Gender, Traditional Gender Ideology, Gender Essentialist Beliefs and Masculinity Threat as Determinants of Attitudes towards Trans and Gender Diverse People in a UK Sample

Abstract

Previous research has shown that identifying as a man, endorsing traditional gender norms and holding gender essentialist beliefs are associated with more negative attitudes towards the Trans and Gender Diverse (TGD) community. Implicit cues relating to gender identity, such as a threat to masculinity, have also been associated with negative attitudes. Currently, no research has examined this combination of predictors nor the influence of implicit cues in a UK sample and therefore the current studies aimed to address this gap. Study 1 included 204 participants who were asked to complete measures of traditional gender ideology, gender essentialism and attitudes toward TGD people. Study 2 involved 330 participants who experienced a threat to masculinity/femininity, masculinity/femininity affirmation or were part of a control group. Study 1 found that men had poorer attitudes towards TGD people and less positive gender and sex beliefs through adherence to traditional gender norms and holding gender essentialist beliefs compared to women. Unexpectedly, following masculinity threat, men did not show more negative attitudes toward TGD people relative to men who did not receive this threat. As expected, there was no difference in attitudes towards TGD people in women who did and did not receive a threat. Being a man has an association with negative attitudes. Findings suggest that anti-prejudice interventions towards the TGD population should target beliefs regarding gender ideology and essentialist beliefs to be effective. Future research should consider additional determinants of transnegativity, such as collective narcissism, emotional prejudice, positive inter-group contact, and mental health stigma.

Key Words: transnegativity, transphobia, traditional gender ideology, gender essentialism, masculinity threat

Public Significance Statement

Society can be a very hostile place for trans and gender diverse people (TGD) and the present study has helped us identify some of the factors that are associated with negative attitudes. We dscribe findings from two studies that found the belief that gender is natural (and cannot be changed) and traditional beliefs about men and women's gender roles were associated with more negative attitudes towards TGD people. These findings can be used to inform future initiatives aimed at making society a more welcoming and inclusive place for everyone.

Introduction

'Trans and gender diverse' (TGD) is an umbrella term used to describe people who experience an incongruence between the gender they were assigned at birth and their current gender identity, the latter of which may reside in or outside the gender binary (i.e., man and woman). Gender incongruence is not a new human experience. Before colonial influence, Indigenous communities worldwide accepted genders outside what is now understood as the gender binary (Robinson, 2020). Today it is estimated that around 600,000 TGD people are residing in the UK (Stonewall, 2017) with recent census data indicating that 262,000 people identified as trans in England and Wales (Office for National Statistics, 2021), although this is likely to be severely underestimated, considering many will conceal their gender identity due to fear of transnegativity[1] (Government Equalities Office (GEO), 2018; Hendricks & Testa, 2012). Concealment of gender identity is not surprising given the uniquely hostile societies many TGD people are exposed to (e.g., Winter et al., 2016). In 2021, 2630 Hate Crimes against TGD people were reported in England (Home Office, 2021), although this number is likely to be much higher given the reluctance to report crimes to the police (i.e., 88% of TGD people were found not to report the most serious crimes in one UK-based survey, GEO, 2018). Despite this, trends demonstrate that the community, or at least those in the community who are able to live authentically, is growing (e.g., Arcelus et al., 2015), which has been attributed to the increases in visibility and acceptability of TGD people due to greater opportunity in learning about gender diversity (i.e., via the media; Gillig et al., 2018; Orellana et al., 2022). Therefore, it is important to ascertain why opposition to TGD people persists in the UK population.

[1] Defined as 'any prejudicial attitude, discriminatory or victimising behavioural action overtly or covertly (MASKED FOR REVIEW).

Minority Stress

Minority Stress Theory (Brooks, 1981; Hendricks & Testa, 2012; Meyer, 2003) provides a clear association between experiences of minority stress (i.e., discrimination, prejudice and stigma) and poor mental health, with symptoms of anxiety, depression and suicidality commonplace (e.g., Drabish & Theeke, 2022). Hendricks and Testa (2012) suggest that gender identity concealment is a 'minority stressor' with research supporting the negative mental health implications of this intended protective mechanism (Brennan et al., 2021; Livingston et al., 2020; Rood et al., 2017). Depression is also a risk factor for suicidality. Concerningly, in 2012, 45% of TGD people in the UK were found to have attempted suicide at least once, and 84% had suicidal thoughts (Bailey et al., 2014). These alarming statistics and the growing community of TGD people in the UK make 'minority stress' a public health concern.

Population-level interventions

The distress that TGD people experience has been attributed, at least in part, to negative societal attitudes (Richards et al., 2015). However, population-level interventions aimed at improving attitudes have not been widely empirically supported (Cramwinckel et al., 2018). For example, diversity training has been found to be successful in increasing knowledge but not changing attitudes (Bezrukova et al., 2016). Instead, it is believed to be more effective when paired alongside other strategies such as 'social contact' (Cramwinckel et al., 2018). According to the Contact Hypothesis (Allport, 1954), inter-group contact (e.g., contact between TGD people and the cisgender community) is required to improve relations which typically are aimed at 'disproving' negative attitudes and encouraging positive judgments. However, the efficacy of social contact interventions is mixed (Cramwinckel et al., 2018) , which Michelson and Harrison (2022) hypothesised was a result of the type of contact participants were exposed to and in their US survey of 3043 people found that only close, voluntary, and consistent

relationships were positively associated with improving attitudes towards TGD people. However, a TGD identity is not always actively visible, as may be the case with other stigmatised groups (e.g., people with a disability, ethnic minorities), and therefore inter-group contact between TGD people and the cisgender population can be hard to come by. Additionally, many TGD people will be reluctant to reveal their TGD identity, especially among those whom they perceive as potentially unsupportive (Rood et al., 2017).

