THE INFLUENCE OF CANDIDATE GENDER, INCUMBENT GENDER,
AND JOB POSITION ON HIRING DECISIONS IN AN EXPERIMENTAL PARADIGM

A Thesis
by
SARAH LIGHT

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AND JOB POSITION ON HIRING DECISIONS IN AN EXPERIMENTAL PARADIGM

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Abstract

THE INFLUENCE OF CANDIDATE GENDER, INCUMBENT GENDER,
AND JOB POSITION ON HIRING DECISIONS IN AN EXPERIMENTAL PARADIGM

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Previous research shows that overall, female candidates are negatively favored when compared to equally-qualified male candidates, but this effect is not consistent across all studies which causes the particular nature of that bias to remain ambiguous. The present study aims to add clarity to the research on the role of gender bias in the initial stages of the hiring process by examining differences in ratings of hirability, starting salary, competence, and conscientiousness for identical male and female job candidates, while manipulating the context of the hiring situation. I intended to add a unique perspective to this line of research by looking at differences in respondents' recommended starting salary for the job candidates as compared to the salary of either a male or female incumbent in the job position and by evaluating gender differences when hiring for managerial vs. non-managerial positions. Participants were recruited from Amazon Mechanical Turk. The study used a 2 X 2 X 2 design (candidate gender, job position, and incumbent gender) with eight groups. I hypothesized that participants would rate the male job candidate as more competent than the

female candidate. I also hypothesized that a female candidate is less likely to be hired into a managerial position than a male candidate and that this effect would be even stronger in the male incumbent condition. Finally, I predicted that there would be a three-way interaction between the three independent variables such that a female candidate in the male incumbent, managerial job position condition would be least likely to be hired and have the lowest salary. I found no support for the four hypothesized effects and no other notable gender effects in additional exploratory analyses. The results of this study indicate that job position could be more influential on evaluations of job candidates than candidate or incumbent gender.

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The Influence of Candidate Gender, Incumbent Gender,

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Abstract

Previous research shows that overall, female candidates are negatively favored when compared to equally-qualified male candidates, but this effect is not consistent across all studies, which causes the particular nature of that bias to remain ambiguous. The present study aims to add clarity to the research on the role of gender bias in the initial stages of the hiring process by examining differences in ratings of hirability, starting salary, competence, and conscientiousness for identical male and female job candidates, while manipulating the context of the hiring situation. I intended to add a unique perspective to this line of research by looking at differences in respondents' recommended starting salary for the job candidates as compared to the salary of either a male or female incumbent in the job position and by evaluating gender differences when hiring for managerial vs. non-managerial positions. Participants were recruited from Amazon Mechanical Turk. The study used a 2 X 2 X 2 design (candidate gender, job position, and incumbent gender) with eight groups. I hypothesized that participants would rate the male job candidate as more competent than the female candidate. I also hypothesized that a female candidate is less likely to be hired into a managerial position than a male candidate and that this effect would be even stronger in the male incumbent condition. Finally, I predicted that there would be a three-way interaction between the three independent variables such that a female candidate in the male incumbent, managerial job position condition would be least likely to be hired and have the lowest salary. I found no support for the four hypothesized effects and no other notable gender

effects in additional exploratory analyses. The results of this study indicate that job position

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gender.

The Influence of Candidate Gender, Incumbent Gender,

and Job Position on Hiring Decisions in an Experimental Paradigm

Traditional gender roles for men and women are dramatically disparate (Sayers, 2012). There is some experimental evidence that suggests that even though people will report liking women more than men, they will simultaneously report men as more competent than women, despite the fact that their backgrounds are exactly the same (Moss-Racusin, Dovidio, Brescoll, Graham, & Handelsman, 2012). Sayers (2012) sums up this bias by stating that when cultures continually disparage one gender, especially in the workplace, those attitudes affect the way workers perceive the capabilities of the disparaged gender.

Gender is only one piece of information that employers have available in the initial hiring process, but it provides a strong basis for stereotyping. This stereotypical information can have an influence on hiring decisions because recruiters tend to quickly use available information to narrow down a large pool of candidates (Desrumaux, De Bosscher, & Leoni, 2009). Although some gender bias may be intentional, research shows that people's behavior is often influenced by unintended biases that come from the prevalence of ingrained cultural stereotypes. In the present context, those stereotypes involve the expected work-related abilities and behaviors of women and men. These gender-based stereotypes promote the idea that women are warm and likeable, but less competent than men. These subtle biases are seen in both men and women and even in those who are considered highly egalitarian (Moss-Racusin et al., 2012).

In an ideal world, employers would be armed with all the information necessary to choose a high-performing job candidate. Unfortunately, the truth is that employers do not have unlimited information available to them when making initial hiring decisions. Therefore, they must make those decisions based on what information *is* provided to them. Essentially, employers must make a prediction about how productive a prospective employee will be based on whatever resources they have available, which in most cases will initially be a job application and a resume (Knouse, 1994).

Reviewing resumes is an extremely important and ubiquitous part of the initial stages of the hiring process. Many studies have stressed the importance of resumes' influence on the first impression they leave with hiring managers (Knouse, 1994). Although interviews are arguably more important and are a part of almost every hiring situation, resumes are the main tools used to get a job candidate from the initial screening stage to the interview stage. Even at other stages of the hiring process (e.g., before the employer meets a candidate for an interview) the candidate's resume is reviewed and as such can serve as an important anchoring point for assessing candidate fit. Since resumes play an integral role in advancing candidates through hiring process, it follows that it is important to examine how those decisions are made (Cole, Rubin, Feild & Giles, 2007). This evidence indicating the importance of resumes provides the basis for the present study, which aims to add a unique perspective on the topic of gender biases in the initial hiring process using resumes.

