

How voice transition and gender identity disclosure shape perceptions of trans men in the hiring process.

Abstract

Trans men often face discrimination in the hiring process. However, it remains unclear whether the disclosure of gender identity and perceived masculinity during transition play a role in first impressions and perceived job suitability of trans male applicants. Across two studies (N = 332) we examined how cisgender heterosexual participants perceived a transgender male candidate in terms of his masculinity and whether they judged him suitable for a stereotypically masculine job. Such judgments were first based on the candidate's voice at different stages of gender transition and, secondly, after disclosure of gender identity in the job application form. In Study 1, participants judged a trans man at the beginning of the voice transition (3 months on testosterone) or a trans man in advanced transitioning (1 year on testosterone). Study 2 involved the judgments of the same trans men at different times in the voice transition (1 week - beginning, 6 months - intermediate, 1 year - advanced). Masculinity judgments were influenced by voice transitioning, but judgments were adjusted after his gender identity was disclosed. Disclosure created an advantage in perception of the trans man candidate as more suitable for the role, especially when he was at the beginning of the voice transition when his voice was not perceived as masculine. Findings are discussed in relation of trans men's employability and identity disclosure.

Keywords: gender identity, voice, leadership, job suitability, first impression

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In 2018, data from the UK national LGBT survey showed that only 65% of trans women and 57% of trans men have had a paid job in the last 12 months (Government Equalities Office, 2019). One of the difficulties that trans individuals often face is discrimination during the hiring process (James et al., 2016). In the current UK context, discrimination against trans people is common (Bayrakdar & King, 2023) and one in three employers report being unlikely to hire a trans person (Crossland Employment Solicitors, 2018). Thus, there is a pressing need to understand how discrimination against trans people happens in the hiring and employment context. This research contributes to the recent work about trans men ‘doing’ gender at work (Jeanes & Janes, 2021) that examined whether conforming to or challenging masculinity has consequences for trans men in the workplace. This follows calls for more studies examining how challenging gender normativity is important in the professional context (see Schilt, 2006; Thanem, 2011).

The likelihood of getting a job offer for trans people may not only depend on their gender identity but also on their gender presentation. Gender identity refers to the way a person identifies (e.g., man, woman, trans woman, trans man, non-binary, etc.), and it is information that an individual can decide to conceal or disclose. Gender presentation, instead, is associated with ‘doing’ gender (West & Zimmerman, 1987). It reflects the way in which individuals express their gender – through voice, body, clothing – which may change throughout their gender transition (see Budge et al., 2010) and across contexts (see Murh et al., 2016). So far, studies have investigated how trans people manage their identity as well as how ‘passing’ (i.e., being

perceived as the gender they identify with) can be beneficial at the workplace (see Geijtenbeek & Plug, 2018; Jeanes & Janes, 2021; O'Shea, 2020). Such evidence is limited to the perspective of trans individuals. However, stigma is multifaced and involves the majority's perspectives too (Link & Phelan, 2001).

This research uses an experimental approach (see Dray et al., 2020) and focuses on the perpetration of discrimination by the majority group. It examines whether cisgender individuals enact discrimination toward trans men applying for stereotypically masculine roles depending on the processes of voice gender transition and gender identity disclosure. The present study focused on voice because it is central to person perception in the hiring context (Rakic et al., 2011). To our knowledge, no study has examined whether voice and voice transition trigger discrimination against trans men. Still, trans men mention voice being associated with misgendering and identity risks at work (see Jeanes & Janes, 2021).

Before presenting the studies and findings, we will outline research on trans people's experiences of discrimination at work to understand the extent to which these experiences vary depending on identity management and gender presentation. This will allow us to contextualise our study in the existing literature on trans men at work. Then, we will present literature showing that trans individuals, especially trans men, can 'do' gender through voice and this influences how they are perceived. Finally, we will review models of stereotyping and hiring discrimination that can explain why trans men would be discriminated against in the hiring process.

Trans Individuals and Work Discrimination

Trans people struggle to get employment, they are bullied and harassed in the workplace, and are at a higher risk of getting promotions denied and of being fired (Beauregard et al., 2018; Brewster et al., 2014; Dispenza et al., 2012; James et al., 2016; Mizock et al., 2018). Studies

have shown that, compared to cisgender candidates, trans individuals who disclosed as such in their job application were less likely to be called back for job interviews (Granberg et al., 2020; McFadden, 2020; Rainey et al., 2015). Trans people may engage in identity management when deciding whether to conceal or disclose their identities with employers and co-workers (Dietert & Dentice, 2009). Disclosure can come with risks such as being discriminated against but also advantages such as dismantling perceived gender ambiguity, increased trust, and acceptance by others (Connell, 2010; Martinez et al., 2017; Worst & O'Shea, 2020). Such identity management is linked to the way trans people 'do' and 'display' gender and, as a consequence, to how others perceive them (see Marques, 2019).

During the process of gender transition, trans people face an increased risk of discrimination (Ozturk & Tatli, 2016; Rood et al., 2017; Scott et al., 2011), which may contribute to their decisions to manage the visibility of their transition (Hansbury, 2005; Rundall & Vecchietti, 2010). Before starting their transition, trans people fear rejection and try to prepare for their 'workplace' transition (Budge et al., 2010). When the gender transition starts, they often need to come out at work, deal with employers and colleagues' reactions, and with the fact that their gender presentation may be perceived as 'incongruent' with the gender they identify with (Budge et al., 2010; Dietert & Dentice, 2009). Employers may be particularly concerned with applicants whose characteristics (e.g., voice and appearance) do not stereotypically conform to their gender identity (see Bates et al., 2020). Indeed, conforming to traditional binary gender and 'passing' are factors linked to hiring decision (Budge et al., 2010; Leppel, 2016). Individuals belonging to the majority groups (cisgender heterosexuals) have difficulties in accepting that their (gender) expectations are disconfirmed and tend to stigmatize those who violate them (Jussim et al., 1987). This may change at later stages of the transition when trans individuals are perceived as

more gender-conforming, specifically for trans men. Being seen by co-workers in the same way trans men see themselves is linked to less perceived discrimination (Martinez et al., 2017).

Moreover, Schilt (2006) found that trans men who succeed in ‘passing’ tended to have advantages, such as receiving better performance appraisals, possibly because they are seen as belonging to the privileged gender. Not only that, Jeanes and Janes (2021) have pointed out how trans men who conform to traditional ‘masculinity’ experience less difficulties at work and have more positive working experiences. Hence, ‘doing’ gender in a way that ‘convinces’ the cisgender majority can help trans men achieve some positive outcomes in the work context.

