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ORIGINAL ARTICLE

A Tale of Two Gender Roles: The Effects of Implicit and Explicit Gender Role Traditionalism and Occupational Stereotype on Hiring Decisions

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Abstract The current study examined how individual difference characteristics of an evaluator could affect real-world decisions, such as hiring decisions. Specifically, this study examined the gender role traditionalism of an evaluator, and whether this traditionalism interacted with occupational stereotypes during a laboratory simulated hiring decision. Gender role stereotypes were activated using a priming task, then participants evaluated male and female job applicants on a variety of work-related skills, ultimately selecting applicants for either a traditionally masculine or feminine position. Analyses revealed that applicants were more often selected for a position in which the occupation stereotype matched their gender suggesting an effect of an evaluator's gender role traditionalism. In addition, those participants indicating that they held more traditional gender role beliefs tended to favor male applicants in their evaluations. Finally, the activation of ideas incongruent with traditional gender role stereotypes resulted in higher ratings on work-related skills from all participants, though these ratings did not seem to impact the overall hiring decision. This study highlights the impact of individual difference characteristics of an evaluator during a hiring decision, and identifies some possible ways to move toward a more impartial hiring process to reduce gender biases in hiring.

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Introduction

Gender role stereotypes have a long standing and persistent history. Both social role theory [12] and role congruity theory [13] argue that personal beliefs regarding gender roles may affect many aspects of our lives, including our perceptions of other people. As a result, beliefs about traditional gender roles could be an important factor in real-world decisions related to employment where the gender discrepancy in hiring, promotion, retention, and salary between men and women is well-documented [9, 22]. In addition, there are specific occupations that are predominantly occupied by men, such as science, technology, engineering, and math (STEM) fields, with women accounting for a mere 28 % of the employees in these fields [19]. One reason that women are greatly underrepresented in these professions may be due to gender role stereotypes that create barriers for women pursuing a career in these fields. Previous research has shown that gender role stereotypes do affect hiring decisions. For example, applicants are more likely to be selected and hired for a position when their gender matches the occupation stereotype of the profession to which they are applying [25].

Another potential professional barrier, unconscious hiring biases, have received recent attention of researchers, who have shown that these biases serve to further promote gender segregation in the workforce (e.g. Corbet and Hill [8]). Yet we know little about the factors that affect individual differences in bias, which are important because understanding these individual difference factors could lead to better interventions and hiring procedures. This study seeks to further this discussion by asking: Does an evaluator's gender role traditionalism affect perceptions and decisions about a job applicant, and do these individual differences in bias interact with occupation gender stereotypes?

Occupation Stereotypes

Researchers have theorized that an occupation's gender stereotype, stemming from the different skills required to perform masculine and feminine occupations, could steer men and women toward different occupations [15, 16]. For example, women tend to select occupations that align with life goal priorities consistent with family values while men tend to select occupations that are more focused toward financial and individualistic goals [25]. In further support of these ideas, Weisgram et al. [26] found that women's self-reported masculinity and femininity significantly predicted goal affordances associated with future occupations. Since men and women tend to gravitate toward occupations offering different goal affordances, the ratio of men and women working in certain professions is not equal, which can affect how individuals perceive these occupations. Recently, researchers established the empirical connection between masculine characteristics and STEM fields (Carli et al. [5]) furthering the idea that an individual's perception of a field may be

skewed to favor more masculine traits in certain fields. Given the evidence that masculinity is associated with fields that typically employ more men, it seems likely that occupation stereotypes interact with personal beliefs regarding gender roles to affect perceptions of an applicant's suitability for positions mismatching these prescribed gender roles.

Hiring Biases

Hiring biases based on gender have been well-documented in the literature. For example, when identical male and female applicants submitted applications for a student research position in the sciences, a traditionally masculine field, the male student was more often selected for the position, and rated as more competent than the female student [17]. These were identical applications, which suggests that much of this bias is due to gender role beliefs of the evaluator, rather than differences between the applicants. Since these gender role stereotypes seem to be so ingrained, it is likely that, unbeknownst to the hiring authority, these stereotypes influence decision-making, and are part of an automated process.

