and femininity (see the [online supplement](#), Figure 5s).

### Threat Mediation Analysis

A repeated-measures ANOVA determined that mean perceived threat ratings differed significantly between conditions (see Table 1a). Supporting the fourth hypothesis, post-hoc tests revealed that the visual representation of the feminist was rated as more threatening ( $M = 5.24$ ,  $SE = .19$ ) compared to both the visual representation of the moderate gender-related attitudes condition ( $M = 1.56$ ,  $SE = .12$ ,  $p < .001$ ,  $d = 3.08$ ) and the animal activist condition ( $M = 1.68$ ,  $SE = .14$ ,  $p < .001$ ,  $d = 2.85$ ), which both did not differ from each other ( $p > .999$ ,  $d = .12$ ).

To investigate whether masculinity and femininity ratings mediated the differences in perceived threat, the MEMORE (MEdiation and MOderation analysis for REpeated measures design; Montoya and Hayes 2016) macro for SPSS was used. The macro estimates the total, direct, and indirect effects of  $X$  on  $Y$  through one or more mediators  $M$  in two-condition within-subjects/repeated measures designs. In a path-analytic form using OLS regression, it implements the method described by Judd et al. (2001) for single mediators while extending it to multiple mediators operating in parallel. Moreover, it allows for bootstrapped tests of the indirect effects. Because MEMORE can only be applied to two conditions, based on the observation that perceived threat ratings did not differ significantly between visual representations generated in the two control conditions, ratings for these conditions were merged and then compared to the feminist condition.

When the mediators were included in the mediation model presented in Fig. 3, the effect of condition on perceived threat ratings was no longer significant, indicating full mediation. Results showed that the feminist condition significantly predicted higher masculinity and lower femininity ratings (see Fig. 3). Masculinity in turn significantly predicted higher perceived threat whereas femininity predicted lower

perceived threat. Bootstrapping with 10,000 random resamples indicated that the resulting indirect effects that were mediated by perceived masculinity ( $b = 1.02$ ,  $SE = .49$ , 95% CI [.05, 2.00]) and perceived femininity ( $b = 2.65$ ,  $SE = .61$ , 95% CI [1.42, 3.80]) were significant. This fully supported our fourth hypothesis.

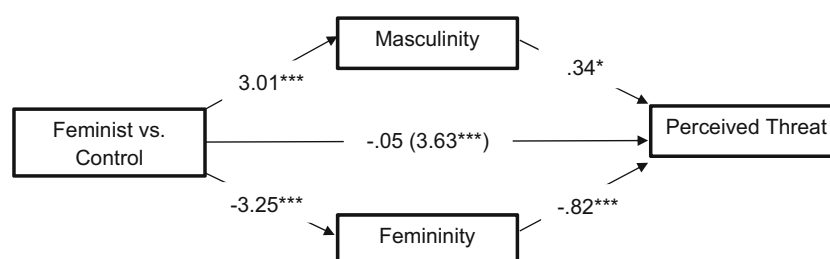
### Discussion

Most of our predictions were fully supported. As hypothesized, participants had a more masculine and less feminine visual representation of feminist women than of women with moderate gender-related attitudes or other activist identities. Hence, more masculine and less feminine stereotypes about feminist women found in the literature (Bashir et al. 2013) seem to extent to a fundamental perceptual level. Also as hypothesized, moderation analyses suggested that these effects largely were due to hostile sexist beliefs. Hostile sexism explicitly targets nontraditional women, predicting negativity toward them (Glick and Fiske 1996, 1997; Fiske et al. 2007). As our results indicate, this tendency is clearly reflected in the masculinized and generally more negative-looking visual representations that hostile sexists seem to have of feminist women. Results also partly supported the hypothesis that effects would be moderated by participants' gender. Men, as compared to women, appeared to have a less feminine visual representation of feminist women. This finding highlights a potential perceptual pathway through which feminists become derogated by men. Finally, mediation analyses supported the hypothesis that more masculine and less feminine looks explain why feminist women are perceived as threatening. In sum, in terms of feminist women as targets, we largely obtained support for our hypotheses. In the next study, we moved to an investigation of the visual representations of feminist men.