Voice and Gender Transition

Voice is important for gender presentation among trans men (see Hodges-Simeon et al., 2021; McNeill et al., 2007), especially during voice transition (see Zimman, 2018). Gender can be ‘performed’, and trans individuals can express their gender identity vocally. Trans men’s vocal changes are the consequence of testosterone treatment (Gooren, 2005) or the combination of testosterone and voice therapy. A longitudinal study (Nygren et al., 2016) examined the voice change of 50 trans men before and after 3, 6, and 12 months of testosterone treatment. This study looked at changes in the fundamental frequency (F0), which commonly refers to the perceived differences in pitch. Male voices are usually characterized by lower F0 than female voices. The results showed a decrease of mean F0 and mode F0 over time and that, after 12 months from the beginning of the testosterone treatment, the trans men’s voices had similar F0 as cisgender males. Other evidence indicates that within 6 months some trans men already reach a mean F0 that is similar to cisgender men, and this continues to decrease over time (Irwig et al., 2017; Cosyns et al., 2013; see also Azul et al., 2017). Studies also suggest that the voices of trans men in advanced testosterone treatment who had voice training are perceived as ‘male’ sounding

(Buckley et al., 2020; Cler et al., 2020; but see Van Borsel et al., 2009) and that there is a positive correlation between how speakers perceive themselves and are rated as masculine sounding by listeners (Watt et al., 2018). This literature highlights the importance of examining trans men's voices. Voice plays a key part in 'doing' gender, but it remains to be examined how listeners' perceptions of trans men's voices affect their judgments in the hiring context.

Traditional Masculinity and Hiring Decisions

Gender perception is particularly relevant when applying for jobs that are considered stereotypically masculine or feminine. Traditional masculinity is defined as characteristics (e.g., traits, interests, behaviours) that are perceived to be more typical of men than women (see Constantinople, 1973). Traditional masculinity goes hand in hand with the attribution of traits concerning competence and agency and a lack of attribution of warmth and communion (Abele et al., 2014; Fiske et al., 2002). For instance, individuals tend to see cisgender men as more masculine and competent and as less feminine and warm (see Wojciszke, 2005). Moreover, different masculine characteristics are associated one with another like, for instance, having a low-pitched voice is associated with higher competence (Klofstad et al., 2012). Masculinity can be seen as an identity performance (Butler, 1990) that leads individuals to see themselves as 'men' and others to form a man-consistent impression. In this regard, Constantinople (1973) speaks about gender role identity as concerning a comparison between a person's gender identity and gender norm expectations, that can pertain to suitability for given professions. Indeed, gendered representations reflecting masculinity/femininity and stereotypes of competence and warmth affect individuals' opportunities in the workplace (Martin & Slepian, 2020).

Masculinity has been considered a key aspect of gender-based discrimination at work. The *lack-of-fit model* (Heilman, 1983) suggests that gender triggers stereotypical expectations that

can be seen as incongruent with specific jobs (for prescriptive norms see the role congruity theory; Eagly & Karau, 2002). For instance, because women (see Kock et al., 2014) are stereotyped to be communal but lacking masculinity and agency, they are seen as incongruent with stereotypically masculine roles. The role of traditional masculinity is clear in the ‘think manager-think male’ phenomenon (Schein, 1973) suggesting that managerial positions are seen as roles that require stereotypically masculine characteristics (see Koneig et al., 2011) and thus individuals (e.g., cisgender women, cisgender gay men) who are seen as lacking masculinity, competence, and agency are not perceived as a good fit for such roles. Although this literature has been used as a theoretical framework for research on cisgender women, perceived masculinity may play a role in workplace discrimination against trans men, too.

Recent studies have shown that an employee assigned male at birth who identified as a trans or nonbinary person was liked less and more likely discriminated against than when the person identified as cisgender (Dray et al., 2020; Van Borm et al., 2018, 2020). However, these studies explicitly mentioned the target’s sex and gender identity to participants. We have illustrated above how gender presentation and perception can be affected by voice transition. It is therefore important to test which role voice plays in hiring decisions. We have drawn on the voice-based discrimination literature to inform our research. Specifically, we investigated studies looking at the interplay between voice-based identity, masculinity, and gender stereotyping. Studies have demonstrated that vocal features are cues to gender stereotyping (Ko et al., 2006; Krahé & Papakonsatntinou, 2020; Krahé et al., 2021) and that, in hiring situations, sounding masculine increased perceived competence and this is more important than the candidate’s actual gender (Ko et al., 2009). Together with the perception of masculine/feminine-sounding speakers comes the recent work concerning stigmatisation of gay/lesbian-sounding speakers. Sounding gay is

associated with cisgender men sounding feminine, while sounding lesbian is associated with cisgender women sounding masculine (see Fasoli et al., 2016). Interestingly, trans men can be perceived as gay-sounding men, namely as men whose voices ‘deviate’ from prototypically masculine and straight sounding (see Zimman, 2013). Hence, literature on the consequences of sounding gay in the workplace becomes particularly important for our research. Sounding gay/lesbian not only triggers perception of the speaker as being less masculine/feminine, less competent and moral, but also less suitable for managerial roles (Fasoli et al., 2017; Fasoli & Hegarty, 2020). Such results have been initially read in line with the lack-of-fit and think-manager-think-male theories since gay-sounding candidates are perceived as lacking masculinity (Fasoli et al., 2017). However, more recently, it has been found that it is the perception of gay/lesbian-sounding speakers as lacking competence, and sometimes morality, that explained the perception of them as not suitable for managerial roles. Competence and morality are associated with power and high status (Ellemers et al, 2008; Ko et al., 2015). These results have been interpreted in line with status beliefs suggesting that attributing power, competence, and status to one group over the others is a way to maintain status hierarchies (see Ridgeway, 2001). It is therefore likely that gender conveyed by voice would affect judgments of trans men in a similar way either because of a lack-of-fit or status beliefs.

Overview

We conducted two experimental studies examining the extent to which hiring discrimination against trans men job candidates depended on their voice transition and identity disclosure. McFadden’s (2020) suggests that studies on hiring discrimination against trans people need to consider multiple factors. At the macro level, the legal context needs to be specified. The current studies have been conducted in the UK where the Equality Act 2010 prohibits

discrimination of people whose gender identity is different from their sex assigned at birth as well as discrimination by perception, namely biases happening on the mere perception of the person as belonging to a minority group. McFadden (2015) also indicates that whether it is a stereotypically masculine/feminine role (meso-level factors) can matter. Given our focus on perceptions of trans men, we focused on a stereotypically masculine position (i.e., a graduate economic adviser). Finally, at the micro level, research should focus on factors specific to the lived experiences of trans people, including gender identity disclosure and gender presentation that can be influenced by voice transition.