Previous research has confirmed that the application of gender role stereotypes can be an automated process, requiring little thought or awareness. Research examining unconscious or implicit processes often uses a *priming* methodology. As applied to research on stereotypes, in a priming paradigm researchers will remind participants of a stereotype without explicitly telling participants to think about it (e.g., showing women and men in traditionally feminine (nurse) and masculine (police officer) roles). This prime implicitly (unconsciously) activates the stereotype in a person's memory, which is then thought to increase the likelihood of processing new information in a stereotypical way (e.g., not hiring a women as a police officer or a man as a nurse). For example, Davies et al. [10] found that showing women a prime of an advertisement depicting traditional gender role stereotypes led women to reduce their desire for a leadership role. Similarly, Rudman and Phelan [23] primed participants with traditional or non-traditional occupation gender stereotypes to examine the effect on interest in masculine occupations. Traditional occupation stereotype primes resulted in women manifesting lower interest in masculine occupations, and reporting decreased leadership ability when compared to women that viewed the non-traditional occupation stereotype prime. Together, these studies lend support to the idea that gender role stereotypes can be activated and this activation can affect later behavior.

The bulk of the literature concerning the activation of gender role stereotypes has focused on how this affects the self-view. However, role congruity theory [13] supports the notion that gender role beliefs should affect judgments of others. Along these lines, Bosak and Sczesny [4] conducted a study designed to examine whether leadership information about an applicant could affect a hiring decision. They discovered that male evaluators were more likely to select a male applicant over a female applicant if no leadership information were presented with the application, but evaluators held no gender preference when leadership information was provided. When not explicitly stated, men clearly associate the concept of leadership with a

masculine gender role. In contrast, female evaluators showed no gender preference for any particular applicant, regardless of whether leadership information was presented. This study is interesting because it shows that masculine gender role stereotypes (e.g., men are better leaders) can sway an important decision, like a hiring decision, but the effects may depend on the gender role beliefs of the evaluator.

Rice and Barth [21] also pursued the idea that gender role beliefs of an evaluator can affect employment decisions. Participants were asked to complete a memory task designed to activate, or prime, traditional or non-traditional gender roles. Afterward, participants viewed either a male or female applicant's cover letter for a generic professor position, and completed a measure of their own masculine characteristics (e.g., assertiveness, competitiveness). Male participants holding highly masculine characteristics tended to favor the male applicant after traditional gender role priming. Female participants tended to be more egalitarian in their selections and did not show this preference. These results are similar to those of Bosak and Sczesny [4] in highlighting the value of examining an evaluator's personally-held masculine and feminine characteristics, as well as gender, to further explore gender biases in hiring decisions.

The Current Study

Though there is some evidence indicating that the endorsement of traditional gender roles can affect judgments of others, [4, 21] many relevant questions remain unanswered. First, there is a lack of research considering how the gender role traditionalism of the hiring authority interacts with the occupation gender stereotype of a position. Previous research has shown that activating gender role stereotypes can affect vocation-related decisions for a gender-neutral profession [21], so it seems likely that gender role stereotypes would also play a role in hiring decisions for a stereotypically gendered profession.

The current research examines three factors related to hiring decisions: the activation of culturally held gender role stereotypes (implicit processes), personally held gender role beliefs (explicit beliefs), and occupation gender stereotypes. The effect of culturally held gender role stereotypes on evaluations of applicants and hiring decisions was examined by priming ideas that are congruent or incongruent with traditional gender roles prior to an evaluation of work-related skills and hiring decision. A control condition in which no gender role stereotypes were primed was included for comparison. It was hypothesized that under both the stereotype-congruent and control priming, participants would be more likely to select an applicant whose gender matched the occupation gender stereotype of the available position, but the activation of traditional gender role stereotypes in the stereotype-congruent priming condition should enhance this effect. In contrast, we predicted that the effect would be weaker under the stereotype-incongruent priming condition.

We expected similar effects with regard to differences in the work-related skills ratings based on priming condition. It was hypothesized that those participants in the stereotype-congruent priming condition or control condition to give higher ratings on work-related skills to the male applicant than the female applicant. Those

participants in the stereotype-incongruent priming condition were expected to be more balanced in their ratings of the male and female applicants showing little difference in perceived work-related skills between the genders.

