

The Impact of Gender on the Review of the Curricula Vitae of Job Applicants and Tenure Candidates: A National Empirical Study

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The purpose of this study was to determine some of the factors that influence outside reviewers and search committee members when they are reviewing curricula vitae, particularly with respect to the gender of the name on the vitae. The participants in this study were 238 male and female academic psychologists who listed a university address in the 1997 Directory of the American Psychological Association. They were each sent one of four versions of a curriculum vitae (i.e., female job applicant, male job applicant, female tenure candidate, and male tenure candidate), along with a questionnaire and a self-addressed stamped envelope. All the curricula vitae actually came from a real-life scientist at two different stages in her career, but the names were changed to traditional male and female names. Although an exclusively between-groups design was used to avoid sparking gender-conscious responding, the results indicate that the participants were clearly able to distinguish between the qualifications of the job applicants versus the tenure candidates, as evidenced by suggesting higher starting salaries, increased likelihood of offering the tenure candidates a job, granting them tenure, and greater respect for their teaching, research, and service records. Both men and women were more likely to vote to hire a male job applicant than a female job applicant with an identical record. Similarly, both sexes reported that the male job applicant had done adequate teaching, research, and service experience compared to the female job applicant with an identical record. In contrast, when men and women examined the highly competitive curriculum vitae of the real-life scientist who had gotten early tenure, they were equally likely to tenure the male and female tenure candidates and there was no difference in their ratings of their teaching, research, and service

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experience. There was no significant main effect for the quality of the institution or professional rank on selectivity in hiring and tenuring decisions. The results of this study indicate a gender bias for both men and women in preference for male job applicants.

The proportion of women receiving advanced degrees varies enormously by field, but psychology is one of the sciences which graduates one of the highest percentages of women. Fifty-eight percent of PhDs awarded in psychology go to women (Alper, 1993). Unfortunately, academia in psychology is disproportionately a male endeavor. Female academicians often deny the existence of gender discrimination, despite evidence to the contrary. In one study, female faculty members reported little evidence of discrimination even though an examination of personnel practices at their institution indicated gender discrepancies in initial appointments, promotion, salary, and tenure (Liss, 1975). This is not surprising given that women are more likely to attribute their success to chance, physical attractiveness, or affirmative action policies working in their favor (Clance, 1985).

The existence of discriminatory barriers to advancement that face women in organizations, including academia, has been well established (Morrison & Von Glinow, 1990; Northcraft & Gutek, 1993). These barriers are likely to include isolation, lack of peer and administrative support, increased likelihood of having to balance child-care responsibilities, lower income than their male counterparts, and lower status in their institution. Although the total number of faculty has increased over the past 20 years, the proportion of women faculty has remained the same. Throughout the world, women leave their academic careers more often than their male colleagues (Rothblum, 1988), and this occurs even after women get tenure (Herbold, 1995). Even after adjustment for productivity factors, women are less likely to be associate or full professors than are men with the same number of years in the field (Sonnert & Holton, 1996; Tesch, Wood, Helwig, & Nettinger, 1995).

Women are more likely than their male counterparts to experience social isolation and lack of peer support in many institutions (Ibarra, 1993; Ohlott, Ruderman, & McCauley, 1994). One way to attenuate the effects of social isolation and lack of peer support is to seek out a mentor within the system. Research has shown that individuals with mentors receive more promotions, have higher incomes (Dreher & Ash, 1990), report more career satisfaction (Fagenson, 1989; Turban & Dougherty, 1994), and report more career mobility (Scandura, 1992). Unfortunately, women face greater barriers

ers to developing a mentoring relationship than their male counterparts, even though they derive equivalent benefits if they are able to acquire a mentor (Dreher & Ash, 1990; Fagenson, 1989; Turban & Dougherty, 1994). For example, women working in male-dominated organizations are more likely than their majority counterparts to be in cross-gender mentoring relationships (Ragins & McFarlin, 1990). Indeed, other researchers have pointed out that the few women who have reached high levels in the business world are an essential population to study because they can provide critical information for future generations of women coming up in the field (Ragins, Townsend, & Mattis, 1998).