We tested several hypotheses. Gender perception matters when employers judge candidates for stereotypically masculine roles (Koneig et al., 2011). Gender transition allows trans men to make voice changes and achieve a masculine-sounding voice over time. Hence, we predicted the trans male candidates would be perceived as more masculine but would also be seen as more suitable for a leadership role when they were in later stages of their voice transition than at the beginning of the transition (Hypothesis 1). Impressions are constantly updated depending on the availability of new information (Brambilla et al., 2019). Disclosing stigmatised identities can be seen in a positive way (Collins & Miller, 1994; Fletcher & Everly, 2021), but it can also come with risks of discrimination (Flage, 2019). We tested whether participants changed or adjusted their impressions and evaluations of the candidate after learning that he was a trans man. We predicted disclosure would play different roles depending on the voice transition stage. For candidates at the beginning of their transition, we expected that gender identity disclosure would increase participants' perception of him as more masculine and as more suitable for the role (Hypothesis 2a). Indeed, when the candidate's voice does not sound stereotypically masculine, his gender identity may compensate, decrease ambiguity, and convey

the idea that he can be a good fit for the role. However, disclosing to be trans may be disadvantageous for trans men whose voices sound masculine. In this case, their stigmatised status may decrease their perceived masculinity and, because it violates voice-based expectations, it would result in discrimination (Hypothesis 2b). Along with testing these hypotheses, we explored whether stronger job suitability judgments because of advanced voice transition or identity disclosure were explained by the increased perception of masculinity or attribution of status (i.e., competence and morality). This would allow us to examine whether positive or negative biases occur because of masculine expectations as the lack-of-fit theory would suggest (see Granberg et al., 2020) or because of status beliefs as recently shown in the gay voice literature (see Fasoli & Hegarty, 2020).

It is worth noting that in our studies we used job candidates with American accents, while recruiting mostly British participants. The choice of having American-accented English speakers was influenced by the recordings' availability. British participants may have assumed the candidates to be foreigners. Literature suggests that foreign-accented speakers are perceived as lacking status (see Dragojevic et al., 2020). However, this may not be the case when both speakers and listeners are English native speakers (Stewart et al., 1985; Wilson & Bayard, 1992). Standard American and British English are both considered high-prestige language varieties (Giles, 1970; Hiraga, 2005). Hence, although our speakers may have sounded foreign to our participants, their American accent is unlikely to have triggered negative evaluations.

Study 1

Study 1 examined whether heterosexual cisgender participants (i.e., people with whom their sex assigned at birth does not differ from their gender identity) from a first impression of a trans man and rate his job suitability as a graduate economic adviser. We exposed participants to

the voice of a trans man who was at the beginning of testosterone treatment (3 months) or in an advanced stage of the treatment (1 year). We first assessed cisgender listeners' first impressions when gender was merely conveyed by and inferred from voice. Next, we reassessed these judgments after disclosing the candidate's transgender identity in the job application form.

Method

Design

A 2 (Voice Transition: 3 months vs. 1 year) x 2 (Gender identity: unknown vs. disclosed) mixed design with the first variable as a between-participants factor and the second variable as a within-participants factor was implemented.

Participants

Two hundred cisgender participants completed the study. We excluded those who identified as part of a sexual minority ($n = 20$) or preferred not to say their sexual identity ($n = 1$) because being part of the LGBT community may favour trans individuals, and we also excluded those who misremembered the candidate's gender identity ($n = 30$). The final sample consisted of 152 cisgender heterosexual participants. The majority identified as women and held a university degree (see Table 1). A G-Power sensitivity analysis for a mixed design with 4 groups and two repeated measures with $\alpha = .05$, $1-\beta = .80$, $N = 152$, suggested that our sample size allowed us to detect a small to medium effect size, $f = .13$.

Table 1. Demographic information across studies

	Study			
	Study 1		Study 2	
	<i>n</i>	%	<i>n</i>	%
Gender				
Cisgender woman	106	69.7	91	50.6
Cisgender men	46	30.3	89	49.4
Education				
No formal qualification	2	1.3	5	2.8
GCSEs/O-Levels/NVQ	25	16.4	22	12.2
A-Level/Equivalent	46	30.3	58	32.2
Undergraduate degree	58	38.2	69	38.3
Postgraduate degree	21	13.8	25	13.9
Missing	-	-	1	0.6
Other	2	1.3	-	-
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Age	31.93	11.76	31.74	9.49
Negative trans attitudes	1.78	.69	2.77	1.49

Procedure

Participants were recruited online among researchers' contacts via social media posts and targeted emailing. They first agreed to take part in the study about the perception of people's job suitability and reported their demographics (gender, age, education, sexual orientation, and ethnicity). Thus, they were informed they were going to evaluate a job candidate who applied for a position as a graduate economic advisor, namely a training programme to develop future leaders within the company. Next, they were randomly assigned to listen to an audio recording of one of the two speakers, either 3 months ($n = 73$) or 1 year ($n = 79$) on testosterone. The audio recording was introduced as part of a job interview that was recorded. Hence, participants rated the candidate in terms of masculinity, competence, sociability, morality, and job suitability. At this point, participants were provided with the candidate's job application disclosing information about their transgender identity. They then completed the same measures (masculinity, competence, sociability, morality, and job suitability) once again. Finally, participants completed the trans attitudes scale (see Supplementary Information) and completed a manipulation check item reporting the gender identity of the candidate and the job they applied for. Before being thanked and debriefed, they also provided their final consent to data use.

Materials

Speakers. We recorded two standard-accented American trans men (age range 21-23) whose first language was English. One speaker was 3 months and the other 1 year on testosterone. After agreeing to record stimuli, participants were asked to self-record short statements and completed a questionnaire including their demographics. Upon completion of all tasks and being debriefed, they provided final consent to use the audio recordings. For the current study, we used the following statement as it mimicked phrases candidates are likely to say in job interviews: 'Hi, I

am interested in this job. I am a motivated person and I have experience in this field. Also, I work well in a team and independently.’ This allowed us to introduce the recording as the candidate’s self-introduction in a recorded job interview.

Job description. Participants were informed that the candidate applied for a job as a ‘Graduate Economic Advisor’ for a graduate scheme. The job description was adapted from Barrantes and Eaton’s (2018) study where this job role was identified as a stereotypically masculine one. The alteration to a ‘graduate scheme’ was done to reduce any effects of the candidate’s voices sounding too young considering the young age of our speakers.

Job Application. Participants were provided with a short section of their alleged application form that included some demographic information that was always the same: age (25), gender identity (transgender man), and religion (prefer not to say). A short definition of the term transgender man (someone who was assigned female at birth but identifies as a man) was also provided.

Masculinity. Participants completed two items to rate how masculine and feminine the target was (Fasoli & Hegarty, 2020) on a 7-point scale from 1 (*not at all*) to 7 (*very much*). Ratings for masculinity and femininity were negatively correlated both when the gender identity was unknown, $r(152) = -.45, p < .001$, or disclosed, $r(152) = -.39, p < .001$. Hence, femininity ratings were recoded and averaged with those of masculinity. The higher the score, the more masculine the candidate was perceived.

Competence, sociability, and morality. Participants rated the candidates on three dimensions, namely competence (i.e., competent, intelligent, skilled), sociability (i.e., friendly, warm, nice), and morality (i.e., trustworthy, sincere, honest; see Brambilla et al., 2012). Answers were provided on a 7-point scale from 1 (*not at all*) to 7 (*very much*). The internal reliability was good

for each dimension and both when the gender identity was unknown or disclosed (all $\alpha > .82$).

Thus, items were averaged so that the higher the scores, the higher the competence, sociability, and morality attributed to the target, respectively.