Prior to knowing the particular position that was available, but after knowing the gender of the applicant, participants rated applicants on work-related skills to examine whether there were differences in perceived skill sets based on applicant gender. This manipulation was similar to that used in Rice and Barth [21] and allowed us to determine if the stereotype-congruent priming adversely affected ratings of women compared to men, even before participants were aware of the occupation gender stereotype of the position, which would suggest the effects of strongly held gender stereotypes is far reaching. Similar to Rice and Barth [21], we predicted that male applicants would be rated more highly on work-related skills and hired more often, particularly for masculine positions, if the evaluator identifies themselves as holding more traditional gender role beliefs. We expected that female applicants would be rated less highly on work-related skills and hired less often if the evaluator identifies themselves as holding more traditional gender role beliefs.

These issues are examined in the context of the dilemma of women pursuing a STEM career. The masculine occupations used in the current study all required mathematics, science, or engineering training. So, in addition to making theoretical contributions to role congruity theory [13] and social role theory [12], this study has the potential to contribute to informing practitioners about factors that can promote or weaken gender bias in hiring.

Method

Participants

Two hundred and ninety participants (154 females) were recruited from an introductory psychology subject pool at a Southeastern public university. Students voluntarily agreed to participate in a study about hiring decisions. Two participants (both male) were excluded from data analysis because they indicated that they did not read the directions before completing the required tasks. Six participants (four females, two males) were excluded because their reaction times during the task were three standard deviations below the mean, indicating they were significantly faster than other participants and likely responding before adequately viewing the stimuli. This exclusion criteria is consistent with that used by Blair and Banaji [3]. The final sample consisted of 282 participants (150 females) between the ages of 17–22 ($M = 20.75$). Of this sample, 266 participants provided ethnicity information. Seventy-nine percent of the participants identified themselves as Caucasian/White ($n = 210$), 9 % of participants identified themselves as African-American/Black ($n = 24$), and the remaining participants indicated their ethnicity as Asian, Hispanic, Native American, mixed race, or other (12 %, $n = 32$).

Design

The design of the study was a 2 (gender of the participant; between subjects) × 2 (gender of the profession: masculine or feminine; within subjects) × 2 (gender of the applicant; within subjects) × 3 (priming condition: stereotype-congruent, stereotype-incongruent, or control; between subjects) mixed design. In addition, participants' self-reported gender role traditionalism was used as a continuous between subjects variable.

Apparatus

This study was programmed using EPrime Studio v.2.0. Participants viewed white text on a dark grey background for the duration of the study. All instructions and stimuli were presented on the computer screen.

Procedure

When participants arrived for the study, they were randomly assigned to one of three priming conditions: stereotype-congruent, stereotype-incongruent, or control. Participants were seated at a computer in a small room by themselves, and directions regarding how to complete the tasks were provided. Next, participants completed the priming task to activate gender role stereotype-congruent or incongruent ideas. There was also a control condition that included completing a similar priming task without gender role stereotype information. After the priming task, participants completed the job applicant trials which is explained in more detail below. Finally, participants completed a series of questionnaires before debriefing and dismissal.

Priming Task

Across all priming conditions, participants completed a reaction time task similar to that used in Blair and Banaji [3], in which they compared two words using a specific rule. Participants were instructed to press the "yes" key (left control key on a standard keyboard; marked with a green dot) when the first word presented could be used to describe the second word presented. However, if the first word could not be used to describe the second word, participants were instructed to press the "no" key (right-most enter key; marked with a red dot). A response matching or not matching the rule differed depending on the priming condition.