However, contact can also be achieved remotely through people not personally known to the target group. The Parasocial Contact Hypothesis (Schiappa et al., 2005) claims that contact can be experienced through positive portrayals of the minority group via mass media in both real and fictional observations and can be effective in improving attitudes when an affinity between the character and the group in question. Research has shown that parasocial contact with TGD characters reduces negative attitudes, providing empirical support for the PCH (Chen & Zhang, 2022; Massey et al., 2021; McDermott et al., 2018; Miller et al., 2020). For example, Massey et al. (2021) found that observing a fictional trans character was associated with a reduced desire to distance themselves from TGD people, as observing this character increased feelings of empathy and reduced intergroup anxiety. In contrast, when parasocial contact was poor quality, they found it had negative implications for attitudes towards the TGD community.

Despite these encouraging findings, interventions based on the contact and parasocial hypotheses do not address 'readiness to change' by considering the full breadth of the cognitive determinants of negative attitudes towards the TGD population and, therefore, currently take a one-size fits all approach. Interventions are required to be sensitive to all known cognitive determinants and may require tailoring to known problematic groups (i.e., those that appear to have especially negative attitudes) to enhance their effectiveness. As such, it is vital to determine what factors may promote negative attitudes towards TGD people.

Determinants of negative attitudes

Gender, traditional gender roles and gender essentialism

Binary (i.e., man/woman) gender difference in attitudes towards TGD people has been explored, with men commonly reporting more negative attitudes than women (Harrison & Michelson, 2019; Konopka et al., 2019; Perez-Arche & Miller, 2021). This difference has also been replicated in subsets of the population. For example, Riggs and Sion (2017) found in a sample of mental health professionals in Australia that men held more negative attitudes than women. This is concerning given the high prevalence of poor mental health experienced by the TGD community, but it affirms the growing literature illustrating the discriminatory healthcare experience among TGD people (Carlile, 2020; Cicero et al., 2019).

Endorsement of traditional gender ideology has also been found to be a significant predictor of attitudes (Hackimer et al., 2021; Perez-Arche & Miller, 2021), including attitudes towards trans athletes' participation in sports (Flores et al., 2020) and service in the US military (Lewis et al., 2021). Gender differences have also been observed, with men holding more negative attitudes than women, partly because men place more importance on adhering to traditional masculine gender norms (Brassel & Anderson, 2020; Perez-Arche & Miller, 2021). Similarly, gender essentialist beliefs (i.e., the view that gender is determined by sex and gender cannot be changed) are also associated with negative attitudes toward TGD people (Ching et al., 2020; Ching & Xu, 2018;Tee & Hegarty, 2006; Smiler & Gelman, 2008). Interestingly, these concepts appear to be closely aligned as Smiler and Gelman (2008) found that men who showed greater support for traditional gender roles were more essentialist in their gendered beliefs (Smiler & Gelman, 2008). This is with the exception of essentialist beliefs about the naturalness (i.e., aspects of gender are natural) and universality (i.e., people of the same gender are similar) of TGD identities which have been associated with positive attitudes toward TGD people (Schudson & van Anders, 2022).

However, most of this research has been conducted in the US or China. In China, support for TGD people is low compared to the UK (Flores et al., 2016), and evidence has shown that attitudes towards TGD people are more polarised in the US than in the UK (e.g., regarding bathroom access; Harrison & Michelson, 2019). In 2006, Tee and Hegarty conducted a survey with students (men and women) and found that heterosexism, authoritarianism, contact with sexual minorities and beliefs in biological gender predicted attitudes towards trans civil rights. However, many of the measures used were not robustly validated and given the change of attitudes overtime, findings are unlikely to be applicable to current societal attitudes. More recently, Makwana et al. (2018) found that resistance to disrupting traditional gender roles predicted transnegativity in an UK and Flemish sample. However, there are some limitations. Firstly, attitudes were not explored separately for men and women, which is essential given the gender differences evidenced above (e.g., Perez-Arche & Miller, 2021). Secondly, the role of gender essentialism was not considered. This is important, given that endorsing a traditional gender ideology predicted greater gender essentialist beliefs (Smiler & Gelman, 2008). It is possible that attitudes toward the TGD community are influenced by a combination of gender, traditional gender norms and holding gender essentialist beliefs. To our knowledge, no research using a UK population has examined gender differences in attitudes towards TGD people in the UK while accounting for traditional gender norm adherence and essentialist beliefs.

Masculinity threat

Another potential determinant which may contribute to men's heightened negative attitudes is the integrity of their gender identity. Gender identity may not be as stable as attitudes around gender and can be influenced by implicit external factors (Vandello et al., 2008). For example, a person's gender identity may become threatened by an external cue (Bosson et al., 2009) and research has shown that different situational factors can cause a

person's gender identity to be manipulated, especially among men (Harrison & Michelson, 2019; McCall & Dasgupta, 2007). According to the 'Precarious Manhood Hypothesis', the status of being a man and being masculine is elusive and tenuous (Vandello et al., 2008; Vandello & Bosson, 2013), which stems from masculinity being a social construct which must be earned and maintained. Unlike femininity and womanhood, typically acquired due to physiological changes during puberty, or specific life events, manhood must be earned by public displays (Vandello et al., 2008; Wellman et al., 2021).