### Study 3

Although stereotypes and attitudes toward feminist women are relatively well-researched, far less is known in terms of feminist men. Hence, the purpose of this third study was to tap peoples' visual representation of feminist men as compared to men with moderate gender-related attitudes. For simplicity,

**Fig. 3** Mediation model for study 2 is displayed. Estimates in parentheses represent coefficients in the unmediated model. Unstandardized coefficients are displayed. \* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$



we only included the latter condition as control because only very minor differences were observed between the two control conditions in the previous studies. However, as in Study 1, we also focused on visual representations for participants with varying degrees of hostile sexism and for male and female participants to be able to test for moderation in the subsequent rating study.

## Method

### Participants

Following the power criterion of Study 1, a total of 131 participants ( $n = 92/70.2\%$  female,  $n = 39/29.8\%$  male, 0% other;  $M_{age} = 25.5$ ,  $SD_{age} = 9.98$ , range 19–68;  $n = 113/86.3\%$  White,  $n = 18/13.7\%$  had one or both parents from non-western countries) were recruited through social media networks and at a university campus. Given that we only had two main conditions, this sample size also allowed us to differentiate between three instead of two levels of hostile sexism (i.e., low, moderate, and high hostile sexism) while ensuring a minimum cell size of 18 when testing for interactions.

### Procedure and Materials

The reverse-correlation task followed the same procedure as in Study 1, except that the current experiment only had two conditions and that a male base image was used to create stimuli. Participants were randomly assigned to one of two conditions and were instructed to choose the individual who likely had “strong feminist attitudes” (the experimental condition) or “moderate gender-related attitudes” (the control condition). In contrast to Study 1 that used a female base image to generate stimuli faces, the base image in the present study was the average gray scale image of all Scandinavian male faces in the Karolinska Face Database (see the [online supplement](#), Figure 1s; Lundqvist et al. 1998). Using the same scale as in Study 1, participants completed 11 benevolent sexism items and 11 hostile sexism items. Cronbach’s alphas in this study were .83 and .91, respectively.

## Results

Visual representations from the two main conditions are presented in Fig. 1. Although differences appeared smaller than in Study 1, the visual representations of the feminist man displayed a slightly rounder face, with a less pronounced nose, and a more neutral expression than the visual representation of the man in the control condition. The visual representation of the man generated in the control condition had a more square-shaped face, more pronounced nose, and a faint smile.

## The Role of Hostile Sexism

As in Study 1, visual representations were generated for participants with different scores on the hostile sexism scale. Figure 1 displays the visual representations generated by those with low ( $n = 44$ ,  $M = 1.71$ ,  $SD = .41$ ), moderate ( $n = 41$ ,  $M = 2.90$ ,  $SD = .27$ ), and high ( $n = 46$ ,  $M = 4.18$ ,  $SD = .65$ ) scores on hostile sexism. As in Study 1, men scored significantly higher on hostile sexism ( $M = 3.35$ ,  $SD = 1.11$ ) compared to women ( $M = 2.77$ ,  $SD = 1.11$ ),  $t(129) = 2.75$ ,  $p = .007$ ,  $d = .53$ , and a Chi-square test revealed a higher proportion of men in the high hostile sexism condition (18 men vs. 28 women) and the moderate hostile sexism condition (14 men vs. 27 women) whereas the opposite was true for the low hostile sexism condition (7 men vs. 37 women),  $\chi^2(2) = 6.35$ ,  $p = .042$ ,  $\phi_c = .22$ .

An inspection of the visual representations showed that for those low in hostile sexism, there seemed to be little differences between the visual representations in the feminist and control conditions. However, differences seemed substantially accentuated for those with moderate and, especially, for those with highly hostile sexist beliefs. Here, it appeared as if the visual representations generated in the control condition had a more square-shaped facial appearance for participants with moderate and high hostile sexism, whereas the visual representations of the feminist man displayed a more round-faced and neutral expression for these participant groups.

## The Role of Gender

Visual representations were also generated separately for male and female participants for both main conditions (see the [online supplement](#), Figure 7 s, for the respective visual representations). The visual representation of the feminist man generated by male participants was the only visual representation without a smile present. Moreover, the jawline appeared blurred and indistinct, as compared to any of the other visual representations. The visual representation of the feminist man generated by female participants had a more distinct jawline, a faint smile, fuller lips, softer eyes, and a turned-up nose.