Thus, given the social isolation and difficulty finding a mentor, logic would dictate that women would need to learn to advocate for themselves. Negotiation skills are recognized as important for academic success (Applegate & Williams, 1990). However, research has shown that there are numerous obstacles associated with self-advocacy for women in academic settings (Janoff-Bulman & Wade, 1996). Women who are self-promoting, assertive, or dominant in interactions are evaluated more negatively than women who behave in a stereotype-consistent fashion and more negatively than men who are equally self-promoting, assertive, or dominant (Costrich, Feinstein, Kidder, Maracek, & Pascale, 1975; Linehan & Siefert, 1983; Rudman, 1995). There is also empirical evidence that there are problems associated with a woman's self-advocacy in initial starting salaries. Even with promotions and merit equal to that of their male colleagues, female faculty and employees continue to experience the monetary impact of lower starting salaries (Hallock, 1994). One potential obstacle to evening out the discrepancy between the salaries for the genders is the saliency of gender itself. It is difficult to hide one's gender for even a short period of time, let alone do this while pursuing a tenure-track position or pursuing tenure itself. Research has shown that gender is more salient for women when the person deciding their livelihood is male (Eagly & Karau, 1991). Jannoff-Bulman and Wade (1996) argue that men risk nothing by asking for higher salary and benefits because appearing assertive and self-promoting is a typical male behavior. In contrast, there are risks associated with a woman's self-advocacy, including being less influential in group exercises (Ridgeway, 1982; Ridgeway & Diekema, 1992). Conversely, women who demonstrated tentative, less self-assured speech were more influential, even though they were actually perceived as less competent and knowledgeable (Carli, 1989, 1990; Wiley & Eskilson, 1985). These researchers' findings on group dynamics have implications for academic departments. Many crucial decisions are made in department meetings following group discussions, including determining raises, deciding tenure, admitting graduate students, making curriculum decisions, etc. Many women may be afraid to advocate for

themselves out of fear of getting punished in future decisions for speaking out in the past.

Little systematic data exist on the hiring processes in academic psychology departments (Sheehan, McDevitt, & Ross, 1998). Central to the processes of hiring and tenuring is the peer review of a job applicant's or candidate's work. Peer review has been criticized on many grounds, including poor interrater reliability, lack of objectivity, and nepotism (Cole, Cole, & Simon, 1981; Ernst, Resche, & Uher, 1992; Wenneras & Wold, 1997). Both women and men rate the quality of men's work higher than that of women when they are aware of the sex of the person to be evaluated, but not when the same person's gender is unknown (O'Leary & Wallston, 1982). In addition, female faculty members rate themselves lower than do their colleagues in teaching ability, number of publications, and professional reputation. In contrast, male faculty members view themselves more favorably than do their colleagues on these identical criteria (Widom and Burke, 1978). Female professors matched in rank and teaching experience receive lower teaching evaluations from students, particularly from male students, yet male faculty members are more likely than female faculty members to exhibit such behaviors as willingness to cancel class. Teaching style does not influence evaluations of male faculty to the same extent (Rothblum, 1988).

In the present study, we were interested in determining whether subjects would be influenced by the gender of the name on a curriculum vitae (CV) in determining the person's hireability and tenurability. To our knowledge this is the first study of its kind. The closest empirical data we could find was gathered almost 30 years ago. Fidell (1970) sent 155 department heads 10 descriptions of hypothetical candidates for faculty positions. The descriptions of the candidates were identical in all aspects except for gender, as implied by first names. Department heads were significantly more likely to indicate that they would hire female candidates at the assistant professor level and male candidates at the associate professor level. In the present study, we used CVs coming from a real scientist to promote believability. In addition, we sent the questionnaire to potential external reviewers at all faculty levels because department heads are certainly not the only ones to make hiring and tenure decisions. However, as in the Fidell study, our subjects spanned all disciplines within psychology. We also sought to limit the extent to which respondents would give politically correct answers by using a completely between-groups design (i.e., the subjects were sent only one vitae and were thus answering questions about only one gender), and by not asking the subjects their gender, although we knew their gender by discretely modifying the titles on the questionnaires for male versus female subjects.