Job suitability. To measure job suitability, we used 4 items ('How effective would the candidate be in this position?', 'How suitable is the candidate for this position?'; Barrantes & Eaton, 2018). Answers were provided on a 7-point scale from 1 (*not at all*) to 7 (*very much*). The scale showed good internal reliability both when the gender identity was unknown ($\alpha = .96$) or disclosed ($\alpha = .97$). Items were averaged so that the higher the score, the higher the job suitability.

Results

A 2 (Voice Transition: 3 months vs. 1 year) x 2 (Gender identity: unknown vs. disclosed) repeated measures ANOVA, with the first as a within-participants and the other as a between-participants variable, was performed on each dependent variable.

Masculinity

Significant main effects of voice transition, $F(1, 150) = 11.74, p = .001, \eta_p^2 = .073$, and candidate's gender identity, $F(1, 150) = 10.01, p = .002, \eta_p^2 = .063$, on perceptions of masculinity indicated that the candidate was perceived as more masculine after 1 year of voice transition ($M_{3\text{ months}} = 4.16, SD = .99$ vs. $M_{1\text{ year}} = 4.70, SD = .98$) and when gender identity was unknown ($M_{\text{unknown}} = 4.51, SD = 1.17$ vs. $M_{\text{disclosed}} = 4.27, SD = 1.03$).

These effects were qualified by a significant interaction between gender identity and voice transition, $F(1, 150) = 7.26, p = .008, \eta_p^2 = .046$. Pairwise comparisons showed that the candidate who was 3 months into the voice transition was perceived as moderately masculine regardless of whether his gender identity was unknown or disclosed ($p = .74$). On the contrary,

after 1 year of voice transition, the candidate was perceived as more masculine when his gender identity was unknown than when it was disclosed ($p < .001$; see Table 2).

Competence

A significant main effect of voice transition, $F(1, 150) = 4.37, p = .038, \eta_p^2 = .028$, showed that, overall, the candidate 1 year into his voice transition ($M = 4.42, SD = 1.07$) was perceived as more competent than the one who was 3 months into the transition ($M = 4.33, SD = 1.12$). We did not find a significant main effect of gender identity or a significant interaction ($F_s < 2.05, p_s > .15$). Hence, only voice transition influenced the attribution of competence to the candidate.

Sociability

No significant main effects or interactions emerged ($F_s < 2.99, p_s > .08$).

Morality

A significant main effect of the candidate's gender identity, $F(1, 150) = 10.56, p = .001, \eta_p^2 = .066$, indicated that the candidate was perceived as more moral when gender identity was disclosed ($M = 4.49, SD = 1.22$) than when it was unknown ($M = 4.22, SD = 1.12$). No other significant main effects or interactions emerged ($F_s < 1.51, p_s > .22$). Hence, only gender identity disclosure mattered in the attribution of morality to the candidate.

Job Suitability

Although only marginally significant, we explored the effect of the candidate's gender identity, $F(1, 150) = 3.67, p = .057, \eta_p^2 = .024$, because it was relevant to our hypotheses and no previous research has considered gender identity disclosure in this context. Results showed a tendency to perceive the candidates as more suitable for the job when their gender identity was disclosed ($M = 4.28, SD = 1.20$) than when it was unknown ($M = 4.18, SD = 1.15$). No other

significant main effects or interactions emerged ($F_s < 2.34$, $p_s > .09$). Only gender identity disclosure directly influenced job suitability judgments.

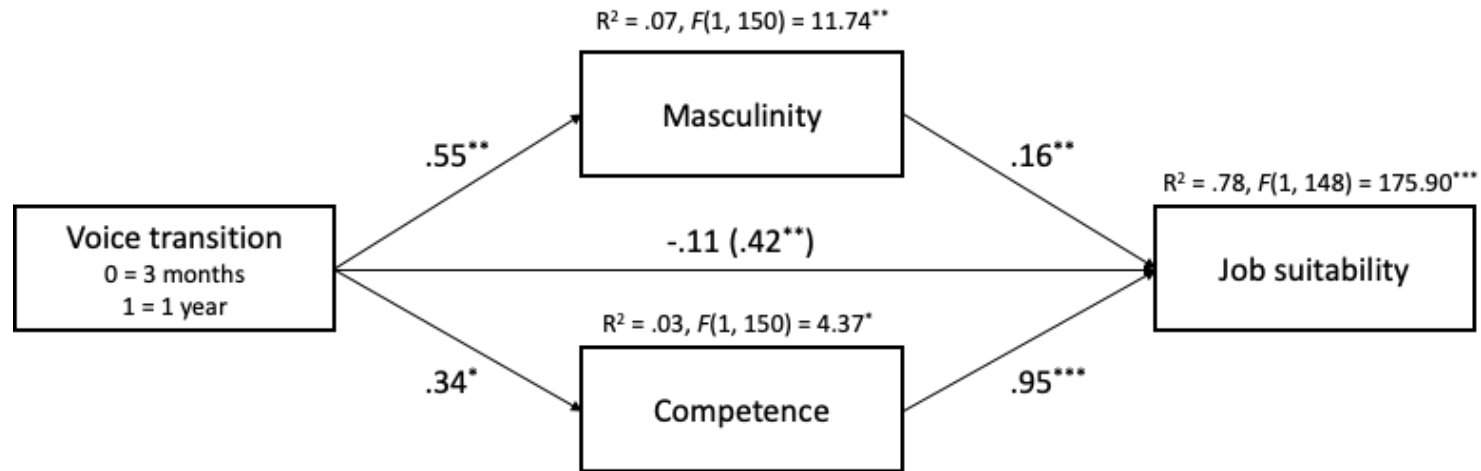
Mediation analyses

We ran two exploratory mediation analyses. First, we examined whether the higher masculinity and competence attributed to the candidate who was 1 year into his voice transition influenced job suitability. A multi-mediation analysis was conducted in PROCESS (5000 bootstraps) including voice transition as the independent variable, job suitability as the dependent variable, and masculinity and competence as parallel mediators. Results showed a significant indirect effect via both competence, $b = .33$, $SE = .16$, 95% CI [.02,.64], and masculinity, $b = .09$, $SE = .04$, 95% CI [.02,.17], confirming such voice-based impressions to matter in the hiring context. The candidate who was 1 year into transition was rated as more suitable for the job because he was perceived as more competent and masculine than the candidate who was only 3 months into the voice transition.