## Discussion

Visual representations of a feminist man appeared to look more feminine and less masculine. These differences seemed to be particularly pronounced for participants scoring high in hostile sexism and among male participants. To obtain more objective evaluations of the images, we recruited an independent sample that was unaware of the hypotheses to rate the visual representations in the next study.

## Study 4

Following the same procedure as in Study 2, we tested whether feminist men would be perceived as less masculine, more feminine, and potentially as less threatening. Moreover, we tested whether these effects would be moderated by participants' hostile sexist beliefs and gender. Specifically, we tested four hypotheses: (a) the visual representation of the feminist man will be rated as less masculine and more feminine than the visual representation of the man in the control condition (Hypothesis 1); (b) the visual representation of the feminist man generated by participants high in hostile sexism will be rated as less masculine and more feminine as compared to the visual representation generated by participants low in hostile sexism (Hypothesis 2); (c) the visual representation of the feminist man generated by female participants will be rated as less masculine and more feminine than the visual representation generated by male participants (Hypothesis 3); and (d) the visual representation of the feminist man will be perceived as less threatening than the visual representation of the man in the control condition and this effect will be mediated by lower perceived masculinity and higher perceived femininity (Hypothesis 4).

## Method

### Participants

In total, 74 participants ( $n = 36/48.6\%$  female,  $n = 38/51.4\%$  male, 0% other;  $M_{age} = 29.57$ ,  $SD_{age} = 11.37$ , range = 20–66) were recruited through social media networks and completed the image rating task, satisfying the power criteria from Study 2.

### Procedure and Materials

Participants were presented with 13 visual representations generated in the reverse-correlation task of Study 3. The visual representations were rated on the same traits and following the same procedure as in Study 2. Bonferroni-corrected  $p$ -values are presented for multiple comparisons.

## Results

### Main Effect

Partial support was obtained for the first hypothesis. A repeated-measures ANOVA indicated that masculinity ratings differed significantly between conditions (see Table 1b). As predicted, the visual representation of the feminist man was rated as less masculine compared to the visual representation of the man in the control condition ( $p = .010$ ,  $d = .30$ ). However, no differences were observed in ratings of

femininity ( $p = .814$ ,  $d = .02$ ). (Separate analyses for each trait can be found in the [online supplement](#), Table 1s.)

### Hostile Sexism Moderation

Ratings were subjected to 3 (hostile sexism: low vs. moderate vs. high)  $\times$  2 (condition: feminist vs. control) repeated-measures ANOVAs. The ANOVA for masculinity ratings revealed main effects of both condition,  $F(1, 72) = 8.81$ ,  $p = .004$ ,  $\eta_p^2 = .11$ , and hostile sexism,  $F(1.76, 126.78) = 36.22$ ,  $p < .001$ ,  $\eta_p^2 = .34$ , as well as the predicted Condition  $\times$  Hostile sexism interaction effect,  $F(2, 144) = 7.87$ ,  $p = .001$ ,  $\eta_p^2 = .10$ . Simple effects analysis revealed a significant effect of hostile sexism on masculinity ratings of visual representations of the feminist man,  $F(6, 67) = 23.32$ ,  $p < .001$ ,  $\eta_p^2 = .67$ . In contrast to our hypothesis, the visual representation of the feminist man generated by those high in hostile sexism was rated as significantly more masculine than the visual representations of the feminist man generated by those low ( $p = .001$ ,  $d = .52$ ), but not moderate ( $p = .247$ ,  $d = .21$ ; see Fig. 2b) in hostile sexism. Also, the visual representation generated by those moderate in hostile sexism was rated as significantly more masculine than the visual representation of the feminist man generated by those scoring low on hostile sexism ( $p = .050$ ,  $d = .33$ ).