For the stereotype-congruent prime, responses matching the rule were based on traditional gender role stereotypes. Participants viewed a proper name as the first word, and the second word was either a masculine or feminine descriptive trait (e.g., Mary–compassionate; Bob–leader). The stereotypic traits used in the current study were primarily derived from previous gender stereotype measures including Cejka and Eagly [6] and Bem [2]. For responses not matching the rule, participants viewed proper names paired with non-human descriptors (e.g., Mary–glass). During the stereotype-congruent and stereotype-incongruent priming conditions, participants

Table 1 Sample priming pairs

	Stereotype-congruent	Stereotype-incongruent	Control
Matching items	Richard–independent	Richard–gullible	Table–wood
	Joseph–assertive	Joseph–comforting	Mug–ceramic
	Becky–comforting	Becky–independent	Notebook–paper
	Jessica–gullible	Jessica–assertive	Lawn–grass
Non-matching items	Robert–glass	Robert–glass	Sandpaper–fluffy
	Maria–ceramic	Maria–ceramic	Soap–juicy

viewed equal amounts of male and female names, and the trait descriptive words were identical in these conditions, just paired in different ways. For the control priming condition, participants were asked to match inanimate objects with non-human trait descriptors (See Table 1 for priming examples).

Across all three conditions, initially, a blank screen was presented for 300 ms. This was followed by the first word presentation lasting 150 ms, which was then followed by another blank screen for 200 ms. Finally, the second word was presented until the participant responded by pressing one of the designated keys. All stimuli were centrally presented. Throughout the task, participants were given visual feedback consisting of a green check mark for a correct response and a red 'x' for an incorrect response. Each participant responded to 128 priming trials, and 88 of these trials were consistent with the given rule, while 40 trials were not consistent with the rule.

Job Applicant Trials

After completing the priming task, participants completed 14 job applicant trials. In each job applicant trial, they were presented with statements from two applicants, one at a time. Each statement was paired with either a masculine or feminine name in a true random fashion so that no two participants saw the same name-statement pairing (See Table 2 for example items).These statements consisted of 1–2 sentences that could be found on a resume or cover letter. Considering many work-related skills tend to be gendered (e.g., analytical is typically thought to be masculine), we used these minimal statements to limit the amount of additional gendered information presented to participants, other than the name of the applicant. By limiting gendered information, it allowed us to examine the effect of the priming condition more fully.

After each name-statement presentation, participants rated each applicant on 10 different work-related skills (Table 3 and described below) to examine how the participant perceived each applicant individually in terms of skills. After these ratings, participants were then presented a job description for a professor position. These positions were in a typically masculine field (e.g., engineering) or a typically feminine field (e.g., nursing; See Table 4), and each participant was shown equivalent amounts of masculine and feminine positions. Finally, after viewing the job description, participants selected the candidate they would most likely hire. The

Table 2 Example applicant statements

Name	Statement
Bob	I facilitate classroom participation and organize lectures clearly so students are more likely to understand material from the class. I ask questions that require students to use problem-solving skills and apply course material to the real-world
Sarah	Effective teaching is based on fostering a relationship with students. I like to have supportive interactions with students and encourage students to think creatively
James	I strive to create assessment styles that require students to grasp the material in and out of the classroom
Julie	Concepts are best presented through examples and I try to incorporate demonstrations in my lectures
Michael	There is no right or wrong answer. Students are encouraged to formulate alternate conclusions to presented material
Ashley	I am an energetic instructor that thrives in front of my classroom

Table 3 Work-related skills items

Item	Factor loading
1. How competent is this applicant?	0.819
2. How likeable is this applicant?	0.887
3. To what degree does this applicant show a positive, cooperative attitude?	0.889
4. How dependable is this applicant?	0.906
5. How well can this applicant take initiative?	0.916
6. How well will this applicant effectively analyze problems and think logically?	0.895
7. Does this applicant show strong leadership skills?	0.913
8. How well will this applicant serve as a role model and mentor to students?	0.890
9. How well can this person take direction?	0.833
10. How well can this person advance the University?	0.860

Items were rated on a 7-point scale, *1* not at all, *4* neutral, and *7* completely. For the factor score the eigen value is 7.77 and the percent of variance explained is 77.68 %

Table 4 Masculine and feminine job fields

Masculine	Feminine
Engineering	Performing arts
Chemistry	Interior design
Mathematics	Child development
Finance	Nursing
Economics	Art history
Computer programming	Retail management
Statistics	Education

position description was provided after the skill ratings to test for a general bias against women in the workforce (e.g., women as less competent workers than men). The hiring decisions permit the assessment of the interactive effects of the applicant gender and the occupation gender stereotype.