As difficult as masculinity is to attain, it is relatively easy to lose. This tenuous nature of masculinity results from men's gender identity being unstable and subject to change (McCall & Dasgupta, 2007). Men who feel their masculinity is threatened respond predominantly in negative ways, including adopting an anti-femininity bias to compensate for this threat (Cheryan et al., 2015; Fowler & Geers, 2017; Willer et al., 2013). This overzealous response is termed the 'Masculine Overcompensation Hypothesis' (Ching, 2022; Willer et al., 2013). Research has shown that men who feel their masculinity is threatened are more likely to hold homophobic attitudes, drive aggressively, support war, express toughness via administering powerful electric shocks to themselves, and engage in risky sexual behaviours (Bosson et al., 2009; Fowler & Geers, 2017; Hamilton & Mahalik, 2009; Willer et al., 2013).

This bias may also manifest in negative attitudes towards gender minority groups (Ching, 2022) as they are considered antagonistic to traditional gender identities (Broussard et al., 2018). For instance, TGD people inherently oppose the traditional binary gender system and seek to redefine the conceptualisation of gender, which threatens the traditional patriarchal social structure of gender (Ching, 2022; Harrison & Michelson, 2019, Konopka et al., 2021), leading to men expressing negative attitudes to demonstrate their masculinity and reaffirming their manhood (Ching, 2022). However, research concerned with the consequences of masculinity threat for transnegativity is in its infancy, having only been tested in a small

number of countries such as the US (Harrison & Michelson, 2019), China (Ching, 2022) and Poland (Konopka et al., 2021). Given the social constructionism of gender, examining the role of masculinity threat in a more diverse range of countries is needed in order to see whether findings replicate cross-culturally. It is possible that men's responses to masculinity threat may vary depending on cultural factors. For example, Polish men conform more to traditional, hegemonic masculine ideals relative to British men (Fiałkowska, 2019). As such, in addition to examining explicit and relatively stable attitude components (e.g., gender role adherence and gender essentialism), it is vital to examine whether implicit threats to gender identity help explain transnegativity, especially among a sample of UK cisgender men.

The Current Research

Previous research has shown that identifying as a man, endorsing traditional gender norms and holding gender essentialist beliefs are associated with more negative attitudes towards the TGD community (e.g., Perez-Arche & Miller, 2021; Smiler & Gelman, 2008). Alongside explicit determinants of transnegativity, we also aim to explore the influence of implicit cues relating to gender identity and how this influences attitudes towards TGD people. Replicating existing findings in the UK is essential, given the differing attitudes toward TGD people in the US, China and Poland (Flores et al., 2016; Harrison & Michelson, 2019; Konopka et al., 2021). In addition, except for Harrison and Michelson (2019), no research has explicitly included a sample of cisgender women who experience a femininity threat. While the 'Precarious Manhood Hypothesis' and evidence suggest that threatening femininity should not negatively influence attitudes toward TGD people, it is critical to elucidate whether this is the case in a UK sample (Bosson et al., 2009; Harrison & Michelson, 2019; Willer et al., 2013). Finally, to our knowledge, no research has directly investigated whether threatening men's masculinity would influence their endorsement of the traditional binary gender system. As such, we aimed to examine two outcome processes: attitudes towards TGD people generally and

holding positive gender and sex beliefs (i.e., acceptance of identities outside of the binary and gender fluidity).

Two studies were designed to overcome previous limitations. Study 1 aimed to determine the predictive value of gender (man or woman) in attitudes towards TGD people acting through traditional gender norms and gender essentialism in a sample of cisgender men and women residing in the UK. We hypothesised that compared to women, men would:

H1: display more negative attitudes towards TGD people and show less positive gender and sex beliefs,

H2: promote greater traditional gender ideologies and gender essentialism,

H3: adhere more to traditional gender norms and holding higher gender essentialist beliefs would predict poorer attitudes towards TGD people and less positive gender and sex beliefs,

H4: demonstrate that adhering to traditional gender norms and gender essentialism would mediate the relationship between gender (i.e., identifying as a man), attitudes towards TGD people and sex and gender beliefs. For this, we hypothesised that gender would indirectly influence both criterion variables acting through traditional gender norms and gender essentialism independently and serially in that order (see Figure 1).

Study 2 aimed to investigate the influence of gender identity threat. We examined whether threatening men's and women's traditional gender identity would influence their attitudes towards TGD people and their endorsement of the traditional binary gender identity in a sample of cisgender men and women in the UK. We also include another condition that received a gender identity-affirming cue, as per previous research (Willer et al., 2013). We hypothesised that relative to cisgender men (H5) or women (H6) who did not receive this threat and men (H5) or women (H6) who received affirming feedback:

H5: cisgender men would show significantly more negative attitudes toward TGD people and less positive gender and sex beliefs following a masculinity threat.

H6: cisgender women would show no difference in their attitudes towards the TGD community or their gender and sex beliefs following a femininity threat.

Insert Figure 1 Here

Study 1

Method

Participants

Participants were sampled using the online crowd-sourcing platform Prolific (https://www.prolific.co/) and were paid £1.50 (£10.55/hr) for their participation. Our inclusion criteria required participants to identify as cisgender men or women, be straight (heterosexual), and reside within the United Kingdom. Participants were required to identify as straight as sexual minority people (e.g., Lesbian, Gay, Bisexual (LGB) people) may be more likely to have had contact with TGD people by being part of the LGBTQ+ community and, according to the contact hypothesis, be influential on TGD attitudes (i.e., more positive attitudes relative to heterosexual people Earle et al., 2021). According to Stone (2009), attitudes are more likely to be positive and LGB people adopt ally identities by drawing parallels with experiences of oppression (i.e., similar lived experience).[2]