Indeed, simple effects analysis indicated a similar effect of hostile sexism on masculinity ratings of the visual representation of the man in the control condition,  $F(6, 67) = 20.69$ ,  $p < .001$ ,  $\eta_p^2 = .65$ . Also here, the visual representation generated by those high in hostile sexism was rated as significantly more masculine compared to the visual representation generated by those low ( $p < .001$ ,  $d = .88$ ) and moderate ( $p < .001$ ,  $d = .72$ ) in hostile sexism. No differences were observed between the low- and moderate-scoring groups ( $p = .111$ ,  $d = .34$ ).

However, in partial support of the hypothesis, a simple effects analysis indicated that individuals high in hostile sexism had a substantially less masculine visual representation of the feminist man compared to the man in the control condition,  $F(3, 70) = 13.81$ ,  $p < .001$ ,  $\eta_p^2 = .37$ . No such differences were observed within the group scoring low ( $p = .139$ ,  $d = .13$ ) or moderate ( $p = .873$ ,  $d = .02$ ) in hostile sexism.

No support for our hypothesis was observed in terms of femininity ratings. An ANOVA revealed significant main effects of both condition,  $F(1, 72) = 4.37$ ,  $p = .040$ ,  $\eta_p^2 = .06$ , and hostile sexism,  $F(1.89, 135.77) = 117.41$ ,  $p < .001$ ,  $\eta_p^2 = .62$ , as well as the predicted Condition  $\times$  Hostile sexism interaction effect,  $F(1.88, 135.15) = 6.97$ ,  $p = .002$ ,  $\eta_p^2 = .09$ . Simple effects analysis indicated a significant effect of hostile sexism on femininity ratings of the visual representation of the feminist man,  $F(6, 67) = 23.32$ ,  $p < .001$ ,  $\eta_p^2 = .67$ . In contrast to our prediction, post-hoc tests indicated that the visual representation of the feminist man generated by those high in



hostile sexism was rated as less feminine compared to the visual representation generated by those moderate ( $p < .001$ ,  $d = .80$ ) and low ( $p < .001$ ,  $d = 1.59$ ; see Fig. 2b) in hostile sexism. Moreover, the visual representation of the feminist man generated by those scoring moderate in hostile sexism was rated as significantly less feminine than the visual representation of those scoring low in hostile sexism ( $p < .001$ ,  $d = .88$ ).

In addition to this test of our hypothesis, simple effects analysis also revealed a significant effect of hostile sexism in terms of femininity ratings of the man in the control condition,  $F(6, 67) = 23.32$ ,  $p < .001$ ,  $\eta_p^2 = .67$ . Here, the visual representation generated by those high in hostile sexism was rated as significantly less feminine than the visual representations generated by those low ( $p < .001$ ,  $d = 1.12$ ) and moderate ( $p < .001$ ,  $d = .90$ ) in hostile sexism. No differences were observed between the low- and moderate-scoring groups ( $p = .101$ ,  $d = .24$ ). Follow-up analyses treating the trait measures traditionally associated with masculinity and femininity separately provided convergent results (see the [online supplement](#), Figure 10s).

### Gender Moderation

Masculinity and femininity ratings were subjected to a 2 (gender of participants in the reverse-correlation task: male vs. female)  $\times$  2 (condition: feminist vs. control) repeated measures ANOVA. The ANOVA for masculinity ratings revealed both a main effect of gender,  $F(1, 72) = 23.27$ ,  $p < .001$ ,  $\eta_p^2 = .24$ , and the predicted Gender  $\times$  Condition interaction effect,  $F(1, 72) = 73.13$ ,  $p < .001$ ,  $\eta_p^2 = .50$ , but no main effect of condition,  $F(1, 72) = .43$ ,  $p = .515$ ,  $\eta_p^2 = .01$ . Simple effects analysis indicated that gender had a significant effect on masculinity ratings of the visual representation of the feminist man,  $F(3, 70) = 72.15$ ,  $p < .001$ ,  $\eta_p^2 = .76$ . In support of our hypothesis, post-hoc comparisons showed that the visual representation generated by female participants was rated as less masculine ( $M = 3.00$ ,  $SE = .09$ ) compared to the visual representation generated by male participants ( $M = 4.21$ ,  $SE = .13$ ,  $p < .001$ ,  $d = 1.23$ ; see the [online supplement](#), Figure 8s). In addition to this test of our hypothesis, simple effects analysis also indicated a significant effect of gender in the control condition,  $F(3, 70) = 5.08$ ,  $p = .003$ ,  $\eta_p^2 = .18$ . Here, the visual representation generated by female participants was rated as more masculine ( $M = 3.77$ ,  $SE = .13$ ) compared to the corresponding visual representation generated by male participants ( $M = 3.32$ ,  $SE = .11$ ,  $p < .001$ ,  $d = .44$ ).