Ratings on the work-related skills and hiring decisions were used to determine if the priming condition differentially affected perceptions of male and female job applicants, and preferences for male and female job applicants to fill masculine or feminine positions. Thus, eight of the 14 trials (57 %) were target trials consisting of one male and one female applicant. For four of these trials, the female applicant appeared first. In addition to these target trials, some filler trials were included to keep participants from inferring the true purpose of the study. For the six filler trials, participants were either presented two male or two female applicants, three of each. After completing the 14 job applicant trials, participants were asked to complete a series of explicit gender role questionnaires and a demographics measure before being debriefed and dismissed.

Measures

Work-related Skills Ratings

Participants rated each applicant on 10 different work-related skills using a 7-point scale from strongly disagree (1) to strongly agree (7). These work-related skills were derived from the scale used in Rice and Barth [21] along with an examination of common skills listed on job descriptions and workplace evaluations. Higher scores indicated that the participants believed the applicant could perform the work-related skills to a higher degree. This scale was shortened from the original format and therefore, a factor analysis is provided. A Principle Components factor analysis with varimax rotation was conducted for data reduction. The factor analysis identified a single factor, which was expected based on previous use of a similar scale, explaining 77.7 % of the variance (Table 3). Consequently, a single work-related skills score was created for each applicant by averaging these ratings across the 10 possible items. A reliability analysis of this variable showed very high reliability ($\alpha = .97$).

Hiring Decision

For each applicant trial, participants indicated which applicant they would hire using an 8-point scale from definitely the first applicant (1) to definitely the second applicant (8). These responses were recoded to reflect the following scale: 1–4 indicated a preferences for hiring the male applicant, with the lowest score indicating a strong preference for hiring the male applicant, and 5–8 indicated a preference for hiring the female applicant. These hiring decision ratings were averaged within position type to create a score for the hiring decision when a feminine job was presented and an average score when a masculine job was presented.

Gender Role Traditionalism Measures

Participants completed the *Egalitarian Sex Roles Inventory* [1, 24] and the *Ambivalent Sexism Inventory* [14] at the end of study. The *Egalitarian Sex Roles Inventory* includes items designed to examine agreement with traditional gender roles such as: "Domestic chores should be shared between husband and wife" and "Whether married or not, for purposes of independence, women should work." This scale was scored on a 7-point scale and higher scores indicated beliefs in accordance with egalitarian views. A reliability analysis showed this measure was reliable ($\alpha = .81$). The *Ambivalent Sexism Inventory* is designed to examine different types of sexism and includes items like: "Women are too easily offended" and "Every man ought to have a woman whom he adores." This scale was also scored on a 7-point scale, but higher scores on this measure indicated a greater tendency to agree with more traditional gender role stereotype beliefs. This measure showed moderate reliability for all three scales: Hostile Sexism ($\alpha = .78$), Benevolent Sexism ($\alpha = .67$), and Total Sexism ($\alpha = .79$). Since these two measures encompass different areas of gender role traditionalism and are highly correlated, the decision was made to combine them into one gender role traditionalism measure. The *Egalitarian Sex Roles Inventory* was reverse-scored so that the scoring would match the *Ambivalent Sexism Inventory* in that higher scores were more sexist/traditional for both measures. Next, both measures were converted to z-scores and then averaged.

Results

Preliminary Analyses

Preliminary analyses were conducted to examine whether the work-related skills ratings were correlated with the hiring decision made by participants. Correlations between how the female applicants were rated on work-related skills and whether they were hired in a masculine, $r(281) = .21$, $p < .001$, or feminine, $r(281) = .28$, $p < .001$, position were significant indicating that for both types of jobs, those rated more highly on work-related skills were more often selected for the hiring decision. Interestingly, how a male applicant was rated on work-related skills was unrelated to the hiring recommendation for both masculine, $r(281) = -.01$, *ns;* and feminine positions, $r(281) = -.03$, *ns*. This analysis supports the idea that women are held to different evaluative standards than men, regardless of whether the position is masculine or feminine.