METHOD

The participants in this experiment were 238 academicians in United States who listed a university address in the Directory of the American Psychological Association (1997). The participants were picked in block random fashion, by selecting the first female academician on every other odd-numbered page (e.g., pages 1, 5, 9, etc.) and the first male academician on the alternating odd numbered pages (e.g., pages 3, 7, 11, etc.) Each subject's gender was determined by their name, and for the 7 androgynous names we encountered we discretely telephoned their departments and asked if they were male or female. We decided randomly to select the participant's names, rather than selecting equal numbers of male and female academicians at each rank (e.g., full, associate, and assistant professors). We felt that our procedure would ensure that the demographics of our sample would match the national trends in department composition, search committees, and tenuring executive committees. After all, it is this composition of individuals who are largely making the hiring and tenuring decisions. Thus, it is likely that our participant pool matches national trends in academic institutions, which would be middle to upper middle class Whites. Also, we did not ask subjects whether they were department heads because we were afraid they would fear the loss of their anonymity. The procedure we used yielded 800 potential participants. Only 582 had listed verifiable or deliverable addresses. Thus, 582 questionnaires were sent out to potential participants. Participants were asked on the questionnaire if they recognized any of the names appearing on the vitae and we elected to eliminate the 14 participants who indicated that they did recognize names (i.e., only the candidate's name was fake and all other names appearing on the CV were real scientists working in the field) to eliminate undue influence through familiarity. We also eliminated 4 participants who did not indicate that their primary work setting was in an academic department, all of whom told us that they were at a university counseling center. The final participant pool consisted of 118 males and 120 females. In the final analysis 238 of those questionnaires were returned to us, for a response rate of 41%. This response rate is consistent with similar surveys of professionals (Wunder & Wynn, 1988; McNevin, Leichner, Harper, & McCrimmon, 1985).

In order to prevent participants from trying to give gender-conscious responses, they were NOT asked their gender or name. However, we knew the male participants because they were sent questionnaires with the heading CURRICULUM VITAE STUDY and female participants were sent questionnaires with the heading CV STUDY. In addition, the quality of the institution was also known by stamping the back of the questionnaire with one of five different coded stamps of vague meaning in relation to

the study (i.e., *Department of Psychology, Confidential*, etc.). The quality of the program each participant listed in their address was coded as either first, second, third, or fourth quartile (or uncodeable) according to the National Research Council (1995). Therefore, when respondents returned their questionnaires we already knew the participant's gender and the quality of their institution.

The questionnaires asked participants whether they would hire the applicant, tenure the applicant, and what starting salary they would offer the applicant. They were also asked if the applicant had adequate teaching, research, and service experience to be hired or tenured. Participants were also asked to rank order what factors influenced them most when reviewing the vitae (e.g., research topics studied, number of publications and poster presentations, quality of publication journals, extramural funding history, applicant's training prior to applying, teaching contributions, or service contributions.) The questionnaire also gathered demographic information. Participants were asked on the questionnaire if they recognized any of the names appearing on the vitae. They were asked where their primary work setting was. They were asked their rank, number of publications, the number of times they had served as an external reviewer and the number of times they served on search committees. Participants were asked how many vita they had reviewed in their lifetime, whether they worked in a PhD-granting institution, and what their primary work setting was. They were also asked to rank order the qualities they looked for in a colleague (e.g., ability to establish an independent research program, collaboration prospects with you or other faculty members, collegiality/personality factors, or fulfilling affirmative action requirements). They were asked whether they thought they could serve as an adequate mentor to the applicant/candidate and also whether they personally supported the continuation of the tenure system.