In terms of femininity ratings, significant main effects of gender,  $F(1, 72) = 97.58$ ,  $p < .001$ ,  $\eta_p^2 = .58$ , and the conditions,  $F(1, 73) = 83.43$ ,  $p < .001$ ,  $\eta_p^2 = .54$ , as well as the predicted Gender  $\times$  Condition interaction effect,  $F(1, 73) = 80.12$ ,  $p < .001$ ,  $\eta_p^2 = .42$ , were observed. Simple effects analysis revealed that gender had a significant effect on femininity

ratings of the visual representation of the feminist man,  $F(3, 70) = 72.15$ ,  $p < .001$ ,  $\eta_p^2 = .76$ . In support of our hypothesis, post-hoc comparisons indicated that the visual representation generated by female participants was rated as more feminine ( $M = 4.46$ ,  $SE = .09$ ) than was the visual representation generated by male participants ( $M = 2.89$ ,  $SE = .08$ ,  $p < .001$ ,  $d = 2.10$ ; see the [online supplement](#), Figure 8 s). In addition to this test of our main hypothesis, simple effects analysis also indicated that gender had a significant effect on femininity ratings of the visual representation of the man in the control condition,  $F(3, 70) = 5.08$ ,  $p = .003$ ,  $\eta_p^2 = .18$ . Here, the visual representation of the man in the control condition generated by female participants was rated as less feminine ( $M = 4.15$ ,  $SE = .08$ ) compared to the corresponding visual representation generated by male participants ( $M = 4.33$ ,  $SE = .10$ ,  $p = .050$ ,  $d = .23$ ).

Taken together, the observed results supported the hypothesis that women, compared to men, would have a more feminine and less masculine visual representation of feminist men. Separate follow-up analyses for each trait associated with masculinity and femininity provided mostly convergent evidence (see the [online supplement](#), Figure 9s).

### Mediation Analyses

In contrast to our hypothesis, a repeated measures ANOVA indicated that perceived threat ratings did not differ significantly between conditions (see Table 1b). Hence, given the lack of a direct effect, no mediation analysis was employed.

### Discussion

In partial support of our first hypothesis, participants on average had a more feminine visual representation of the feminist man as compared to the man in the control condition. There may be different explanations for these results. On the one hand, this tendency may reflect cultural stereotypes that associate feminist men with feminine traits (Anderson 2009). On the other hand, stereotypes about feminist men may have been shaped by real-world observations because some evidence suggests that feminine men in fact are more likely to be feminist (Anderson 2009; Jackson et al. 1996; Toller et al. 2004). However, despite this partial support of our hypothesis, it is important to note that generally the effects were less pronounced than were those observed in terms of feminist women. Arguably, feminist men are not a salient social group in general nor prototypical of the feminist movement. Consequently, people may have a less clear stereotype of them than of feminist women. Hence, information about feminist men may have been less readily available (see Sechrist and Stangor 2001) and therefore may have had less of an effect on visual representations.

As in Studies 1 and 2, hostile sexism moderated effects on masculinity and femininity ratings. Interestingly and in contrast to our hypothesis, it did so in the same way as in the previous studies. Specifically, the more hostile sexist participants were, the more masculine and less feminine were their visual representations of men in the feminist condition as well as the control condition. These results suggest that hostile sexists have a general tendency to masculinize the appearance of men regardless of their gender ideology. Nevertheless, at least partially supporting our hypothesis, high hostile sexists' representation of feminist men was in relative terms significantly less masculine than their visual representation of non-feminist men, whereas this tendency was not observed for participants scoring moderate or low in hostile sexism.