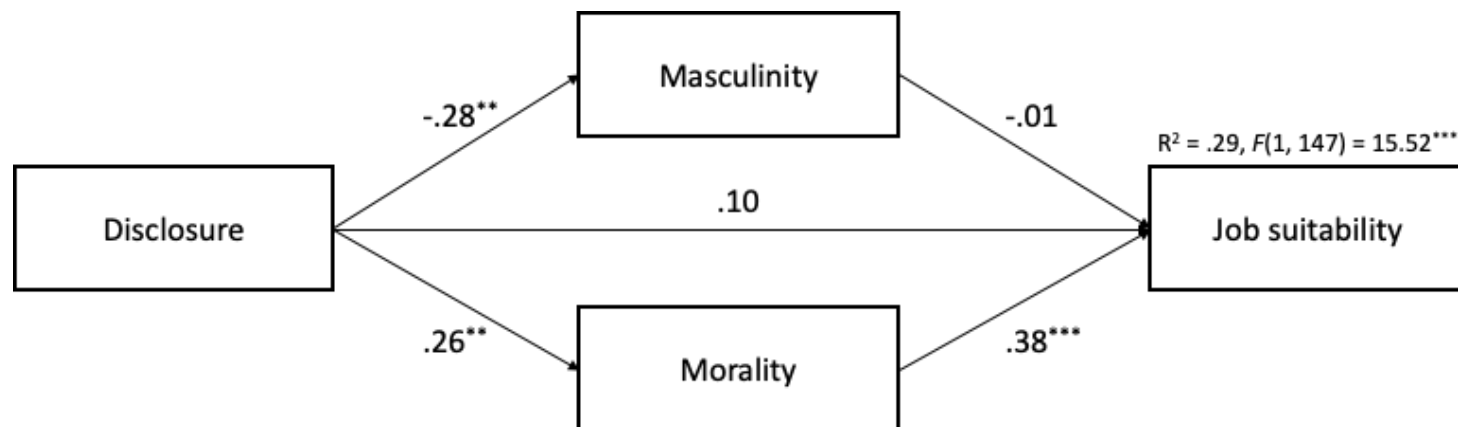
Second, we ran a mediation with MEMORE to test whether masculinity and morality that were influenced by gender identity disclosure played a role in job suitability judgments. A significant indirect effect emerged via morality, $b = .10$, $SE = .03$, 95% CI [.04,.15], but not via masculinity, $b = .002$, $SE = .01$, 95% CI [-.02,.02]. Hence, the higher morality attributed to the candidate after he disclosed explained why participants judged him as more suitable for the job after he disclosed his gender identity.

Figure 1. Parallel mediation analyses Study 1: a) Indirect effects of voice transition on job suitability through masculinity and competence (upper part) and, b) indirect effects of disclosure on job suitability through masculinity and morality (lower part).

a)



b)



Discussion

Study 1 showed that the candidate after 1 year of voice transition was perceived as more masculine and competent than the candidate who was only 3 months into the voice transition. Also, the higher masculinity and competence attributed to the 1 year in transition candidate triggered a higher perception of job suitability. This supports Hypothesis 1 that predicted advantages in later stages of voice transitions. Disconfirming Hypothesis 2a, disclosure did not change the perceived masculinity of the candidate at the beginning of the voice transition, possibly because he was generally perceived as only moderately masculine. Instead, gender identity disclosure decreased the perceived masculinity of the candidate in the advanced voice transition stage, as predicted by Hypothesis 2b. Hence, disclosure let participants in the role of selectors to perceive him as less masculine than when they solely listen to his voice. While disclosure negatively impacted the attribution of masculinity, participants perceived the trans male candidate as more moral after disclosing his gender identity and because of that, they perceived him as more suitable for the job.

Overall, these findings provide information about how hiring decisions about trans male candidates are made. Perception of masculinity is updated as a function of gender identity disclosure. Also, the higher competence and morality attributed to the candidate as a function of voice transition and disclosure, respectively, explained job suitability judgments. However, a limitation needs to be considered when interpreting these findings. We assessed selectors' impressions and decisions toward two different candidates at different stages of their voice transition. Hence, it is possible that the effects observed may have been confounded by vocal differences between the two speakers rather than the stage of their transition. Studies on voice modulation (Daniele et al., 2020) and accent (see match-guide paradigm; see Dragojevic et al.,

2020) have relied on the same speakers to control for possible physiological features that can affect the voice.

Study 2

In Study 2, we used audio recordings of the same speakers at three points of their voice transition. In doing so, we considered the voice at the very beginning of transition (0-1 months on testosterone), at an intermediate stage (6 months on testosterone), and at an advanced stage (1 year on testosterone). Our audio recordings were part of YouTube videos uploaded by trans men YouTubers who regularly posted updates of their voice transition (see Borck & Moore, 2019). Hence, our voice samples referred to spontaneous speaking rather than read materials enhancing the ecological validity of our stimuli.

Method

Design

A 3 (Voice Transition: 0-1 week vs. 6 months vs. 1 year) x 2 (Gender identity: unknown vs. disclosed) mixed design with the first variable as a between-participants factor and the second variable as a within-participants factor was implemented.

Participants

Two hundred and fifteen cisgender participants completed the online study. We excluded those who identified as part of a sexual minority ($n = 1$) or preferred not to say their sexual identity ($n = 3$), and/or those who answered the manipulation check item incorrectly ($n = 31$). The final sample consisted of 180 cisgender heterosexual participants, equally balanced among men and women. Participants were British and the majority held a university degree (see Table 1). A sensitivity analysis for a mixed design with 6 groups and two repeated measures with $\alpha =$

.05, $1-\beta = .80$, $N = 180$, suggested that this sample size allowed us to detect a small to medium effect size, $f = .14$.

Materials

Speakers. We identified several trans male YouTubers who each posted videos documenting their voice transition. The selection criteria were a) having posted videos at different times during the transition, b) video content not mentioning transition or referring to gender-related stereotypes or information, c) speaking in standard English, and d) audio being clear. Among those 6 American YouTubers that were identified and contacted, two provided consent to use the audio extracted from their videos. They were young at the time they recorded the videos (21 and 24 years old, respectively). Their video allowed us to identify a video at the first week, 6 months, and 1 year into the voice transition process. We decided to have 6 months as the intermediate phase since vocal changes have been found in this timeframe for many trans men (Irwig et al., 2017). We selected 5-7 seconds of the video for each speaker and each point in time and extracted the audio. The message content was neutral (e.g., ‘all these videos that I am making I am going to use them later’).

Procedure and Variables

Participants were recruited online via Prolific Academic. The procedure and variables were the same as in Study 1. The only difference was in the cover story. Because the audio differed in content, participants were informed that they were going to listen to an audio recording taken from the candidate’s YouTube channel and were asked not to focus on what the speaker said. The decision to let the selector listen to an audio unrelated to the job interview was explained as the opportunity to form a spontaneous impression that would not be influenced by tactics the job candidates may use to impress the employers in a job interview. Participants were

then randomly allocated to one of the three conditions, hence they listened to a speaker at the beginning ($n = 61$), intermediate ($n = 63$) or advanced ($n = 59$) voice transition. Ratings for masculinity and femininity were negatively correlated both when the gender identity was unknown, $r(180) = -.75, p < .001$, and disclosed, $r(180) = -.58, p < .001$. Hence, femininity ratings were recoded and averaged with those of masculinity. The higher the score, the more masculine the candidate was perceived. All the other measures were reliable (competence: unknown: $\alpha = .83$ and disclosed: $\alpha = .93$; sociability: unknown: $\alpha = .88$ and disclosed: $\alpha = .93$; morality: unknown: $\alpha = .77$ and disclosed: $\alpha = .90$; job suitability: unknown: $\alpha = .96$ and disclosed: $\alpha = .97$) and scores computed as in Study 1.