The research question at hand is, then, do gender biases exist at the initial stages in the hiring process? An early study done by Dipboye, Fromkin, and Wiback (1975) looked at how industrial management students rated job candidates who varied based on gender, attractiveness and scholastic standing (which was based on class rank, GPA, and quartile

rank in graduating class). Participants rated 12 varied resumes on a 9-point scale for hiring

recommendation and also ranked them sequentially from 1 (most satisfactory) to 12 (least

satisfactory). They found that the participants preferred male over female applicants,

attractive over unattractive applicants, and high over lower scholastic standing. Results also

showed that even though attractiveness and gender accounted for much less variance than

scholastic standing, a male applicant was ranked higher than a female applicant with equal

scholastic standing more times than can be attributed to chance (Dipboye et al., 1975).

Another study found that among 110 undergraduate psychology students, participants were

more willing to hire a male applicant than a female applicant for a sales manager trainee

position where both candidates were identical in every aspect other than their respective

genders (Dipboye, Arvey, & Terpstra, 1977). Further, they found that female applicants were

consistently rated as less experienced, decisive, informed, competitive, motivated, logical,

and assertive than male applicants. Finally, female applicants were rated as friendlier,

warmer, and more emotional than male applicants. In this particular study, women and men

were rated as equally competent and intelligent (Dipboye, Arvey, & Terpstra, 1977).

However, both of these studies are from decades ago, so it is reasonable to question whether

these findings are still relevant in a current hiring situation, especially one in which women

may be more likely to be in the position of making a hiring decision.

Rater gender can have an effect on hiring decisions as well. One study involved

asking participants, made up of 153 marketing students, to assume their company was hiring

new employees and that their task was to consider 36 applicants as potential hires (Levin,

Rouwenhorst, & Trisko, 2005). The participants were asked to narrow their choices down

and then to indicate their final decision. The responses demonstrated is that nearly 70% of the

participants decided to hire applicants that were of the same gender as themselves, so there

were no specific biases found against women alone (Levin, Rouwenhorst, & Trisko, 2005).

These results conflict with those of other studies that have found a general trend across rater

gender such that female raters were equally likely as male raters to show favorable bias

towards a male job candidate (Moss-Racusin et al., 2012).

In a recent study, researchers examined the results when a broad, nationwide sample

of male and female biology, chemistry, and physics professors were asked to rate

competence and hirability for student applicants who were applying for a laboratory manager

position. These applicants were identical other than their gender. The data collected for this

study indicated that faculty participants, regardless of *their* gender, rated the female student

applicant as less competent and less hirable than the male counterpart (Moss-Racusin et al.,

2012). These results are likely influenced by the extreme underrepresentation of women in

many scientific fields.

Although much research shows evidence of female job candidates being negatively

rated compared with male candidates, the findings are inconsistent. In fact, there are several

studies that have found no gender biases present in the hiring process when male and female

candidates were equally suitable for the job in question, or only found gender biases in the

minority of their research conditions (Harvie, Marshall-McCaskey, & Johnston, 1998;

Quereshi & Kay, 1986). Additionally, close to half of the studies examined in several

different qualitative reviews found no significant gender effects (e.g., Olian, Schwab, &

Haberfeld, 1988); however, subtle gender biases can still be parsed out in some of those

studies. Part of the design of the study by Harvie et al. (1998) included a piece in which the

participants were given information about a job applicant, randomly assigned to read a job

description of either a female-typed job (children's clothing retail manager) or a male-typed

job (used car sales manager), and then asked to indicate whether they would offer the

applicant the job position they read about. What was found is that participants were far more

likely to offer the female-typed job than the male-typed job to applicants, regardless of

gender. These results suggest that in this study, the participants may have viewed the female-

typed job as easier to attain and lower in status than the male-typed job (Harvie et al., 1998).

Quereshi and Kay (1986) found that when participants were asked to consider hiring an

applicant for a tax manager position, female applicants were preferred over male applicants.

There were no significant differences for gender in the other two job conditions (postmaster

and assistant principal) for that study, but it is unclear whether there were mitigating factors

for the job conditions that were unaffected by gender biases. For example, this study drew its

participants from a pool of MBA students who may have had explicit training in making

equitable, fair hiring decisions. This suggests that the presence of degree of gender bias may

depend on the type of position for which the applicant is applying.

     A very relevant and long-standing issue that exists in the workplace is the wage

discrepancy between the sexes. When the Equal Pay Act passed in 1963, women were

earning 59 cents for every dollar that men earned, and in 2012 that rate was about 77 cents

(Sayers, 2012). This information demonstrates that although the pay gap between genders is

decreasing, it is doing so at a rate of about half a penny per year (Sayers, 2012). Jobs that are

typically thought of as being held by men are still seen as more prestigious and given higher

salaries (Harvie et al., 1998). Harvie et al. (1998) did not find gender differences in entry-

level salary for male applicants vs. female applicants, but they did not examine managerial

positions. In fact, many other studies have found that participants are willing to recommend a

higher salary for male applicants than for female applicants (Dipboye et al., 1977; Moss-Racusin et al., 2012; Przygodzki-Lionet, Olivier, & Desrumaux, 2010). It is important to note that in all of these studies the applicants were identical other than their gender. Early research revealed that male applicants were given higher starting salaries by participants in every condition except for when the applicant had low qualifications and the rater was male in which case there was no difference between male and female applicants (Dipboye et al., 1977). That pattern remains in research that is more recent. Przygodzki-Lionet, Olivier, and Desrumaux (2010) found that in the managerial job condition when participants were asked to indicate recommendation for salary level on a five-point scale, men received better salaries than the women. Another recent study examined perceptions of a nationwide sample of faculty in biology, physics, and chemistry departments regarding a male or female student lab applicant, the results of which demonstrated that the faculty recommended a much higher entry-level salary for the male student applicant than for the female student applicant (Moss-Racusin et al., 2012).