Lastly, as hypothesized, female participants had a more feminine and less masculine visual representation of feminist men. This observation is consistent with research showing that women perceive feminist men positively and as less masculine (Anderson 2009; Twenge and Zucker 1999).

## General Discussion

In four studies, we demonstrated that people have asymmetrically “gendered” visual representations of feminist women and men even in Norway, the most gender-egalitarian country of the world (UNDP 2016). Moreover, we identified hostile sexism, an ideology targeting nontraditional women, as a major driver behind these effects. In Studies 1 and 2, participants had masculinized visual representations of a feminist woman and this was particularly pronounced among individuals high in hostile sexism and, possibly for this reason, also among male participants who on average scored higher on hostile sexism. Mediation analyses further indicated that this masculinized (and less feminized) perception explained why the visual representation of the feminist woman was perceived as threatening. By contrast, in Study 3 and 4, typical feminist men were visually represented as more feminine than non-feminist men were. Women visually represented feminist men as less masculine and more feminine than men did, whereas hostile sexism unexpectedly predicted a more masculine and less feminine visual representation of the feminist as well as non-feminist man.

The present research extends work showing that stereotypes have pervasive effects on judgments, decisions, and behavior and often are reflected in visual representations of group members (Cuddy et al. 2007; Fiske and Lee 2008; Koch et al. 2016; Macrea et al. 1994; Rudman and Glick 2001; Wheeler and Petty 2001). Recent neuroscientific research revealed that stereotype knowledge can distort the visual representations of the faces of category members, altering them to fit with biased expectations (Stolier and Freeman 2016). The present research demonstrated consistent effects

in the domain of gender relations. In line with wide-spread gender stereotypes (Anderson 2009; Bashir et al. 2013), visual representations of men and women seem to be “gendered” depending on their gender-political ideology.

How stereotypical members of social minority groups are perceived to look can have crucial downstream consequences for how they are treated (Blair et al. 2004; Eberhardt et al. 2006). The present research contributes to this literature showing similar effects in the gender domain. Masculine traits are often perceived to signal hostile intentions (Montepare and Dobish 2003). Consistent with this notion, mediation analysis in the present research suggested that feminist women were perceived as more threatening because they were seen as having more masculine and less feminine traits. When people encounter threat, they typically enter a fight or flight mode to minimize these threats (Cannon 1932). Both strategies may have negative consequences for feminist women. People perceiving such threat may avoid or exclude them and, in the worst case, even show aggressiveness toward them. Hence, our findings highlight potentially serious consequences of biased visual representations of feminist women.

All effects observed in the present research were moderated by participants' level of hostile sexist beliefs. Research utilizing the same reverse-correlation approach as in the present research has shown that stereotypical visual representations are especially prevalent among prejudiced individuals (Dotsch et al. 2008). Based on this observation, we predicted that, in particular, individuals high in hostile sexism would visually represent feminists in a stereotypical manner, by seeing feminist women as more masculine-looking and feminist men as more feminine-looking. In support of our prediction, a typical feminist woman was visually represented as considerably more masculine and less feminine by individuals high in hostile sexism. This finding is consistent with and extends research that has shown that hostile sexism is specifically directed toward women who are perceived as a threat to men's power (Glick et al. 2000, 2004; Glick and Fiske 1996, 1997, 2001) by showing similar effects at a fundamental perceptual level.

In terms of feminist men, hostile sexism also moderated the effects. However, our findings were only partly in line with our predictions. In contrast to that we had hypothesized, individuals high in hostile sexism seemed to generally have a more masculine and less feminine representation of men. This finding suggests that hostile sexists show a general tendency to masculinize men, likely reflecting their idealized perception of a prototypical man. However, in partial support of our predictions, this tendency seemed to apply to less of an extent to feminist men. Participants who were high in hostile sexism had a less masculine visual representation of a feminist man than of a non-feminist man. Nevertheless, in general, hostile sexism far less consistently moderated the effects on visual representations of feminist men as compared to women,

which may be explained by the fact that the construct targets nontraditional women rather than men (Glick and Fiske 1997). Indeed, most of the scale's items assess misogyny and not attitudes toward men.