Results

A 3 (voice transition: 0-1 week vs. 6 months vs. 1 year) x 2 (gender identity: unknown vs. disclosed) repeated measures ANOVA, with the first as within-participants and the other as between-participants variables, was performed on each dependent variable.

Masculinity

A significant main effect of voice transition, $F(2, 177) = 40.15, p < .001, \eta_p^2 = .31$, indicated that the candidate was judged as more masculine when in 1 year ($M = 4.65, SD = 1.20$) and 6 months ($M = 4.16, SD = 1.12$) stages than 0-1 week into the voice transition ($M = 3.05, SD = .93; ps < .02$). The main effect of gender identity was marginally significant, $F(1, 177) = 3.52, p = .06, \eta_p^2 = .02$, and it was qualified by a significant interaction, $F(2, 177) = 21.63, p < .001, \eta_p^2 = .20$. Pairwise comparisons showed that participants judged the candidate 0-1 week into his voice transition as more masculine when his gender identity was disclosed than when it was unknown ($p < .001$), while the opposite tendency emerged when the target was 1 year into his

transition ($p = .09$). Gender identity disclosure did not have any effect on participants' ratings in the intermediate (6 months) transition condition ($p = .14$; see Table 2).

Competence

A significant main effect of candidates' gender identity, $F(1, 177) = 6.82, p = .010, \eta_p^2 = .04$, indicated that, overall, participants attributed more competence to the target when his gender identity was disclosed ($M = 4.29, SD = 1.03$) than when it was unknown ($M = 4.15, SD = .98$). No significant main effect of voice transition or interactions emerged ($F_s < 1.96, p_s > .14$). Hence, it was only gender identity disclosure that influenced the attribution of competence to the candidate, not the voice changes due to transition.

Sociability

No significant main effects or interactions emerged ($F_s < 2.64, p_s > .11$).

Morality

No significant main effects or interactions emerged ($F_s < 2.96, p_s > .09$).

Job suitability

No significant main effects of voice transition or gender identity were found ($F_s < 2.14, p_s > .15$). However, a significant interaction between voice transition and gender identity, $F(2, 177) = 3.89, p = .022, \eta_p^2 = .042$, was found. Pairwise comparison showed that participants were more likely to judge the candidate at the very beginning of his transition (0-1 week) as suitable when his gender identity was disclosed than when it was unknown ($p = .004$). Such difference due to disclosure did not occur for the candidate who was 6 months ($p = .50$) and 1 year into his voice transition ($p = .31$; see Table 2).

Table 2. Means (and Standard Deviations) Across Conditions for Masculinity and Job Suitability.

		Study 1		Study 2		
		Beginning of transition (3 months)	Advanced transition (1 year)	Beginning of transition (0-1 week)	Intermediate transition (6 months)	Advanced transition (1 year)
Masculinity	Identity unknown	4.18 (1.13)	4.96 (1.16)	2.51 (1.01)	4.29 (1.19)	4.80 (1.13)
	Identity disclosed	4.14 (1.11)	4.45 (1.07)	3.60 (1.40)	4.04 (1.35)	4.51 (1.10)
Job suitability	Identity unknown	3.99 (1.12)	4.36 (1.16)	3.90 (.99)	3.78 (.86)	4.06 (.86)
	Identity disclosed	4.16 (1.19)	4.40 (1.20)	4.20 (.95)	3.95 (1.15)	3.95 (1.15)

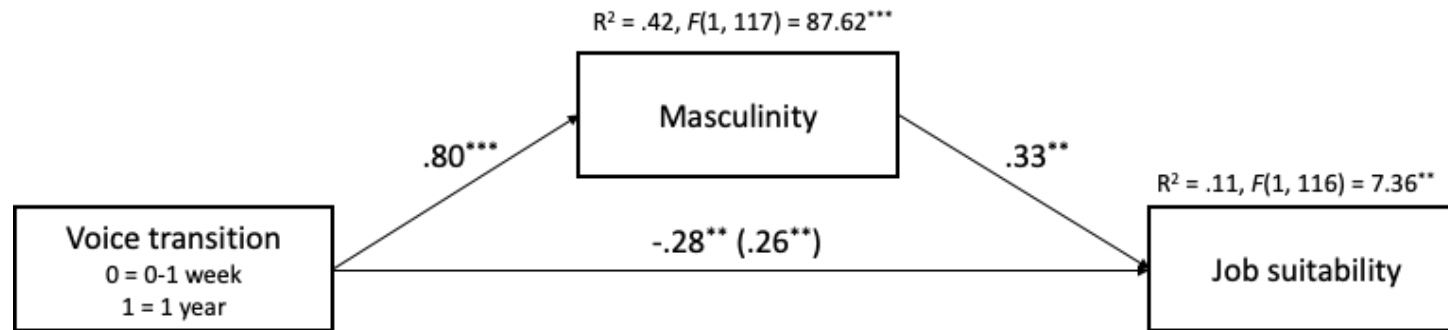
Mediation analyses

We initially focused on the effects of voice transition. We ran mediation analyses to examine whether the higher masculinity attributed to the candidate 1 year into his voice transition influenced job suitability judgments. We only considered masculinity as a mediator as it was the only variable influenced by voice transition. Two mediation analyses in PROCESS (5000 bootstraps) were conducted. First, we compared candidates who were 0-1 week and 6 months into their voice transition but no significant indirect effect, $b = .06$, $SE = .16$, 95% CI $[-.21, .41]$, emerged. Then, we compared judgments for the candidates who were 0-1 week and 1 year into their voice transition. In this case, a significant indirect effect via masculinity, $b = .26$, $SE = .08$, 95% CI $[.12, .45]$, indicated that when the candidates sounded very masculine because of advanced voice changes, he was perceived as more suitable for the job.