In a study performed with 107 student participants at a German university who were between the ages of 18 and 31, fictitious male and female applicants were presented to the participants as either a leader or a non-leader and questioned about their willingness to hire or short-list the applicants (Bosak & Sczesny, 2011)`. The results of the study showed that male participants tended to hire male non-leaders over their female counterparts but all participants preferred to hire the applicants described as leaders to those described as non-leaders (Bosak & Sczesny, 2011). When looking at the interaction between applicant sex and job hierarchical position, another study found that for the managerial job male applicants

were preferred over female applicants but there was no effect for non-managerial job (Przygodzki-Lionet et al., 2010).

Meta-analytic findings by Eagly and Makhijani (1992) examine perceptions of women as leaders in the context of gender-role spillover theory. In light of this theory, Eagly and Makhijani (1992) expected their meta-analytic findings would demonstrate a devaluation of female leaders, which is exactly what they found. Gender-role spillover theory proposes that people in the workplace develop expectations about how leaders and managers ought to behave that coincide with their expectations of how men ought to behave more so than women. Although some would say managers should be viewed as just simply generic managers, the effects of gender-role spillover theory may produce incompatible expectations of a leadership role and the female gender role (Eagly & Makhijani, 1992). This research supports the notion that people have expectations about managers' behavior that is partially influenced by the manager's gender. The consequence of these gender-role expectations, according to many social scientists, is that women are left in the position of being perceived as less suitable for leadership roles than men even when they are equally qualified for the position (Eagly & Makhijani, 1992).

Present Study

The present study intended to add clarity to the body of research described above on evaluating the effects of gender bias in the initial stages of the hiring process. This study also aimed to add a unique perspective on this topic by looking at differences in the starting salary participants suggest for the fictitious job candidate as compared to the established salary of an incumbent in the job position, and by evaluating gender differences when hiring for managerial versus non-managerial positions. The participants were randomly assigned to

eight groups that consisted of one of two resume gender conditions (male or female candidate), two job position conditions (managerial or non-managerial), and two incumbent conditions (male or female incumbent). The job candidates presented to participants in this study were completely identical other than their respective gendered name in order to get a clearer picture of whether gender biases are present.

Based on the literature described reviewed above, women are typically rated as less competent than men, and, therefore, I expected the same to hold true in the present study. As such, the following is my first hypothesis:

Hypothesis 1: The participants will rate the male job candidate as more competent than the female candidate.

Another trend found in the literature describe above is that jobs that are typically thought of as being held by men are seen as higher status. This, compounded with the evidence that women are rated as less competent led us to develop my second hypothesis:

Hypothesis 2: In the male incumbent condition, the participants will rate the male job candidate as more hirable than the female job candidate.

It has been shown in many different studies over at least the last 40 years that participants will rate a male candidate as more hirable for a leadership position than a female candidate. This information was the basis for the third hypothesis:

Hypothesis 3: There will be an interaction between candidate gender and job position such that participants will rate the male job candidate as more hirable than the female job candidate for the managerial position.

The fourth and final hypothesis reflects multiple gender bias patterns found in the research described above:

Hypothesis 4: There will be a three-way interaction between the three independent

variables such that participants will give the female job candidate the lowest hirability

ratings and the lowest starting salary for the managerial position when the incumbent is

male.

Method

Participants

Institutional Review Board (IRB) approval for this study was obtained from ASU on

May 13th, 2013 and extended on October 2nd, 2013 (see Appendices A and B). The

participants for this study were recruited using an internet marketplace called Amazon

Mechanical Turk (Mturk). The quality of data collected from Mturk have been examined

closely; previous examinations have shown that Amazon Turk workers are internally

motivated to participate in research and Mturk data has been shown to have at least

comparable quality to a typical internet or undergraduate sample (Buhrmester, Kwang, &

Gosling, 2011).

Participants for this study were limited to online workers from the U.S. who had at

least a 70% mastery rating on Mturk. A g-power analysis showed that for my research design

I needed 75 participants to find a medium effect size with a power of .80 (Faul, Erdfelder,

Buchner, & Lang, 2009). However, in order to better detect whether there are gender biases, I

aimed to gather data from up to 500 respondents. The final sample included 474 participants,

222 women and 238 men, 80% of whom identified as being white. Participant age ranged

from 18-72 years old; mean age was 35 years old with a standard deviation of 12 years.

Participants were compensated $0.50 via the Amazon Mechanical Turk platform

upon completion of the survey, which averaged approximately ten minutes to complete. Fifty

cents might seem like a rather nominal amount, however, in a study that explored how

compensation levels affect data quality, alphas were calculated for six personality

questionnaires (compensation levels of 2, 10, and 50 cents) and found to be within one

hundredth of a point across each of the compensation levels (Buhrmester et al., 2011). Data

quality was not affected, only speed of data collection. Therefore, I am confident that the

amount of compensation did not affect the quality of the data collected.

Procedure

The procedure included posting the study request and a link to the survey containing

the study materials to Amazon Mechanical Turk in order to gather responses from

participants. Participants were asked to give their consent to participate before they continued

to the study materials. Each participant's survey was programmed to assign a random

combination of the three different independent variables (candidate gender, job position, and

incumbent gender). As an introduction to the survey, the participants were prompted to

imagine that they were a Human Resources representative who has been asked to review a

resume and make a hiring recommendation for an open position in their organization. The

first piece of information they were presented with to set up the specific hiring scenario was a

job description of either a managerial (Retail Store Manager) or non-managerial position

(Sales Representative) in the retail industry. The job descriptions were modeled after actual

job postings found on job sites such as monster.com, to be as realistic as possible (See

Appendix C).