The fact that we observed moderation by hostile sexism across the studies also contributes to the field of visual representations of social categories more generally. Although previous research showed a relationship between implicit prejudice and biased visual representations (Dotsch et al. 2008), it often failed to show the same relationship with explicit measures as we did in the present research (Dotsch et al. 2013; but see Kunst et al. 2017b). For instance, Dotsch et al. (2008) measured explicit attitudes toward an ethnic out-group, but these did not moderate the effects. To explicitly endorse prejudicial beliefs about an ethnic group may be socially undesirable (Crandall et al. 2002; Dovidio and Gaertner 2004), possibly explaining the non-significant relationship between explicit prejudice and visual representations found in Dotsch et al. In contrast, people's explicit hostile sexist beliefs toward women may arguably not be impacted by social desirability to the same degree (see Glick and Fiske 1996). In fact, a core rationale of ambivalent sexism theory (Glick and Fiske 1996, 1997) is that hostile sexism functions together with, and is camouflaged by, benevolent sexism. When hostile sexists are accused of being sexist, they might defend themselves by referring to their apparently positive, cherishing and protective (benevolent sexist) attitudes toward women (Glick 2013; Glick and Fiske 2001). Hence, because benevolent sexism complements and justifies hostile sexism (Sibley et al. 2007), people may not be as inclined to alter their responses on the Ambivalent Sexism Inventory in a socially desirable manner.

Men and women visually represented feminists in different ways. Male participants viewed a feminist woman as significantly less feminine than female participants did. By contrast, female participants had a more feminine and less masculine visual representation of feminist men than male participants had. These differences may be explained by male participants generally scoring higher on hostile sexism and hence apparently having a stronger tendency to masculinize feminist women and men more generally. At the same time, one could also argue that these gender differences reflected self-serving biases and qualitatively different stereotypes. For women (as compared to men), being a feminist may not be contradictory to being feminine, at least in a Norwegian context where feminism is generally valued (Bye et al. 2014; Jakobsson and Kotsadam 2010). Indeed, in such a context where many women openly self-label as feminists, our female participants (who possibly to some extent also identified with feminism) may have been motivated to challenge these typical stereotypes that associate masculine traits with feminist women.

## Limitations and Future Directions

Needless to say, the present research was characterized by limitations of which some are noted here. First, despite its suitability to probe into people's visual representations of various social categories, it is important to note that one should be cautious when interpreting the outcome of the reverse-correlation task as an exact visual representation of a given social group. Rather, these visual representations should be seen as approximations that are affected by task-specific aspects such as the base image or the generated noise patterns (Dotsch and Todorov 2012). For instance, in the present research, the base images were average gray scale images of all female or male Scandinavian faces in the Karolinska Face Database (Lundqvist et al. 1998). Undoubtedly, this, together with the noise pattern, puts constraints on the resulting visual representations. A better way to interpret the visual representations may therefore be to see them as *expected facial appearances* of what typical category members look like. Several sources might influence such visual expectations, such as the type of base images or, as we demonstrated, stereotype knowledge associated with the target category.

Although we assessed sexist beliefs with a well-established scale, it would have been of interest to additionally measure whether participants identified with being feminists themselves. This would have allowed us to disentangle effects caused by hostile sexism and social identification and possibly helped elucidate the gender differences observed. Relatedly, we would also like to note the use of the median split that separated participants into groups scoring relatively high or low on the hostile sexism measure in Study 1, as well as scoring high, moderate and low on the measure in Study 3, as limitation. Optimally, one should have treated the hostile sexism scale continuously to make full use of its response variation. However, in research using the reverse-correlation technique, this would have led to various procedural challenges.

In order to treat hostile sexism continuously, we would need to generate visual representations for each participant individually (more than 100 in each of the reverse-correlation studies in the present research). The independent sample of raters would then need to evaluate more than 100 pictures on six dimensions, which is a lengthy and strenuous task. Moreover, because these images reflect a lot of individual variation in addition to the effect of our experimental manipulations, this task may become even more demanding and possibly weaken the reliability of its results. Possibly for this reason, most of the existing research using the reverse-correlation technique has computed group-based classification images rather than individual classification images (e.g., Dotsch et al. 2008; Kunst et al. 2017b, 2018). However, because treating moderators continuously in many ways is

advantageous, future research is needed to provide specific methodological guidelines and recommendations on this issue.