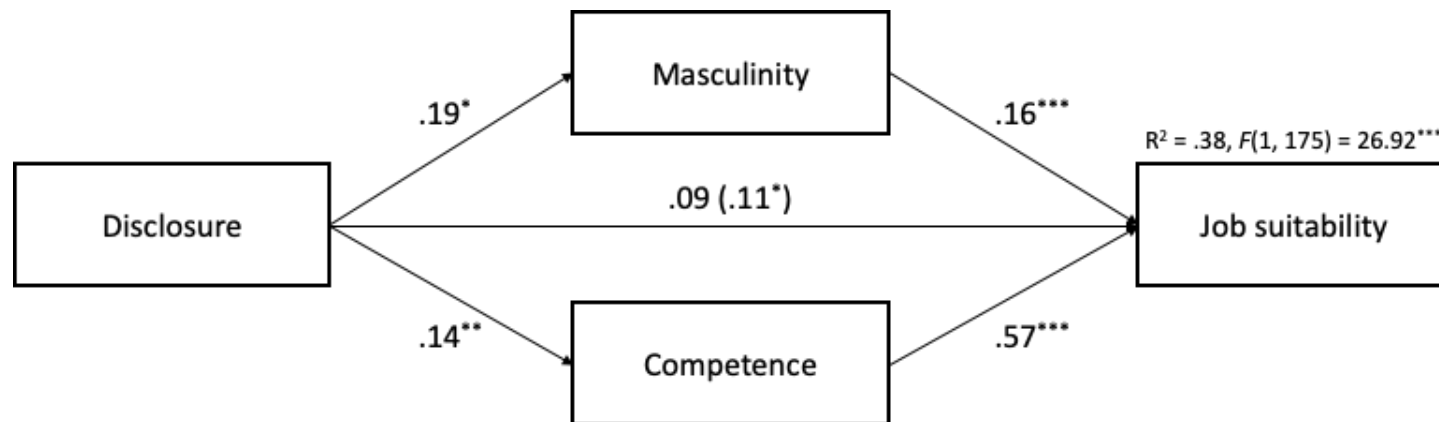
Next, we focused on identity disclosure. We ran a mediation with MEMORE to test whether competence and masculinity, which were influenced by identity disclosure, influenced job suitability. A significant indirect effect emerged via competence, $b = .08$, $SE = .03$, 95% CI $[.02, .14]$, but not via masculinity, $b = .03$, $SE = .02$, 95% CI $[.003, .07]$. Hence, the higher competence attributed to the candidate after he disclosed explained why participants judged him as more suitable for the job.

Figure 2. Mediation analyses Study 2: a) Indirect effects of voice transition on job suitability through masculinity (upper part) and, b) indirect effects of disclosure on job suitability through masculinity and competence (lower part).

a)



b)



Discussion

Study 2 provided further support for how impression and role suitability judgments are made and updated. Overall, an advancement in voice transition was associated with higher masculinity, as predicted by Hypothesis 1, and this led to higher job suitability in the advanced voice transition stage. Gender identity disclosure increased the perception of the candidate's competence which, in turn, explained a stronger perception of him as suitable for the job. Disclosure also allowed participants to adjust their first impressions concerning masculinity and job suitability. The candidate who was 0-1 week into his voice transition was perceived as more masculine after disclosure while, in line with Study 1 findings, the candidate 1 year into his voice transition tended to be 'penalised' and perceived as less masculine after his gender identity was disclosed. Moreover, disclosure had an advantage in terms of job suitability ratings only for a trans candidate at the very beginning of his transition, namely when he was not perceived as particularly masculine, but his identity disclosure conveyed information about his male gender. Hence, findings confirmed Hypothesis 2a suggesting that, when the candidate did not sound stereotypically masculine, disclosing a trans masculine identity would enhance the perceived fit with the job. Instead, Hypothesis 2b suggesting that the gender identity disclosure may disadvantage the trans man candidate found only partial support for the perception of masculinity.

As in Study 1, there were no effects of the stage of vocal transition or gender identity disclosure on perceptions of sociability suggesting that this characteristic may be less relevant for trans men at work. The result of gender identity disclosure on competence, however, needs to be taken with caution. Analyses controlling for the role of the speaker (Speaker 1 and Speaker 2) showed that one speaker was perceived as generally more gender typical, competent, sociable,

moral, and suitable for the job than the other. The same pattern of results reported above remain emerged but the effect of gender identity disclosure on competence became a non-significant trend. This suggests that the effect of disclosure on competence was weak and may be more likely than others to be influenced by speakers' differences.

General Discussion

Across two experimental studies, we examined perceptions of trans male candidates and the extent to which they varied as a function of the stage of candidates' vocal transition and whether or not they disclosed their gender identity in their job application. In doing so, we focused on the cisgender heterosexual majority and tested under which circumstances trans men are advantaged or disadvantaged in hiring decisions.

We found that trans men were perceived as more masculine and, at least in Study 1 as also more competent, in advanced stages of voice transition. These results concerning trans men complement existing literature on voice-based perception showing that vocal cues associated with masculinity influence first impressions in the work context (Fasoli et al., 2017; Klofstad et al., 2012, 2015). For trans men in the process of transitioning, an important goal is to attain alignment between the sound of one's voice and one's gender identity. Such goals for vocal transition are central to the larger goal of presenting and being perceived by others in line with one's gender identity (Bates et al., 2020; Budge et al., 2010; Dietert & Dentice, 2009). Our results show that voice can be modulated (Daniele et al., 2020; Podesva, 2007) and trans men can reach stereotypically masculine presentations in advanced transition stages, namely 1 year into voice transition. The findings also speak to the literature on identity management. It emerged that, in our sample, disclosing a trans-gender identity was generally advantageous for perceptions of morality (Study 1) and competence (Study 2). The finding concerning morality is

in line with literature showing that disclosure is associated with honesty and trustworthiness (Collins & Miller, 1994; Fletcher & Everly, 2021; Martinez et al., 2017). Effects on competence may be instead the outcome of trans men gaining ‘status’ once they identify with the ‘privileged’ gender category (see Schilt, 2006; Schilt & Westbrook, 2009).

As expected, there was an interplay between voice transition and gender identity disclosure in the perception of masculinity. We found that candidates with a more advanced stage of vocal transition tended to be seen as less masculine when they disclosed their trans male identity. Moreover, in Study 2, candidates were seen as more masculine when they disclosed their trans male identity in the very early stage of vocal transition. The fact that disclosure impacted perceptions of masculinity in the early stages of transition in Study 1 but not Study 2 may be due to the inconsistencies in the temporal definition of the early stages of voice transition (i.e., 3 months in Study 1; first week in Study 2). Indeed, testosterone may have already modulated a speaker’s voice after 3 months (Nygren et al., 2016). If this is the case, early stages in Study 1 would be more similar to the intermediate stage of Study 2 where disclosure did not play any role in masculinity perception. Moreover, regarding ratings of job suitability, when a candidate disclosed his trans male identity, he was rated more suitable for the role compared to when he did not disclose his identity. This finding held regardless of stage of vocal transition in Study 1 but was present only in the early stage of vocal transition in Study 2.

Our research contributes to the understanding of how the majority population may react to the disclosure of transgender identities. Trans men report concerns about disclosing their gender identity because this may put them at risk of discrimination and requires them to manage their identities with employers and colleagues (Budge et al., 2010; Jeanes & Jane, 2021; Ozturk & Tatli, 2016; Rood et al., 2017; Scott et al., 2011). Our data from a very liberal sample suggest

that trans identity disclosure seemed to boost ratings of job suitability, especially when the candidate's voice may not have communicated masculinity in the very early stages of vocal transition. By disclosing their trans identity, trans men may dismantle gender ambiguity that voice alone may trigger among cisgender listeners (see Worst & O'Shea, 2020). This seems to allow individuals who hold positive attitudes toward gender minorities to positively evaluate trans men who disclose their gender identity. Still, trans men are right in being concerned that disclosure may sometimes make them 'lose' the masculine status they have achieved in later stages of the vocal transition (see Abelson, 2014; Jeanes & Jane, 2021). Also, such disclosure may lead to negative consequences if the cisgender majority involves individuals who are transphobic or hold a preference for traditional gender roles (see Makwana et al., 2018).