The next piece of material presented to the participants was a resume for a fictitious

job candidate seeking either the managerial or non-managerial position. All information

included on the resume was held constant except gender of the candidate, which was implied

by use of a typically male or female first name rather than drawing direct attention to their

gender. This mirrors how job candidate gender might be inferred in a real-world situation.

The first names for candidates were chosen from the lists of popular baby names for the

approximate birth year of the job candidates described in this study (Social Security

Administration, n.d.). All names chosen appeared in the top 20 for their approximate birth

year (1988, as estimated by earned educational credentials listed on the resume) and for birth

decade. The names were checked for any gender-neutrality or crossover with the opposite

gender to eliminate names that appear in both female and male lists; any name that appeared

in the top 100 in the opposite-gender list was eliminated as not clearly signaling one gender. I

used four names for each gender which were matched on syllable length and vowel-versus-

consonant sound beginnings and ending as follows: Anthony, Amanda, Jonathan, Jennifer,

Matthew, Megan, Robert, and Rachel. Two candidate last names, Jones and Miller, were

chosen from the list of top ten most common surnames on the U.S. Census Data website and

randomly paired with the candidate first names (U.S. Census Bureau, 2012). The candidate's

resume implied that the candidate was qualified to move into a managerial position but did

not have explicit managerial experience. The resume described that the candidate has had

experience with supervisory duties, key-holding responsibilities, activities requiring

teamwork, and other such leadership-related tasks at their previous jobs, the scope of which

would qualify them for a managerial position. Participants were then asked to answer

questions on their evaluation of the job candidate they read about, which consisted of

hirability ratings, starting salary suggestion, and personality ratings.

  For the incumbent piece of the study, participants read a short description of the

person who is vacating the position in order to frame the hiring scenario in terms of salary

and incumbent gender. After reading the incumbent information, participants were then asked to suggest what they felt is an appropriate starting salary amount for the job candidate they are evaluating. The incumbent's gender was implied by way of a typically male or female name, for the same rationale as candidate gender. The incumbent first names were chosen from the lists of popular baby names on the Social Security Administration website and matched on syllable length and vowel or consonant sound beginnings and ending as follows: Andrew, Amber, Joshua, and Jessica (Social Security Administration, n.d.). The incumbent last names were matched to the candidate last names for commonality and name length. The incumbent last names Brown and Davis were chosen from the top ten most common surnames listed on the U.S. Census Bureau website from the 2000 census (U.S. Census Bureau, 2012). The incumbent was described as an excellent, long-standing employee who had worked their way up to the salary they were receiving when they left their position, which served as the high anchor point for the potential salary range for the candidate. This was to ensure that participants would be less likely to simply choose the incumbent's salary amount as the recommended starting salary for the job candidate.

As the last piece of the study, the participants were asked a series of questions about themselves, their employment experience, and their explicit attitudes about gender authority.

Measures

The following measures can be found in Appendix C. The first scale presented to participants was the hirability scale, which consisted of four items that were developed by the researchers specifically for the purposes of this study. An internal consistency analysis for the hirability scale resulted in a Cronbach's Alpha of .92. Responses were measured using a five-point rating scale that ranged from strongly disagree to strongly agree.

The next section the participants completed was the starting salary recommendation. The participants were presented with the previously mentioned informational paragraph about the job incumbent, including their salary amount. Next, the participants were asked to imagine that the job candidate they read about was offered the open position, and then to assign the starting salary they deemed appropriate for the job candidate out of a ten thousand dollar range made up of one thousand dollar increments, capping at the incumbent's salary amount.

The scales used for the personality dimensions, competence and conscientiousness, came from the International Personality Item Pool, which is a public domain repository of highly reliable personality test items and scales (Goldberg et al., 2006). An internal consistency analysis for the competence and conscientiousness scales resulted in a Cronbach's Alpha of .30 for competence and .65 for conscientiousness. Each scale included both positively and negatively keyed items. The competence scale included items adapted from the Hogan Personality Inventory (HPI) and the Abridged Big Five-Dimensional Circumplex (AB5C). The conscientiousness scale included items adapted from the Big Five personality dimensions test and the Temperament Character Inventory (TCI).

The next piece of the survey requested participants to answer questions about themselves rather than the job candidate. Questions were targeted toward the participants' employment experience including supervisory and hiring experience. Participants were also asked to complete other typical demographics questions such as age, gender, household income, highest education level obtained, etc.

Results

Descriptive statistics for each variable of interest are located in Table 1. A correlation matrix for hirability, salary, competence, and conscientiousness can be found in Table 2. Study Hypotheses 1-3 were examined using a series of 2x2x2 ANOVAs. Results for Hypothesis 1-4 are depicted in Table 3. For hypothesis 1, I predicted that participants would rate the male job candidate as more competent than the female job candidate. I did not find support for Hypothesis 1; no significant effect was found for candidate gender on mean of competence ratings [$F(1, 452) = 0.08, p = .78$].

Hypothesis 2 predicted that participants would rate the male job candidate as more hirable than the female job candidate when a male incumbent was vacating the job position. Hypothesis 2 was not supported; I found no significant effect for candidate gender and incumbent gender on mean of hirability ratings [$F(1, 465) = 0.89, p = .72$].

I predicted in Hypothesis 3 that there would be an interaction between candidate gender and job position such that participants would rate the male job candidate as more hirable than the female job candidate for the managerial position. This hypothesis was also not supported; there was no significant effect in the interaction between candidate gender and job position [$F(1, 465) = 1.94, p = .16$].