Main Analyses

Hiring Decision

It was hypothesized that participants would be more likely to select the applicant that matched the gender role stereotype of the available position under the

stereotype-congruent prime condition most often, followed by the control condition, and least often in the stereotype-incongruent prime condition. A mixed model analysis of variance (ANOVA) examining whether priming condition (three levels; between subjects), type of position (two levels; within subjects), and participant gender (two levels; between subjects) had an effect on which applicant was more likely to be selected. The dependent variable was the hiring decision rating, where lower scores (1–4) indicated a preference for the male applicant and higher scores (5–8) indicated a preference for the female applicant. There were no significant effects for priming condition, and there was not a significant interaction between priming condition and type of position, thus the hypothesis is not supported. However, this analysis did reveal a significant main effect for type of position, $F(1,277) = 4.47$, $p = .04$, $\eta_p^2 = .02$. In general, participants were more likely to select the female applicant for the feminine positions ($M = 4.59$, $SE = .07$) than masculine positions ($M = 4.39$, $SE = .07$), since higher scores indicate a greater tendency for selection of the female applicant. Despite the lack of a priming effect, participants were sensitive to occupation stereotypes in their hiring decisions. Finally, there was a significant main effect for participant sex, $F(1, 277) = 5.98$, $p = .02$, $\eta_p^2 = .02$. Men ($M = 4.37$, $SE = .07$) gave slightly lower scores for hiring (indicating a greater preference for the male applicant) than women ($M = 4.61$, $SE = .07$).

Work-related Skills

It was hypothesized that participants would rate male applicants more highly for work-related skills than female applicants. In addition, we expected priming condition to play a role with those participants experiencing the stereotype-congruent priming condition or control condition. Specifically, these participants were predicted to give higher work-related skills ratings to male applicants while those participants in the stereotype-incongruent condition were expected to be more balanced in their ratings of the male and female applicants. Another mixed-model ANOVA was conducted to examine whether priming condition (three levels; between subjects), applicant gender (two levels; within subjects), and participant gender (two levels; between subjects) had an effect on how applicants were rated on work-related skills. A two-way interaction between priming condition and applicant gender would have supported the hypothesis, but it was not significant. However, there was a significant main effect for priming condition, $F(2, 276) = 3.82$, $p = .02$, $\eta_p^2 = .03$ (See Table 5 for means). Post hoc testing using a Bonferroni correction revealed a significant difference ($p < .05$) in how applicants were rated on work-related skills in the stereotype-incongruent and control priming conditions. Applicants were rated significantly higher after participants completed the stereotype-incongruent priming ($M = 5.30$, $SE = .06$) than when participants completed the control priming ($M = 5.09$, $SE = .06$). Similar to the above analyses, there was a significant main effect for participant sex, $F(1, 277) = 13.49$, $p < .001$, $\eta_p^2 = .05$. Consistent with previous research, women ($M = 5.31$, $SE = .04$) tended to be more favorable in their ratings of the job applicants than men ($M = 5.07$, $SE = .05$), regardless of applicant gender.

Table 5 Means for work-related skills based on participant sex, position type and priming condition

		Priming condition					
		Stereotype-congruent (N = 96)		Stereotype-incongruent (N = 92)		Control (N = 95)	
Position type		M	SE	M	SE	M	SE
Masculine	Male participant	5.07	.09	5.19	.09	5.05	.08
	Female participant	5.33	.08	5.41	.08	5.21	.08
Feminine	Male participant	5.01	.09	5.12	.09	4.97	.09
	Female participant	5.26	.08	5.49	.09	5.13	.09

A third hypothesis proposed that participants would give differing ratings on work-related skills depending on how strongly they indicated traditional gender role stereotypes describe themselves. A repeated-measures analysis of covariance (ANCOVA) was conducted examining the effect of priming condition (three levels; between subjects), applicant gender (within subjects), participant gender (between subjects), and participant gender role traditionalism (continuous predictor; between subjects) had an effect on how applicants were rated on work-related skills. In support of this hypothesis there was a significant interaction between applicant gender and participant gender role traditionalism, $F(2,\ 277) = 4.01,\ p = .04$, $\eta_p^2 = .02$. To examine this interaction graphically, a median split on gender role traditionalism was used to divide the participants into high and low traditionalism groups, and mean scores on work-related skills for the male and female applicants were graphed for each group to help visualize the finding (Fig. 1). Figure 1 reveals that male applicants were rated higher than female applicants on work-related skills by those individuals who were more traditional in their gender role beliefs. Less traditional participants showed equivalent ratings on work-related skills for female applicants and male applicants.