Initially, 205 participants were recruited. One participant was excluded due to failing the attention checks used throughout the study. The final sample consisted of 204 participants, who were majority White (n = 188; 92.2%) and aged between 19 and 82 (M_{age} = 41.0, SD_{age} = 14.9). Of the total sample, 102 identified as men (M_{age} = 43.77, SD_{age} = 15.89) and 102

[2] We acknowledge that transphobia is an ongoing and varied issue within the LGBTQ+ community, but to reduce potential confounds, we restricted our sample for this reason.

identified as women (M_{age} = 38.26, SD_{age} = 13.28). Most participants reported holding undergraduate (*n* = 97; 47.55%), followed by A-level (*n* = 53; 25.98%) qualifications. Finally, most participants reported being married (*n* = 88; 43.14%), followed by identifying as single (*n* = 56; 27.45%). An a-priori Monte Carlo power analysis determined that this sample size was sufficient to identify a serial indirect effect at .80 power (Schoemann et al., 2017). MASKED FOR REVIEW ethics board provided ethical clearance for this research.

Measures

Participants initially provided informed consent and answered demographic questions. They then completed each below measures in randomised order.

Traditional Masculinity-Femininity scale (TMFS; Kachel et al., 2016)

The TMFS measured participants' adherence to traditional masculine and feminine gender norms. Participants responded to each of the 6-items (e.g., *"I consider myself as"*) on a 7-point rating scale ranging from very feminine (1) to very masculine (7). Consistent with previous approaches (Rosenfeld & Tomiyama, 2021), we recoded the items for all women in our sample. In this way, higher scores reflected greater adherence to one's own gender norms. The measure displayed good internal consistency (α = .87) and validity (Kachel et al., 2016).

Name and authors of the scale has been MASKED FOR REVIEW

The MASKED FOR REVIEW measured participants' attitudes and beliefs toward the TGD community. The measure was created by MASKED FOR REVIEW, having been adapted from a previous measure by making the item wording more inclusive. The measure consisted of 29-items and three subscales: interpersonal comfort, human value and gender and sex belief. Items included "*I would feel comfortable if my next door neighbour was trans*" and "*all adults should identify as either male or female*". Participants responded on a seven-point scale ranging from strongly disagree (1) to strongly agree (7). The overall MASKED FOR REVIEW score

indicated general attitudes towards TGD people. The gender and sex belief subscale scores indicated a participant's endorsement of traditional gender and sex beliefs. Higher scores indicate more positive attitudes and less traditional views surrounding sex and gender. The possible raw ranges of each questionnaire domain are 5–35 for human values, 14–98 for interpersonal comfort and 10–70 for sex and gender beliefs. The overall measure ($\alpha = .95$) and the gender and sex belief subscale ($\alpha = .93$) had excellent internal consistency and validity.

Gender Essentialism Scale (GES; Skewes et al., 2018)

The GES was used to measure participants' beliefs about gender being an essential societal construct. The measure consisted of 25-items (e.g., *"men have different abilities"*) responded to on a five-point rating scale ranging from strongly disagree (1) to strongly agree (5). Higher scores reflected a greater belief that gender is an essential construct. The measure has excellent internal consistency and validity (Skewes et al., 2018).

Statistical analyses

All analyses were conducted in RStudio. The anonymised data which supports our findings and the analysis code for both studies are freely available on the Open Science Framework (https://osf.io/v6gct/?view_only=78668b795b5742219b682f4e0c558f71) [Link is anonymous for peer review]. Gender was a dummy-coded variable (woman, man). The predictor and outcome variables were standardised. We constructed two serial mediation models to test our hypotheses using the *lavaan* package. We used the product-of-coefficients approach to test the indirect effects (Yzerbyt et al., 2018). Bias-corrected 95% bootstrapped confidence intervals at 10000 resamples were used. If the confidence interval does not contain zero, then this suggests an indirect effect is present.

Results

Preliminary analyses

Several preliminary analyses were first completed. The descriptive statistics, reliability estimates, and correlations for each of the measures are presented in Table 1. Normality was confirmed to be present, as the absolute values of skewness and kurtosis did not exceed ±2 (George & Mallery, 2010). The presence of several outliers was indicated by Cook's distance and visual boxplot examinations. However, upon examining these outlying values, we determined them to represent valid responses, and they were retained, as per best practice (Baguley, 2012).

Insert Table 1 Here

Primary analyses

We constructed two serial mediation models to examine our second and third hypotheses (see Figure 2). We began by testing the association between gender and each criterion variable and found a significant association for overall TGD attitudes, β = -.47, p = .001, 95% CI [-.75, -.21]. Women reported significantly more positive attitudes (M = 167.09, SD = 26.10) toward TGD people relative to men (M = 151.81, SD = 36.10; Cohen's d = .49, 95% CI [.21, .77]). Similarly, we also found a significant association for gender and sex beliefs, β = -.32, p = .022, 95% CI [-.59, -.06], with women reporting significantly more positive gender and sex beliefs (M = 50.0, SD = 12.70) relative to men (M = 45.67, SD = 14.30; Cohen's d = .32, 95% CI [.05, .60]).

Next, we examined the association between gender and each mediator variable. Contrary to our prediction, we found no evidence for a significant association between gender and holding traditional gender norm β = .26, p = .063, 95% CI [-.02, .53], Men: M = 33.40, SD = 3.59; Women: M = 32.40, SD = 4.12; Cohen's d = .26, 95% CI [-.01, .54], or gender essentialism, β = .12, p = .361, 95% CI [-.14, .38], Men: M = 77.91, SD = 13.6; Women: M = 75.35, SD = 12.6; Cohen's d = .20, 95% CI [-.08, .47].