The last hypothesized effect, Hypothesis 4, predicted that there would be a three-way interaction among all three independent variables such that participants will give the female job candidate the lowest hirability ratings and the lowest starting salary for the managerial position when the incumbent is male. There was no significant interaction for candidate gender, incumbent gender, and job position on hirability [$F(1, 465) = 0.13, p = .72$] or salary

$[F(1, 465) = 2.42, p = .12]$. Highest salary ratings were given to candidate applying for non-managerial position regardless of candidate or incumbent gender.

Other, more exploratory analyses were run in the series of 2x2x2 ANOVAs used to test the study hypotheses. No statistically significant main effects were found for either candidate gender or incumbent gender. Less than 1% of the variance was explained by candidate gender or incumbent gender for each dependent variable.

There was a statistically significant interaction between candidate gender and incumbent gender for competence, such that female candidates applying for jobs being vacated by female incumbents had the highest competence ratings $[F(1, 452) = 4.412, p = .04, \eta^2 = .01]$. Lowest competence ratings were given when candidates were applying for a position in which the incumbent was of the opposite sex. The effect for this interaction was very small (approximately 1% variance explained).

There was a statistically significant effect for job position on salary $[F(1, 465) = 245.15, p = <.01, \eta^2 = .35]$; hirability $[F(1, 452) = 50.22, p = <.01, \eta^2 = .10]$; competence $[F(1, 452) = 6.38, p =. 01, \eta^2 = .014]$; and conscientiousness $[F(1, 452) = 4.44, p = .04, \eta^2 = .01]$. It should be noted that the variance explained by job position for competence and conscientiousness is very small (less than 2% variance explained).

In addition to the analyses performed on participants' ratings on the job candidate, additional exploratory analyses were run on participant characteristics in order to capture a broader view of what my study revealed. Frequencies for participant characteristics can be found in Table 4. A series of one-way ANOVAs were run on the following participant characteristics: gender, income range, education level, supervisory experience, hiring experience) A significant effect was found for participant gender on competence $[F(1, 457) =$

5.344, $p = .02$, $\eta^2 = .01$] such that female participants gave higher competence ratings than male participants, and conscientiousness [$F(1, 457) = 4.192$, $p = .04$, $\eta^2 = .01$] such that female participants gave higher conscientiousness ratings than male participants; however, participant gender explains very little variance for each (less than 1% of variance explained). There were no significant relationships for any other participant variables.

A 2x2 ANOVA was run on participant gender by candidate gender for each of the dependent variables. There was a significant effect interaction between participant gender and candidate gender on hirability [$F(1, 455) = 6.005$, $p = .02$, $\eta^2 = .01$] such that the highest hirability ratings were given when participants were rating candidates of their own sex, and the lowest hirability ratings were given when participants were rating candidates of the opposite gender. This effect was very small (approximately 1% variance explained).

There was a significant effect interaction between participant gender and candidate gender on hirability [$F(1, 455) = 5.989$, $p = .02$, $\eta^2 = .01$] such that the highest competence ratings were given when female participants were rating a female candidate, and the lowest hirability ratings were given when female participants were rating a male candidate. This effect was very small (approximately 1% variance explained).

There was a significant interaction between participant gender and candidate gender on conscientiousness [$F(1, 455) = 5.862$, $p = .02$, $\eta^2 = .01$] such that the highest conscientiousness ratings were given when female participants were rating a female candidate, and the lowest conscientiousness ratings were given when female participants were rating a male candidate.

Discussion

Previous research examining gender biases in the hiring setting have indicated that men are typically rated as a more desirable job candidate than are equally qualified women (Dipboye et al., 1975; Moss-Racusin et al., 2012; Przygodzki-Lionet, Olivier, & Desrumaux, 2010). However, those findings are not consistent across studies, with some finding no gender effects at all (Harvie et al., 1998; Olian, Schwab, & Haberfeld, 1988; Quereshi & Kay, 1986). The goal of the present study was to update this line of research and examine whether I could replicate the pattern of gender bias in the hiring context. Results revealed that, contrary to what I hypothesized on the basis of previous literature, male candidates were not rated more positively than female candidates on any of the dependent variables: competence, conscientiousness, hirability, and starting salary. The null results could be a consequence of the change in society's perspective on women in the workplace, specifically in a retail context. Gender-neutral job positions have become more egalitarian than they were historically. Another potential contributing factor to the lack of gender effects in this study is the changing nature of undergraduate and graduate education programs, business-related programs in particular, to encourage equitable, fair hiring practice. In fact, I found that female candidates who were applying for a position being vacated by a female incumbent had the highest competence ratings. It was a small effect, yet it is an encouraging finding as it runs contrary to the negative female bias previously seen in the research and could be seen as a further indicator of a change in societal perspective.

Results revealed that job position was more influential on evaluations of job candidates than either candidate gender or incumbent gender. Analyses indicated that job position was influential on ratings of hirability, explaining 10% of the variance, such that

candidates applying to the non-managerial position were rated as more hirable than candidates applying to the managerial position. Job position also significantly affected starting salary, explaining 35% of the variance. Specifically, candidates applying for the non-managerial positions were assigned salaries near the top of the range, whereas candidates applying for the managerial position were assigned salaries that were near the low end of the range. I propose that this effect was potentially an artifact of the two salary ranges we chose for the two positions. For the managerial position, I used a range of $40,000-$50,000, which is an average salary range for a middle-management position; however, the range I used for the non-managerial position, $20,000-$30,000, may have been anchored lower than participants felt comfortable assigning. Another potential explanation for this effect is that the job candidate used for this study was very well-qualified for the non-managerial position and less so, comparatively, for the managerial position.