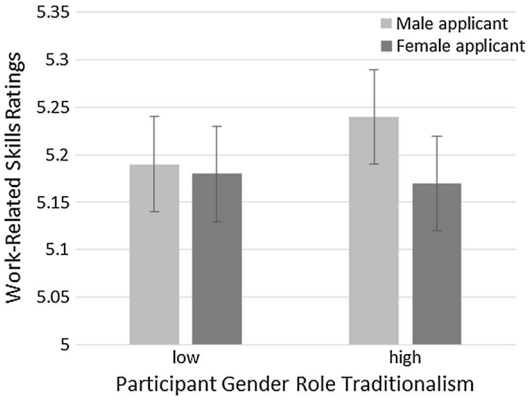

Fig. 1 Interaction between statement type and participant gender role traditionalism. A median split was conducted on gender role traditionalism to better visualize the interaction effect

The addition of this variable did not alter the significant effects for the analyses without the covariate. There was a main effect for participant gender, $F(2, 271) = 12.77$, $p < .01$, $\eta_p^2 = .05$, indicating that women were more positive with their work-related skills ratings ($M = 5.31$, $SE = .05$) than men ($M = 5.08$, $SE = .05$). A significant main effect for priming condition, $F(2, 277) = 3.68$, $p = .03$, $\eta_p^2 = .03$, indicated that participants who completed the stereotype-incongruent prime gave higher ratings to applicants on work-related skills ($M = 5.31$, $SE = .06$) than those applicant who completed the control priming ($M = 5.10$, $SE = .06$).

Discussion

The current research examined the effects of the interaction between the activation of gender role stereotypes, explicit gender role beliefs, and occupation stereotypes on the evaluation and decision to hypothetically hire an employee. Our study provides some evidence of gender bias in hiring decisions based on all three factors. Consistent with previous research, when masculine and feminine positions were presented, those applicants whose gender was congruent with the occupation gender stereotype were selected; that is, the female applicants were more strongly preferred for the feminine occupations while male applicants were more strongly preferred for the masculine occupations. With respect the activation of gender role stereotypes, it was shown that the activation of stereotype-incongruent ideas resulted in higher work-related skill evaluations from both male and female participants, but did not seem to impact hiring decisions. Consistent with this finding, individuals who explicitly held less traditional gender role beliefs were less gender biased in their evaluation of applicants; whereas those with more traditional beliefs favored men.

These results are consistent with previous research indicating that men and women are less likely to be hired in a profession that is not congruent with occupation gender stereotypes [7, 20]. The current research makes a significant contribution to the literature because little of the previous research on occupation gender stereotypes has focused on evaluator gender biases. Gender role stereotypes were primed before the review of job applicants to examine how the activation of gender role stereotypes affected the evaluator's perceptions and decision. Interestingly, there was no significant interaction between occupation stereotype and priming condition indicating that even momentarily trying to alter an evaluator's gender role stereotype thoughts might not change this preference for men and women in traditional occupational roles.

Consistent with our hypotheses and previous research, priming incongruent gender role stereotypes did affect the participants' evaluation of the applicants on work-related skills. Those participants who completed the stereotype-incongruent priming did extend more positive evaluations. Rice and Barth [21] speculated that priming participants with stereotype-incongruent ideas may provide an idea on what might happen if hiring managers were reminded that women can hold traditionally masculine characteristics. This idea is also consistent with Bosak and Sczesny [4] since the presentation of leadership information on women's applications created

more equality in the evaluation of the applicants. This research, along with the previously mentioned studies highlight the benefits of reminding hiring authorities that women may hold the masculine traits needed in some workplaces.