We then tested the association between the mediators and each criterion variable while controlling for gender and the other mediator. We found that both adhering to traditional gender norms, β = -.14, p = .018, 95% CI [-.25, -.03], and having gender essentialist beliefs, β = -.62, p <.001, 95% CI [-.72, -.52], significantly negatively predicted overall attitudes towards TGD people. Similarly, when examining beliefs around gender and sex, both adhering to traditional gender norms, β = -.13, p = .015, 95% CI [-.23, -.02], and having gender essentialist beliefs, β = -.68, p <.001, 95% CI [-.78, -.59], were significantly negatively associated with holding positive gender and sex beliefs.

While the association between gender and both mediators was not significant, we proceeded with assessing the indirect effects for completeness. No evidence for an indirect association between gender and attitudes toward TGD people acting through either traditional gender norms, β = -.04, 95% CI [-.11, -.002], or gender essentialism, β = -.07, 95% CI [-.24, .08], was shown. Moreover, there was no evidence for a significant total indirect effect, β = -.05, 95% CI [-.11, -.003] acting through both mediators. Similarly, there was no evidence for a significant indirect association between gender and positive sex and gender beliefs when acting through either traditional gender norms, β = -.03, 95% CI [-.10, -.001], or gender essentialism, β = -.08, 95% CI [-.26, .09]. Moreover, there was no evidence for a significant total indirect effect, β = -.05, 95% CI [-.12, -.003] acting through both mediators.

Finally, examining the total effect of gender on attitudes toward the TGD community was significant and remained so after controlling for TMFS and GES scores, β = -.32, 95% CI [-.51, -.13]. This suggests that gender (identifying as a man) continued to be a negative predictor of attitudes toward TGD people after controlling for traditional gender norms and gender essentialism. In contrast, the total effect for gender was significant and positive but became non-significant when controlling for TMFS and GES scores, β = -.15, 95% CI [-.33, .03].

Insert Figure 2 Here

Discussion

As predicted, Study 1 found men to display more negative attitudes towards TGD people and show less positive gender and sex beliefs compared to women. Adherence to traditional gender norms and holding gender essentialist beliefs also predicted poorer attitudes towards TGD people and less positive gender and sex beliefs. These findings support previous research conducted in the US and China (e.g., Perez-Arche & Miller, 2021; Smiler & Gelman, 2008). However, in contrast to our hypothesis, we found no evidence that men adhered more strongly to traditional gender norms or held greater gender essentialist beliefs. Similarly, we found no evidence that adherence to traditional gender norms and essentialist beliefs would mediate the relationship between gender and attitudes towards TGD people or sex and gender beliefs. Given the strong association between gender and transnegativity, it is essential to establish whether certain factors may promote heightened negative attitudes in men. For example, implicit influences on a person's gender self-concept or identity. In Study 2, we explored whether priming cisgender men and women with a masculinity and femininity threat cue would alter their attitudes toward TGD people.

Study 2

Method

Participants

Participants for study two were similarly sampled using the online crowd-sourcing platform Prolific (https://www.prolific.co/) and were paid £1.00 (£7.50/hr) for their participation. The inclusion criteria remained the same as in study one. In total, 330 participants were recruited, who were majority White (n = 298; 89.49%) and aged between 19 and 82 (M_{age} = 41.8, SD_{age} = 13.6). Of the total sample, 165 identified as men (M_{age} = 44.44, SD_{age} = 14.18)

and 165 identified as women (M_{age} = 39.22, SD_{age} = 12.52). Participants were then randomly allocated into one of three experimental conditions (n = 110; 55 men, 55 women): masculinity/femininity threat, masculinity/femininity affirmation and control conditions. Demographic details separated by condition and gender are shown in Table 2. An a-priori power analysis using the *pwr* package in RStudio indicated a sufficient sample size to detect a moderate effect size (f = .25) with a power of .80. MASKED FOR REVIEW ethics board provided a favourable ethical opinion of this research.

Insert Table 2 Here

Materials

Manipulation measures. To manipulate gender identity threat, we asked participants to complete the Bem Sex Role Inventory (BSRI), a personality measure designed to capture gender role adherence (Bem, 1974). Participants were also asked to complete the TMFS at this stage to increase the realism of the score they received (Kachel et al., 2016). Using the same procedure employed in prior research (e.g., Glick et al., 2007; Harrison & Michelson, 2019; Salvati et al., 2021), participants were informed that they would complete a measure of gender identity and would receive feedback ranging from 0-50, whereby a score of 0 represented an extremely masculine personality, and a score of 50 represented an extremely feminine personality.

Participants in the threat condition received different feedback depending on their self-declared gender. Women were told their score was 13, which was within the "*masculine range of responses*". Men were told their score was 32, which was within the "*feminine range of responses"*. Masculine feedback was presented in blue and feminine feedback was presented in pink text to reinforce the gender associated with each score (Salvati et al., 2021). In the affirm condition, participants received the opposite feedback, such that men were informed that

their responses were within the masculine range. In contrast, women were informed that their responses were within the feminine range. Participants were also provided with a visual depiction of their score concerning the average UK score for men and women, taken from prior research (Harrison & Michelson, 2019).

Participants in the control condition completed the Big Five Inventory 10 (BFI-10; Rammstedt & John, 2007). This measures participants' self-reported extraversion, agreeableness, conscientiousness, emotional stability, and intellect. Upon completion, participants were informed they had moderate-above average scores on the five dimensions. This procedure is consistent with prior research and served as a suitable control group as the feedback was not related to gender identity concepts (Harrison & Michelson, 2019). Our primes are illustrated on the OSF.