Despite what previous research has demonstrated about the preference for men over women for leadership roles, I did not find an interaction between candidate gender and job position as expected (Eagly & Makhijani, 1992; Przygodzki-Lionet et al., 2010). According to gender-role spillover theory, as discussed in the meta-analysis by Eagly and Makhijani (1992), women tend to be devalued for leadership roles compared with equally qualified men based on expectations for what is appropriate for each gender in the workplace. A possible explanation for why the results of the present study did not demonstrate this effect is the managerial job position the candidates were applying for was a Retail Store Manager, a job title that could be interpreted as a low-level management position. An effect may have been observed if the managerial job title had indicated a more executive level position that would

be interpreted as a leadership role, rather than a middle management title that may communicate limited authority in the workplace.

Participant characteristics were also examined to determine the effects of the individuals making the hiring decisions. Participant gender alone was marginally influential on ratings of candidates' competence and conscientiousness, explaining about 1% of the variance. No other examined participant characteristics such as income, supervisory experience, or hiring responsibility exhibited a relationship with ratings of candidates. Participant gender and candidate gender were examined together in a 2x2 ANOVA, revealing small but significant interactions between participant gender and candidate gender for three of the dependent variables. A significant interaction was found for the two genders on hirability, demonstrating a pattern of participants rating a candidate of their own gender as most hirable, and a candidate of opposite gender as least hirable. There was also a significant interaction between participant gender and candidate gender for competence, and conscientiousness that demonstrated that female participants were more likely to give high ratings to a female candidate than a male candidate. These interactions all had a very small effect size, explaining approximately 1% of the variance. This is similar to results of other studies that have revealed rater effects such that raters are more likely to give favorable ratings to those of the same gender as themselves (Levin, Rouwenhorst, & Trisko, 2005); however, these findings are contrary to studies that have found rater effects such that raters are more likely to rate male candidates more favorably regardless of their own gender (Moss-Racusin et al., 2012). In fact, these patterns showed a reverse bias effect for female participants, who were more likely to give low ratings to male candidates.

Limitations & Future Research

This study was conducted solely through the use of an online survey. Although the materials were created to represent an initial hiring situation as realistically as possible, a notable limitation of this study was its limited fidelity in that an online survey may not mimic a real hiring situation. A second possible limitation to the study is that since only one resume was used, the participants had limited context with which to evaluate the job candidate. In an actual hiring situation, the decision maker would be reviewing multiple resumes of candidates with various backgrounds and previous experience to fill a position. Reviewing multiple resumes rather than one gives the decision maker much more room to make comparison

Another limitation to this study is that I attempted to keep the context of this study relatively gender neutral (i.e., I used retail establishments for the resume that did not have a strong association with one gender over the other and did not specify a company name for the job positions being applied for in the study). It is possible that gender effects would be present in a more gender-typed occupational setting, as those occupations may be much slower than more "gender-neutral" occupations at creating more egalitarian workplace environments. Further, I also only examined one industry, which limits the generalizability of the study's findings. Future studies should examine gender biases in the hiring process across various industries, specifically looking at typically male or female-typed job positions. Ultimately, this line of research will help with the development of more comprehensive training programs for hiring managers that could help mitigate gender biases in the context of hiring decisions and in turn create a more egalitarian work environment.

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Table 1

Means (and Standard Errors) for Hirability, Salary, Competence, and Conscientiousness by Experimental Condition

	Hirability	Salary	Competence	Consc.
Female candidate				
Female incumbent, manager	3.98 (.10)	4.11 (.37)	4.07 (.08)	3.93 (.07)
Male incumbent, manager	3.91 (.09)	3.40 (.32)	3.84 (.07)	3.75 (.06)
Female incumbent, non-manager	4.39 (.09)	7.63 (.33)	4.16 (.08)	3.98 (.06)
Male incumbent, non-manager	4.26 (.10)	7.93 (.36)	3.99 (.08)	3.79 (.07)
Male candidate				
Female incumbent, manager	3.84 (.09)	3.88 (.33)	3.90 (.07)	3.71 (.07)
Male incumbent, manager	3.84 (.10)	3.69 (.37)	3.96 (.08)	3.84 (.07)
Female incumbent, non-manager	4.48 (.10)	7.86 (.38)	4.09 (.08)	3.99 (.07)
Male incumbent, non-manager	4.32 (.09)	7.15 (.34)	4.05 (.07)	3.88 (.07)

Note: N = 474

Table 2

Correlation Matrix for the Four Independent Variables

	Hirability	Salary	Competence	Consc.
Hirability	1.00			
Salary	.45	1.00		
Competence	.58*	.23	1.00	
Conscientiousness	.56*	.23	.86*	1.00

Note: * p < .01 (2-tailed)

Table 3

ANOVA Results for Hirability, Salary, Competence, and Conscientiousness

	Hirability			Salary		
	F	p	η^2	F	p	η^2
1. Cand. Gender	.088	.766	.000	.249	.618	.001
2. Inc. Gender	1.731	.189	.004	1.765	.185	.004
3. Position	**50.223**	**<.01**	**.097**	**245.153**	**<.01**	**.345**
1x2	.020	.887	.000	.240	.624	.001
1x3	1.944	.164	.004	.379	.538	.001
2x3	.669	.414	.001	.243	.623	.001
1x2x3	.130	.719	.000	2.422	.120	.005

Note. N = 474

	Competence			Conscientiousness		
	F	p	η^2	F	p	η^2
1. Cand. Gender	.080	.777	.000	.040	.842	.000
2. Inc. Gender	3.171	.076	.007	3.070	.080	.007
3. Position	**6.381**	**.012**	**.014**	**4.440**	**.036**	**.010**
1x2	**4.412**	**.036**	**.010**	**3.964**	**.047**	**.009**
1x3	.073	.787	.000	1.482	.224	.003
2x3	.032	.857	.000	1.471	.226	.003
1x2x3	.707	.401	.002	1.354	.245	.003