When considering participant gender role traditionalism, some additional effects were uncovered. Those individuals who hold more traditional views regarding gender role stereotypes were more likely to extend more positive ratings to male applicants when compared to female applicants. However, less traditional participants did not show a preference for either gender. Previous research has shown that women are less likely to be hired in stereotypically masculine positions [7, 20], and part of this bias could be due to the differing evaluative standards for male and female applicants. Our preliminary analyses showed that there was a significant relationship between the ratings on work-related skills and hiring decisions for female applicants only. Women have a harder barrier to break when pursuing a masculine career field.

Implications

The current study examined the hiring process in the context of the dilemma of women pursuing a STEM career, so the masculine occupations used in the current study all required mathematics, science, and engineering skills. There has been growing concern and evaluation of the lack of women pursuing STEM fields, and the findings of the current study suggest several factors that could prevent women from pursuing these fields. Once women enter a STEM or other traditionally masculine career field, they are subject to different evaluative standards, and thus have a harder time pursuing employment and promotion in these fields. However, our research, along with some previous literature [21], suggests that reminding people of the variety of characteristics that men and women can hold before an evaluation may buffer against the effects of gender stereotypes.

Similarly, research by Bosak and Sczesny [4] indicated that how a job applicant is presented can be important for later evaluation. Specifically, leadership information, a characteristic typically associated with masculinity, was important to gaining more positive evaluation. The current research also supports this idea. Part of the applicant framing in the current study was stereotype-incongruent priming, or reminding evaluators that men and women can hold non-traditional characteristics, as well as characteristic ones. This framing led to more positive evaluations of all applicants.

This study highlights ways those charged with creating an impartial hiring process can reduce gender biases, particularly for those reviewing applications in which an occupation gender stereotype incongruent with the applicant's gender. Making the hiring committee aware of counter-stereotypical examples, such as successful women in male-dominated fields, and successful men in female-dominated fields might result in less bias in hiring. In addition, screening committee members for strong gender biases could be useful.

Limitations

Though the results of the current research shed light on some areas affecting the hiring process, no study is void of limitations. First, the participants in the current study were college-age and may or may not have had any real-world hiring experience, which might limit the generalizability of the current research. While the students might not have participated in a real-world hiring decision the effects of gender stereotypes spans the ages [11]. Further, the participants in the current study were not racially diverse, and more diversity could have aided in broadening these results to different situations and populations.

Secondly, much of the time, hiring decisions are made by committees of individuals rather than one person. It is likely that group dynamics would also play a role in the overall decision. However, our research did show that personal agreement with traditional gender stereotypes did play a role in evaluative ratings, and it is likely that this same factor would play a role a group decisions, as well. Finally, this study was conducted in a strict laboratory setting which is ideal for controlling extraneous variables, but there are most likely additional factors that play a role in real-world hiring decisions. Participants received very little information about the applicants, and real-world hiring decisions include a greater breadth and depth of information provided through resumes and cover letters.

Future Directions

As indicated above, more research is certainly necessary to further examine occupation gender stereotypes and the role of evaluator gender stereotypes in hiring decisions. The current research relied on one individual evaluating and recommending an applicant for a position, but many hiring decisions are actually made by committee of people. It is noteworthy that the National Research Council [18] reported that the odds of women being hired in a STEM field are improved if there are more women on the committee. It is important to examine how a range of personally held gender role beliefs interact with in the context of a group making a hiring decision. In addition, it would be interesting to conduct a hiring study using participants that are more likely to have experience or could have experience with hiring decisions in the near future. Future research should attempt to recruit actual hiring managers or even MBA students to improve generalizability of these types of studies. Finally, providing those making the hiring decisions with full resumes and cover letters would create a richer and more realistic hiring situation, which might be more generalizable to real-world settings.

In summary, our study contributes to research designed to examine individual difference characteristics of an evaluator can contribute to hiring biases, particularly in occupations that tend to be stereotypically masculine. In addition to presenting empirical evidence on this topic, our findings also highlight possible methods of intervention to lessen these biases. Training programs designed to lessen these individual differences, and highlight that men and women can have a wide range of skills may be one step toward reducing hiring biases for men and women applying

to positions requiring work-related skills that do not matching those typically associated with their gender.

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