Manipulation check. We used manipulation checks to determine whether the prime was effective. We asked participants in each of the three conditions to rate five emotional adjectives concerning how they felt at that moment, using a five-point rating scale ranging from not at all (1) to extremely (5). The items included "sad", "nervous", "annoyed", "threatened", and "discomforted". A total score was produced by summing the five items, with higher scores indicating negative affect. A second manipulation check was only administered to the threat and affirmation conditions, asking participants to rate how satisfied they were with their scores on a seven-point rating scale ranging from extremely dissatisfied (1) to extremely satisfied (7). These checks were consistent with prior research (Ching, 2022; Salvati et al., 2021). We reasoned that men in the threat condition would show (a) more negative emotion scores relative to the affirm and control conditions and (b) be less satisfied with their score relative to the affirm condition. We predict that regardless of condition, women will show no differences in emotion or satisfaction scores.

Post-manipulation measure. Following the manipulation check, participants were asked to complete the MASKED FOR REVIEW (measure that assessed attitudes towards the TGD community) measure.

Procedure

Participants were initially directed to Qualtrics (www.qualtrics.com), presented with an information sheet, and asked to provide informed consent. Upon consenting, demographic information about age, relationship status and education were collected. Consistent with a double-blind approach, Qualtrics randomly allocated participants into one of the three conditions. Participants in the threat and affirmation condition were first presented with information on the measure they were about to complete, stressing that this measure accurately calculated a person's gender identity score. They then completed the BSRI and TMFS, with the questions presented in randomised order. The control condition completed the BFI-10, which was also randomised. To improve realism and ensure participants believed that a score was being calculated, we presented a screen asking participants to wait while the score was calculated based on their responses, which was presented for a minimum of 30 seconds. After this, distinct feedback was provided depending on the experimental condition. Then, participants completed the MASKED FOR REVIEW (measure that assessed attitudes towards TGD community), with the questions presented in random order. Finally, they were provided with an in-depth debrief regarding the study's aims, including information on where to complete an actual gender identity questionnaire should they desire. Participants were directed back to Prolific to claim their payment.

Results

Prior to conducting any analyses, the assumption of normality was confirmed by examining the absolute values of skewness and kurtosis, revealing that both did not exceed ±2

(George & Mallery, 2010). Second, Levene's Test of equality of variance revealed no significant departures from the homogeneity of variance assumption. Given this, the analysis was conducted as intended.

Manipulation check

Before examining the primary hypotheses, we conducted preliminary analyses to assess the effectiveness of our manipulation. Firstly, two separate one-way ANOVAs were completed for men and women, examining whether there were any differences in scores on the emotion measure between groups. The results revealed no evidence for significant differences between conditions for men, $F(2, 162) = 2.75$, $p = .067$, $\eta^2 = .03$. However, there was evidence for significant differences between conditions for women, $F(2, 162) = 6.16$, $p = .003$, $\eta^2 = .07$. Holm-corrected pairwise comparisons revealed that women in the threat condition showed significantly more negative affect ($t(162) = 3.51$, $p = .002$; $M = 7.60$, $SD = 3.34$) relative to women in the affirmation condition ($M = 5.82$, $SD = 1.99$), but no difference was shown with women in the control condition ($t(162) = 1.61$, $p = .120$; $M = 6.78$, $SD = 2.49$), or between the affirm and control conditions ($t(162) = 1.90$, $p = .120$).

Second, independent samples t-tests were used to assess differences in satisfaction scores. This revealed evidence of significant differences for men, $t(108) = 5.36$, $p < .001$, Cohen's $d = 1.03$, 95% CI [.63, 1.43], with men in the threat group showing significantly lower satisfaction with their masculinity score ($M = 3.75$, $SD = 2.21$) relative to the affirm condition ($M = 5.58$, $SD = 1.24$). Similarly, there was evidence for a significant difference in satisfaction ratings for women with regards to their femininity score, $t(108) = 5.83$, $p < .001$, Cohen's $d = 1.12$, 95% CI [.72, 1.52], with those in the threat condition showing significantly less satisfaction, ($M = 3.27$, $SD = 1.28$), relative to those in the affirm condition, ($M = 6.29$, $SD = 3.62$). These findings partially support that our manipulation was successful, and explanations for this are provided in the discussion.

Primary analyses

We began by testing the effect of masculinity threat on men's attitudes towards the TGD community and beliefs surrounding gender and sex as a construct. For this, we ran two one-way ANOVAs. These analyses revealed no evidence for a significant effect of condition on overall TGD attitudes, $F(2, 162) = .13$, $p = .875$, $\eta^2 < .01$, or on scores for the gender and sex belief subscale, $F(2, 162) = .04$, $p = .964$, $\eta^2 < .01$. This provides no evidence to support our hypothesis for men. Next, we tested the effect of femininity threat on women's attitudes in the same manner. These analyses also revealed no evidence for a significant effect of condition on overall TGD attitudes, $F(2, 162) = 1.79$, $p = .170$, $\eta^2 = .02$, or on scores for the gender and sex belief subscale, $F(2, 162) = 2.77$, $p = .066$, $\eta^2 = .03$. This provides evidence to support our hypothesis for women. Table 3 reports the means and standard deviations for both outcome variables by condition.

Insert Table 3 Here

Discussion

In Study 2, we examined whether threatening men's and women's traditional gender identity would influence their attitudes towards TGD people and their endorsement of the traditional binary gender identity. In contrast to what was hypothesised, following a masculinity threat cisgender men did not show significantly more negative attitudes toward TGD people and less positive gender and sex beliefs relative to cisgender men who did not receive this threat or who received affirming feedback. As anticipated, cisgender women showed no difference in their attitudes towards the TGD community or their gender and sex beliefs following a femininity threat relative to cisgender women who did not receive this threat or who received affirming feedback.