Note. N = 474

Table 4

Frequencies for Participant Analyses

	Male	Female	Missing			
Participant gender	238	222	14			
	Yes	No	Missing			
Had supervisory experience	256	205	13			
	Yes	No	Missing			
Had hiring experience	162	92	220			
	$\leq$ $20,000	$20,000-$39,999	$40,000-$59,999	$60,000-$79,999	$80,000-$99,999	$100,000 or more
Annual income range	111	151	97	56	28	15
	< HS diploma	HS diploma	Some college	Bachelor's degree	Master's degree	Doctoral degree
Highest education level	3	59	158	188	41	8

Note. N = 474

Appendix A

From: Dr. Stan Aeschleman, Institutional Review Board Chairperson
Date: 5/13/2013
RE: Notice of IRB Approval by Expedited Review (under 45 CFR 46.110)
Study #: 13-0258
Study Title: Perceptions of Job Applicants
Submission Type: Initial
Expedited Category: (7) Research on Group Characteristics or Behavior, or Surveys, Interviews, etc.
Approval Date: 5/13/2013
Expiration Date of Approval: 5/12/2014
This submission has been approved by the Institutional Review Board for the period indicated. It has been determined that the risk involved in this research is no more than minimal.

Investigator's Responsibilities:
Federal regulations require that all research be reviewed at least annually. It is the Principal Investigator's responsibility to request renewal of approval before the expiration date. You may not continue any research activity beyond the expiration date without IRB approval. Any adverse event or unanticipated problem involving risks to subjects must be reported immediately to the IRB. You are required to obtain IRB approval for changes to any aspect of this study before they can be implemented except to eliminate apparent immediate hazards. Best wishes with your research!

Appendix B

From: Dr. Stan Aeschleman, Institutional Review Board Chairperson
Date: 10/02/2013
RE: Notice of IRB Approval by Expedited Review (under 45 CFR 46.110)
Study #: 13-0258
Study Title: Perceptions of Job Applicants
Submission Type: Modification
Expedited Category: (7) Research on Group Characteristics or Behavior, or Surveys, Interviews, etc.
Approval Date: 10/02/2013
Expiration Date of Approval: 5/12/2014

The Institutional Review Board (IRB) approved the modification for this study. The IRB found that the research procedures meet the expedited category cited above. IRB approval is limited to the activities described in the IRB approved materials, and extends to the performance of the described activities in the sites identified in the IRB application. In accordance with this approval, IRB findings and approval conditions for the conduct of this research are listed below.

Regulatory and other findings:
The IRB waived the requirement to obtain a signed consent form for some or all subjects because the research presents no more than minimal risk of harm to subjects and involves no procedures for which written consent is normally required outside of the research context.

Approval Conditions:
Appalachian State University Policies: All individuals engaged in research with human participants are responsible for compliance with the University policies and procedures, and IRB determinations.

Principal Investigator Responsibilities: The PI should review the IRB's list of PI responsibilities. The Principal Investigator (PI), or Faculty Advisor if the PI is a student, is ultimately responsible for ensuring the protection of research participants; conducting sound ethical research that complies with federal regulations, University policy and procedures; and maintaining study records.

Modifications and Addendums: IRB approval must be sought and obtained for any proposed modification or addendum (e.g., a change in procedure, personnel, study location, study instruments) to the IRB approved protocol, and informed consent form before changes may

be implemented, unless changes are necessary to eliminate apparent immediate hazards to participants. Changes to eliminate apparent immediate hazards must be reported promptly to the IRB.

Approval Expiration and Continuing Review: The PI is responsible for requesting continuing review in a timely manner and receiving continuing approval for the duration of the research with human participants. Lapses in approval should be avoided to protect the welfare of enrolled participants. If approval expires, all research activities with human participants must cease.

Prompt Reporting of Events: Unanticipated Problems involving risks to participants or others; serious or continuing noncompliance with IRB requirements and determinations; and suspension or termination of IRB approval by external entity, must be promptly reported to the IRB.

Closing a study: When research procedures with human subjects are completed, please complete the Request for Closure of IRB review form and send it to irb@appstate.edu.

Consent to Participate in Research

Information to Consider About this Research

Title of Research Study: Perceptions of Job Applicants
Principal Investigator: Sarah Light
Department: Psychology
Contact Information: lightse@appstate.edu
Faculty Advisor: Dr. Rose Mary Webb
This research is funded by: GSAS research grant

What is the purpose of this research?
The purpose of this study is to evaluate how preinterview hiring decisions are made.

Why am I being invited to take part in this research? Include:
To be eligible for this study, you must be at least 18 years of age or older.

What will I be asked to do?
You will be asked to review a job description and the resume of a job candidate for the position outlined in the job description. Once you have done so, you will be asked to answer questions about your evaluation of the job candidate. You will then be asked to complete a short demographics survey. This study should take approximately 20 minutes to complete.

What are possible harms or discomforts that I might experience during the research?
There is minimal risk attached to participating in this study, we expect that the risk is no more than you would experience in everyday life.

Are there any reasons you might take me out of the research?
 None

What are possible benefits of this research?
There are no direct benefits from this research.

Will I be paid for taking part in the research?
Compensation will be paid upon completion and review of this study through Amazon Mechanical Turk

How will you keep my private information confidential?
This study will be completed online and will be anonymous. All data will be stored electronically under the security of a password and kept indefinitely.

Whom can I contact if I have a question?
The people conducting this study will be available to answer any questions concerning this research, now or in the future. You may contact the Principal Investigator at (828) 262-2272. If you have questions about your rights as someone taking part in research, contact the Appalachian Institutional Review Board Administrator at 828-262-2130 (days), through

email at irb@appstate.edu or at Appalachian State University, Office of Research and
Sponsored Programs, IRB Administrator, Boone, NC 28608.