Importantly, we have explored potential underlying processes and found that job suitability was influenced by voice transition such that sounding more masculine increased the chances to see a fit between the candidate and the job role. This seems to support the lack of fit model. However, at least in Study 1, competence played a part in creating an advantage for candidates who sounded masculine suggesting it may not only be a matter of fit (see Fasoli & Hegarty, 2020). Interesting was the case of identity disclosure. Here, it was not perceived masculinity but rather the higher attribution of morality or competence that explained a perception of the candidate as suitable for the job. Competence and morality are associated with status (Ellemers et al, 2008; Ko et al., 2015). Hence, a gain in such attributions likely made participants perceive the trans men as gaining higher status (see Schilt, 2006). These findings need to be read in relation to the status beliefs model (Ridgeway, 2001). They complement Fasoli and Hegarty's (2020) work that brought into question whether hiring discrimination against minorities is just a matter of lack-of-fit based on masculinity or it also involves status

beliefs. By examining trans men's voices we expanded previous work that only focused on gay- and lesbian-sounding speakers (Fasoli & Hegarty, 2020; Fasoli et al., 2017). It follows that when gender identity signals a stigmatised group membership, researchers need to consider status beliefs along with gender stereotyping to fully understand why trans men or other gender minorities experience advantages or disadvantages.

The present findings have important implications for the sociolegal context of employment discrimination faced by trans men in the UK. The UK can be considered a progressive sociolegal context given it has laws [i.e., the Equality Act (2010)] that prohibit employment discrimination against people based on gender (minority) identity. Despite these legal prohibitions, efforts to implement the Equality Act and eliminate discrimination against trans men in hiring decisions are not entirely successful (National LGBT Survey, 2018) and some subtle forms of discrimination are beyond the scope of such anti-discrimination policies. As a result, more efforts need to be made within the institutional contexts in which hiring decisions are made (e.g., human resources policies and guidance documents; Ozturk & Tatli, 2015) to educate those making hiring decisions about gender (minority) identity, transition, and the importance of voice. Indeed, while laws and previous work focused on whether trans people are discriminated against and how they can protect them legally, our findings suggest that we also need to consider how trans people are perceived and treated during their transition. This is particularly important because voice transitioning can be stressful for trans individuals and their voice change may not reach the desired sound affecting listeners' impressions (see Nygren et al., 2016). Moreover, our findings show that trans men can be the target of biases under specific circumstances and, thus, policies to reduce such bias and to support trans applicants are needed.

Limitations and Future Directions for Research

The findings from the present studies should be interpreted in the context of the following limitations. Primarily, our findings are limited because of the type of stimuli and measures. We focused only on trans male applicants and results cannot be extended to other gender minority applicants. Future research would benefit from including trans women and non-binary applicants (for studies on perception of trans and non-binary employees see Dray et al., 2020; Taylor & Fasoli, 2022). Additionally, although the use of naturally occurring voice samples enhanced the ecological validity of the stimuli, the samples were nonetheless limited to American English speakers and not representative of all trans male voices. Future research should involve larger and more varied voice samples. Furthermore, participants were only provided with candidates' voices and not presented with other important "real-life" visual characteristics, such as appearance, body language, etc. that are usually considered in job interviews (see Barrick et al., 2009). Future experimental studies should strive for the inclusion of visual and voice characteristics in simulating candidates (see Gerrard et al., 2022). Future research will also benefit from the use of methods that extend beyond the experimental context, such as field study designs (McFadden, 2015) in order to examine actual job offers. Indeed, our study simply examined job suitability. Hence, it remains to be examined whether job offers would be put forward to trans candidates who are at different stages of their transition and who decide to disclose or not. Combining controlled experimental and field studies could also inform us about whether judgments and employability decisions would vary among individuals who have experiences in recruitment and may have had equality-based and fairness training.

Moreover, we only focused on hiring judgments and on a specific type of job (i.e., economic advisor). Hence, our results reflect what trans men could experience during the hiring process, but do not speak about other experiences at the workplace where gender expression and

traditional masculinity may be more or less important depending on the context (see Jeanes & Janes, 2022). Also, the fact that the studies focused on a stereotypically masculine job role implies that we only tested whether the trans men candidates were seen as a good fit for this job. Findings may be different when the profession is considered stereotypically feminine, or the role is held in a female-dominated sector. Based on the lack-of-fit theory, trans men applying for a stereotypically feminine job may get an advantage at the beginning of their voice transition, when a more feminine ‘presentation’ would mean a good fit with the job, and when they disclose their trans identity. However, they may struggle when they self-present in traditionally masculine terms. This would be true only if the judgments are led by person-job fit but not status beliefs. If instead it is a matter of status, trans men perceived as masculine (and competent and moral) as a function of their identity disclosure or voice transition would still have advantages. Hence, our data need to be considered within a specific context and future research should consider different male- and female-dominated jobs (see Barrantes & Eaton, 2018). This would also help further disentangle the role of lack-of-fit and status beliefs in explaining hiring judgments.

Finally, context and sampling need to be considered. Our participants reported very positive attitudes toward trans people (see Table 1 and supplementary materials). Although this is in line with data from a recent national survey data (Morgan et al., 2020), the reality is that trans people in the UK report widespread discrimination (Bayrakdar & King, 2023) including in the workplace (see Bradley, 2020; Stonewall, 2020). Our convenience samples were not representative of the UK population and some participants may have attempted to appear non-prejudiced. Attitudes toward trans people vary across demographics (see Morgan et al., 2020) and, thus, having a more representative sample would allow us to generalise our findings and consider individual differences (see Harrison & Michelson, 2019). For instance, more prejudiced

individuals have been found to strongly discriminate against gay-sounding people (Fontenele et al., 2023). Translating these results to trans voices, more prejudiced individuals may react to trans men candidates sounding ‘feminine’ in more negative ways than our generally liberal participants. Also, more prejudiced and conservative people may react in more negative terms to gender identity disclosure than non-prejudiced individuals involved in our studies. Indeed, conservative people hold more rigid gender stereotypes (see Makwana et al., 2018; Rye et al., 2019) and conservative employers disadvantage gender minorities (see Carnahan et al., 2017). Country specificity needs to also be highlighted. The present research was conducted in the UK, a country where discrimination against trans people in the hiring process is against the law. Future research would benefit from the inclusion of participants in other countries, including those in which gender (minority) identity is not a protected characteristic in anti-discrimination legislation or trans rights are questioned (e.g., USA).

Summary and Conclusions

The current findings offer important initial evidence of the roles that voice transition and gender (minority) identity disclosure play in the perception of trans male candidates in hiring decisions. Stage of vocal transition and being “out” as a trans male applicant have important and varied consequences for perceptions of masculinity and job suitability. These findings highlight the need for more studies on how cisgender people in the majority population understand and react to voice transition and identity disclosure as potential factors that shape perceptions of trans male candidates and the resulting consequences for their experiences of discrimination.

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