Our findings support the socially constructed nature of gender and gender-related attitudes as established in previous research. In contrast to the current UK-based findings, research in other countries has found masculinity threat to be associated with more negative attitudes towards TGD people (e.g., Ching et al., 2022). For example, Konopka et al. (2021) found that Polish men exposed to a masculinity threat experienced a greater negative emotional response and heightened transnegativity than those who received no threat cues. Previous research has established that perceptions of masculinity do vary by country (Fiałkowska, 2019). DiMuccio et al. (2017) explain these differences in perceptions of masculinity when they found that men in the US viewed manhood as more precarious than Danish men, as the former group perceived needing to demonstrate manhood through the physical ability of the body rejecting femininity. In contrast, the Danish men described manhood as a physical embodiment and valued the role of femininity within this. Men in the UK may be similar to Danish men in their perceptions of manhood. Hence a threat to masculinity may not have been deemed problematic for a UK sample of men. However, for completeness, future research should explore cross-cultural perceptions of masculinity while accounting for additional variables such as political identity, that are also known to be influential (MASKED FOR REVIEW).

Similarly, attitudes towards the TGD community within the UK may overall be more favourable compared to other countries (the US, China and Poland) that have previously found negative associations between masculinity threat and transnegativity. For example, the cultural climate of Poland, which was ranked 44/49 by the ILGA-Europe in terms of human rights laws for LGBTQ+ people, is very different to the UK, which was ranked 14/49 by the ILGA (ILGA-Europe, 2022). Indeed, this pattern of findings was also supported by the self-reported TGD attitudes across all conditions shown in which our UK sample generally reported positive attitudes and beliefs on average. It may be that other established responses to masculinity threat (e.g., aggressive driving; Braly et al., 2018) may still occur for UK men. However, given that

our sample of men reported relatively positive TGD attitudes and men in the UK generally support TGD issues (Morgan et al., 2020), transnegativity may not be an appropriate compensatory mechanism for UK men. Despite this finding amongst our sample, the UK can still be a hostile place for TGD people to reside given the prevalence of high-profile public debates concerned with TGD lives that are initiated and maintained by certain people drawing on arguments that stem from transgender-exclusionary radical feminism. Therefore, future research may want to engage with participants who hold such views to understand predictors of negative attitudes more completely.

The participants' age could have also been responsible for the lack of identified effect of our masculinity threat cue on self-reported transnegativity. Previous research (Ching, 2022; Harrison & Michelson, 2019, Konopka et al., 2021) has recruited student samples with a mean age range much lower than what was reported in the current study (M_{age} = 41.8, SD_{age} = 13.6). During early adulthood, it has been argued that masculinity and femininity are highly valued and strongly associated with one's social identity, and a threat to gender has been shown to be negatively associated with attitudes towards gender and sexual minority populations (Konopka, et al., 2021). Hence a gender identity threat cue may be more relevant to younger individuals. In the current sample, the mean age of participants was much greater than that of a typical student sample. It, therefore, may be an explanation for the lack of significant effect.

Finally, it could also be argued that our masculinity threat manipulation was ineffective. In contrast to what we hypothesised, we found that there was a lack of effect of masculinity threat on reporting negative emotions. This finding is consistent with Konopka et al. (2019), who also found no change in self-reported affect following a masculinity threat cue. Yet, they demonstrated that masculinity threat did increase transnegativity. It may be that the lack of self-reported negative emotional response to a masculinity threat is a mechanism to protect masculinity and, as a result, an inability to express emotions effectively (Bennett, 2007).

Indeed, the expression of emotions is intrinsically linked with a feminine identity, and men are shown to be less likely to report instances of emotional or psychological distress (Ridge et al., 2011). As masculinity threat cues are shown to cause an antifeminine bias and reduce engagement in feminine activities, men may be reluctant to express negative affect (Cheryan et al., 2015; O'Brien et al., 2005). Despite this, we did find significant differences in satisfaction scores, with men reporting themselves to be less satisfied when receiving a threatening score, consistent with previous research (Ching, 2022). Similarly, the gender identity threat cues used in the present study have been well-established to produce a response (e.g., Glick et al., 2007; Harrison & Michelson, 2019; Salvati et al., 2021). As such, we deem this an unlikely explanation for the lack of effect.

General Discussion

Previously, the effectiveness of anti-transnegativity interventions has been questioned (Cramwinckel et al., 2018). The current research aimed to identify determinants of transnegativity within a UK sample to improve the effectiveness of population-level anti-prejudice interventions against the TGD community. Study 1 explored gender, gender ideology and gender essentialism as predictors of transnegativity, while Study 2 explored the effect of gender identity threat on attitudes towards the TGD population. Cumulatively, our findings support that men have more negative attitudes towards TGD people compared to women. Previous research in different cultural contexts has also shown this (e.g., Harrison & Michelson, 2019; Perez-Arche & Miller, 2021), suggesting that being a man universally predicts negative attitudes. What is less clear from the current studies is what additional factors may sustain negative attitudes towards TGD people among men in a UK context.

In Study 1, we found that adherence to traditional gender roles and gender essentialist beliefs predicted TGD attitudes which supports previous research (e.g., Perez-Arche & Miller, 2021; Smiler & Gelman, 2008). This emphasises that anti-prejudice interventions towards the

TGD population should target beliefs regarding gender ideology and essentialist beliefs to be effective, and this is likely to be so in different cultural contexts. However, gender was neither significantly associated with nor was there a significant indirect effect for gender acting through either variable. This may suggest that other gender-specific variables may explain men's generally more negative opinions toward TGD people. Recently, Marchlewska et al. (2022) showed that collective narcissism, or the belief that one's group is greater than other groups, predicted prejudice toward gay and lesbian people.