Do I have to participate?
Your participation in this research is completely voluntary. If you choose not to volunteer,
there is no penalty or consequence. If you decide to take part in the study you can still decide
at any time that you no longer want to participate. You will not lose any benefits or rights
you would normally have if you do not participate in the study.

I have decided I want to take part in this research. What should I do now?
If you have read this form, had the opportunity to ask questions about the research and
received satisfactory answers, and want to participate, then please continue to the study.

Appendix C

<u>**Job Descriptions**</u>

A. Sales Representative (Non-managerial Job Description)
General Purpose
Positively represent the company through serving customers and promoting and selling company products.

Main Job Tasks and Responsibilities
- Account for store cash funds when opening/closing the store
- Provide customer assistance, oversee cash register operation and sales transactions
- Adhere to store policies and procedures
  Maintain positive customer relations
  Education and Experience
- High school diploma required
- Previous experience in retail sales preferred

B. Retail Store Manager (Managerial Job Description)

General Purpose
Plan, direct, and coordinate the full general operations of a department.

Main Job Tasks and Responsibilities
- Accountable for all monies received, daily bank deposits, sales receipts and inventory
- Manage all employees, including but not limited to coaching/counseling, discipline, terminations, evaluations and wage adjustments
- Ensure proper training of employees in general operations, company policies and procedures
- Handle any work incidences including customer inquiries and complaints.

Education and Experience
- Experience with retail sales and administrative procedures required
  Bachelor's degree in Business Administration or equivalent preferred

Resume

Female Candidate Names: Amanda, Jennifer, Megan, Rachel
Male Candidate Names: Anthony, Jonathan, Matthew, Robert
Last names: Miller and Jones, randomly paired with the candidate first names

Education:
University of Wisconsin

Bachelor of Arts in Business Administration GPA: 3.4

Graduated: May 2010

Work Experience:
Barnes & Noble   Shift Leader   January 2012 – Present
Duties:
- Supervise the opening and closing procedures of the store
- Keep necessary store records efficiently and accurately
- Assist the store manager with shift scheduling
- Manage the cash flow from the registers which includes ensuring accurate transactions

Achievements:
Helped implement a loss prevention program resulting in a 12% reduction in inventory loss
Promotion to Shift Leader

Target   Sales Associate   December 2011-January 2012
Duties:
- Greeted and engaged customers when entering the store
- Assisted with marketing through the arrangement of visual displays
- Executed price changes, ring sales, and inventory control.
- Monitor the day-to-day operations of the store including stocking products and cleaning the store.

Achievements:
Named Sales Associate of the month for two consecutive months

Sears   Sales Clerk   May 2010-December 2011
Duties:
- Provided excellent customer care service.
- Performed register transactions with accuracy and efficiency
- Communicated current sales and promotions to customers
- Maintained the visual presentation of the store by keeping store front well-stocked and clean

Achievements:
Named Sales Clerk of the month

Incumbent Paragraph

Non-managerial
INCUMBENT NAME was the last person to hold the Sales Representative position. She/he was a valued employee who held the position for five years, during which time she/he received positive annual reviews for each of those years. At the time she/he left their position, her/his salary was $30,000 per year, which reflects both cost-of-living and performance-based raises that she/he had received.

Managerial
INCUMBENT NAME was the last person to hold the position. She/he was a valued employee who held the position for five years, during which time she/he received positive annual reviews for each of those years. At the time she/he left their position, her/his salary was $50,000 per year, which reflects both cost-of-living and performance-based raises that she/he had received.

Hirability and Salary Questions

Hirability
A five point Likert scale ranging from strongly disagree to strongly agree was used for the following four questions:
1. The candidate is a good fit for the position I read about.
2. The candidate is likely to be able to competently perform the required job duties.
3. I would be likely to offer the candidate an interview for the position.
4. I would be likely to make a recommendation to the organization to hire this candidate.

Starting Salary
Imagine that the candidate whose resume you reviewed has been offered the Sales Representative/Retail Store Manager position. Considering the information you were given about the candidate, what do you consider to be an appropriate starting salary?
[Non-managerial condition] Choose one: (options of $20,000 - $30,000 in $1000 increments)
[Managerial condition] Choose one: (options of $40,000 - $50,000 in $1000 increments)

Personality Measures

A five point rating scale ranging from strongly disagree to strongly agree was used for the following measures.

Competence
Learns quickly
Excels in what they do
Meets challenges
Needs things explained only once
Knows how to apply their knowledge
Comes up with good solutions
Gets confused easily
Questions their ability to do work properly
Doesn't see things through

Conscientiousness
is always prepared
pays attention to details
gets chores done right away
likes order
follows a schedule
is exacting in their work
does things according to plan
continues until everything is perfect
makes plans and sticks to them
loves order and regularity
likes to tidy up
accomplishes work on time
is careful to avoid making mistakes
likes to plan ahead
leaves their belongings around
makes a mess of things
often forgets to put things back in their proper place
shirks their duties
wastes their time
finds it difficult to get down to work
takes tasks too lightly
leaves work undone

Vita

Sarah Eloise Light was born in Cartersville, GA, to Gary and Teresa Light. She attended the University of Mississippi to study Psychology and Business Administration, and was awarded a Bachelor of Arts degree in May 2012. That fall, she entered Appalachian State University to pursue a Master of Arts degree in Industrial-Organizational Psychology and Human Resource Management. While attending Appalachian State University, Sarah participated in the Graduate Research Associate Mentoring program and presented research at two regional-level conferences: River Cities Industrial-Organizational Psychology Conference in Chattanooga, TN, and the Southeastern Psychological Conference in Nashville, TN. Sarah also served as the Vice President of the Society for Human Resource Management and served on a conference planning committee for her graduate program. Sarah completed her Master of Arts degree in May 2014 and began employment in the HR Department of a Boone, NC, organization.