It is also important to note that the visual representations could have been assessed on other dimensions than masculinity/femininity. For instance, it would have been of interest to measure the extent to which raters found the pictures attractive or not or whether they saw them as qualified for different types of jobs in stereotypically male or female domains. Moreover, future research should try to obtain sample sizes sufficient to disentangle the moderating effects of hostile sexism and gender. Because men tend to score higher on hostile sexism, future studies may optimally look at effects of hostile sexism within both genders, testing three-way interactions. Lastly, it would have been of interest to use eye-tracking procedures to investigate which facial areas were particularly predictive of masculinity ratings in the rating parts of the study.

The present research also opens up opportunities for future cross-cultural comparisons. Our results demonstrate that even though Norway is the most gender-egalitarian country in the world (UNDP 2016), Norwegians have gendered visual representations of feminist women and feminist men that correspond to gender stereotypes known from less gender-egalitarian countries. These findings beg the question of how our results would have looked in societies where being a feminist has more negative connotations than in Norway and, generally, in countries with less gender equality. Moreover, countries often markedly differ in the degree to which their populations endorse sexist beliefs (see Glick et al. 2000, 2004). Hence, it would be of interest to replicate our studies in countries with highly sexist beliefs. Possibly, effect would in such contexts also be larger in terms of visual representations of feminist men.

Finally, although the current research indicates that people visually represent feminists in stereotypical manners, we did not explore the temporal stability of these representations nor their sensitivity to change. Research has shown that participants presented with negative stereotypes about feminists are less likely to affiliate with typical feminists (Bashir et al. 2013). Thus, it would be of interest to see whether priming people with negative or positive stereotypes about feminists influences their visual representation of nontraditional (e.g., a female CEO) and/or traditional women.

## Practice Implications

Gender stereotypes are widespread, their effects are pervasive, and, as the present paper demonstrates, even extend to a fundamental perceptual level. Hence, activists and policymakers promoting feminism should be aware of how the label “feminist” affects the way we visually represent individuals. Many women are reluctant to self-identify as a feminist largely because they assume that this will lead others to view them

negatively (Roy et al. 2007). In fact, many feminist women experience harassment (Holland and Cortina 2013), and our results suggests that, at least at a perceptual level, this may be because some people perceive them as less feminine, more masculine, and consequently as more of a threat. By contrast, men arguably are hesitant to identify as feminist because they perceive the term as insinuating femininity (Berryman-Fink and Verderber 1985; Williams and Wittig 1997). Knowledge about these processes and consequences may help individuals and organizations in developing campaigns and interventions to increase support for feminism and the extent to which women and men openly identify with it.

For instance, one strategy may be to publicly challenge the assumption that supporting women’s rights necessarily has something to do with one’s gender identity or the way one looks. Campaigns such as “This is what a feminist looks like” (Shameless Photo 2017) already take this approach to highlight the broad diversity of people endorsing feminism and identifying with it. Our research suggests that one particularly effective way to challenge pre-existing views may be to portray highly masculine male and highly feminine female supporters of the feminine movement. This may further contribute to more heterogeneous perceptions of feminists, consequently facilitating identification with it across different societal groups. Given that personal identification with feminism increases readiness for collective action (Klandermans 1997; Yoder et al. 2011), such a process could ultimately result in a broader group collectively supporting the feminist movement.

## Conclusion

Feminist women often experience harassment due to their political views. The present paper highlights mechanisms that at a perceptual level may contribute to this phenomenon. People seem to visually represent feminist women and men in stereotypical manners by seeing feminist women as more masculine-looking and feminist men as more feminine-looking. Especially in terms of the perception of feminist women, these effects seem to be substantially driven by hostile sexism, suggesting that they reflect a generally negative stance toward nontraditional women who challenge patriarchy.

## Compliance with Ethical Standards

Hereby we confirm that the present research complied with the ethical standards of the APA and laws and regulations of the country where it was conducted. The research was approved by the Institutional Review Board of the first author.

**Informed Consent** Informed consent was obtained from all participants.

**Conflict of Interest** No conflict of interest needs to be declared.



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