In the general anti-prejudice literature, cognitive determinants have primarily been the focus, but research has found emotional determinants to be as predictive, if not more so. Talaska et al. (2008) found that emotional prejudices were better predictors of self-reported and observed racial discrimination than stereotypes and beliefs. For example, gender self-esteem, or whether a person incorporates traditional gender notions into their self-esteem, has been shown to predict transnegativity (Brassel & Anderson, 2020). As such, future research may wish to explore other potential mechanisms to explain why men generally report more negative attitudes toward TGD people. Identifying these variables is essential to understand the mechanism to make TGD anti-prejudice interventions more effective.

Additionally, it may be useful to consider the role of mental health stigma and how this may further compound transnegativity. The TGD community has long been pathologized, which is compounded by gender-related diagnoses being included in the Diagnostic and Statistical Manual for Mental Disorders (DSM) and International Classification of Diseases (ICD). This is problematic as experiencing gender incongruence is not considered a disorder, just like being part of an ethnically diverse group is not considered so (Richards et al., 2015). Despite this understanding being available amongst affirmative specialists (e.g., healthcare professionals, support organisations, and academics), this has not necessarily been translated to the general population. For example, Reed et al. (2015) found in a hypothetical job interview

study that people were less likely to appoint trans people due to mental health stigma, especially when the candidate was a trans man. This indicates that mental health stigma may also inform beliefs regarding the TGD community and contribute to transnegativity in society.

In some cultural contexts, where there is a greater emphasis on upholding masculinity, a threat to masculinity is problematic (e.g., DiMuccio et al., 2017). However, in a UK context, Study 2 did not replicate these findings. Given the increase in public TGD narratives in the UK mainstream media (e.g., '*Heartstopper*' featuring '*Ellie*' a trans character, Sam Smith, a British-made singer and songwriter who recently came out as non-binary) and previously shown positive impacts of parasocial contact (e.g., Massey et al., 2021), future research may wish to control for the effects of previous inter-group contact, especially when this contact has been positive. However, at the same time, the increase in negative public narrative around TGD lives in the UK also needs to be acknowledged. TGD people have been the centre of several recent high-profile public debates concerned with the gender binary with significant debate occurring on social media platforms such as Twitter and in certain factions of the mainstream UK media. Future research may want to consider how these more recent debates steming from transgender-exclusionary radical feminism continue to shape public TGD attitudes.

Given that perceptions of masculinity vary cross-culturally, it may also be important to account for factors that may increase the effect of masculinity threat at the individual level. Ching (2022) showed that the effect of masculinity threat was greater for men who reported that their self-worth was contingent on their masculine identity. Indeed, negative attitudes toward gender and sexual minority groups appear greater when individuals associate with their respective gender identities (Marchlewska et al., 2022). Future research should explore the effect of masculinity threat and the interaction with individual predictors (e.g., gender role adherence). As TGD anti-prejudice interventions would inherently act as a masculinity threat

(by promoting alternative views of gender), identifying groups particularly at risk of responding negatively would allow for TGD anti-prejudice interventions to be more effective.

While our work was conducted within a British context and the extent to which such findings may be applicable in other contexts can be brought to bare, it is worth noting that this work can help to further elucidate context specific nuances that exist in attitudes towards sexual and gender minorities. For example in their work examining cross cultural attitudes towards sexual minories between the UK, Ireland, Canada and the US, MASKED FOR REVIEW (YEAR) noted that the universality of attitudes, and the underlying predictors of such attitudes, should not be assumed cross culturally. As such, as is the case with this research, the efficacy and utility of interventions may well differ depending on the context in which it they are applied.

Limitations

The research reported on in this manuscript was concerned with predominantly a White sample. Given that the finding supports the socially constructed nature of gender, recruiting participants from other ethnic groups within the UK may yield different results with regard to the determinants of transnegativity. Additionally, we excluded LGB people on the basis of them being more likely to have contact with TGD people and therefore positive attitudes (Earle et al., 2021; Stone, 2009). Of course, we cannot generalise this assumption to the whole LGB community and assume sexuality identity is exclusively a protective factor for negative TGD attitudes. Future work should look to explicitly measure inter-group contact and control for this variable.

A potential limitation of Study 2 is that an online experimental design was employed, which does not allow the experimenter to control the participant's experimental environment (e.g., distractions). Some research has employed masculinity threat primes in person, including

having men complete *feminine* tasks (e.g., hairstyling; Bosson et al., 2009), and have used the same threat cue used presently (e.g., Ching, 2022). However, other research has successfully employed this paradigm online (Wellman et al., 2021). Peyton et al. (2021) also found that online experiments conducted during the pandemic produced similar findings to in-person testing. Nevertheless, future research may wish to replicate the findings from Study 2 using a lab-based experimental design.

Conclusion

Current studies suggest that being a man universally predicts negative attitudes. Evidence also suggested that anti-prejudice interventions towards the TGD population should target beliefs regarding gender ideology and essentialist beliefs to be effective, and this is likely to be so in different cultural contexts. What is less clear from the current studies is what additional factors may sustain negative attitudes towards TGD people among men in a UK context. Future research will want to consider additional determinants of transnegativity, such as collective narcissism, emotional prejudice (e.g., self-esteem), positive inter-group contact and mental health stigma.

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