Two versions of the CVs of a real-life scientist at different stages in her career were used as the review materials in this study. The first vitae was the one she had actually used to get a tenure-track job right out of graduate school and the second vitae was the one she had actually used to get early tenure. The use of a real research record would promote believability via real journal titles that are recognizable and empirical findings that are believable. Also, the real institutional affiliations were left on the vitae to promote believability. The real-life scientist was both a clinical psychologist and biological psychologist and this expertise was reflected in the sample vitae. Four sample CVs were used to represent the following four conditions: (1) a female job applicant, (2) a male job applicant, (3) a female tenure candidate, and (4) a male tenure candidate. The vitae included standard information on the scientist's educational background, current institutional affiliation, teaching, research, and service. The female and

male job vitae at both levels were identical to each other, except for the use of a female or male name. In all cases, the female name used was “*Karen Miller*” and the male name used was “*Brian Miller*.” These names were selected because (1) they have been empirically demonstrated to be representative of each gender exclusively, without indication of either age or race (Kasof, 1993), and (2) to avoid confusing them with real psychologists, given there were no psychologists with those exact names appearing in the APA Membership Directory. In addition to changing the name of the applicant or candidate’s CV, two other minor changes were made to the real-life CV: (1) Four years were added to each date appearing on the job applicant’s CV, but not the tenure candidate’s CV, in order to avoid giving the impression that the job applicant had been unemployed for several years, or had been working somewhere else and was denied tenure at that institution for publishing nothing, and (2) memberships in scientific groups for women were removed from all of the CVs, regardless of the name appearing on the CV, to avoid inducing subjects to hire or tenure the person because of any political ideology they may appear to have. Otherwise, the CVs were identical to the one the real-life scientist had used as a job applicant and a tenure candidate. The numerical contents of the CV sections of the job applicant and the tenure candidate are presented in Table I. The questionnaires accompanying each of these CVs were printed on different colored paper so that we could tell which group each subject was in, without having to ask the subjects whether they had received a male or female vitae. Using different-colored paper and different headings

Table I. The Numerical Values of the Curricula Vitae Used as Stimuli in this Study

Criterion	Job Applicant	Tenure Candidate
Formal education	Bachelor of Arts, Masters in Science, PhD in Psychology	Bachelor of Arts, Masters in Science, PhD in Psychology
Postdoctoral experience	None	None
Honors and awards	10	14
Publications	9	19
Manuscripts in submission	None	2
Manuscripts in preparation	None	3
Professional presentations	9	37
Invited presentations	None	4
Manuscripts review experience	None	3 Journals, 2 textbooks
Courses taught	2	10
Department committees	None	9
University committees	None	16
Community committees	None	2
Professional memberships	3	10

allowed us to avoid directly asking questions about gender, facilitating the disguise of purpose of the study.

Procedure

This study was approved by the investigator's Institutional Review Board for the Protection of Human Subjects. The participants were sent the questionnaire, a self-addressed envelope, a brief cover letter, and one of four different CVs. The cover letter informed participants that the purpose of the study was to examine the factors that influence the review of CVs during hiring and tenuring decisions. Participants were also told that their responses to the questionnaires were completely anonymous and that they should be frank in their responses.

RESULTS

The demographic information was analyzed on the pooled data, regardless of which curriculum vitae they had been sent. There were several significant differences between the male and female subjects which is consistent with national trends in psychology departments. Some of these differences are highlighted in Table II.

The male participants held higher academic ranks than the female participants, so they were significantly more likely to have tenure than the females ($t = 4.7, p < .0001$). The males also had more publications than the females ($t = 5.3, p < .0001$). The males had significantly more experience serving as an external reviewer for tenure cases ($t = 3.75, p > .0001$), and more experience serving on a search committee to hire a new faculty

Table II. Demographic Data of the Subject Pool by Subject Gender

Information category	Female Subjects	Male Subjects	Significance Value
Percent tenured	61%	87%	$p < .001$
Percent working in a PhD program	55%	68%	$p < .05$
Percent experienced as external reviewer on tenure cases	27%	41%	$p < .0001$
Biopsychology/neuroscience	4%	5%	$p > .05$
Clinical psychology	15%	18%	$p > .05$
Developmental psychology	12%	8%	$p > .05$
Experimental psychology	3%	12%	$p > .05$
Social/personality psychology	16%	6%	$p > .05$

member ($t = 3.41, p < .001$). The males also reported examining more CVs in their lifetime than the females ($t = 2.62, p < .01$). The males were also more likely to work in a PhD-granting program than the females ($t = 2.37, p < .05$). Male and female participants did not differ in terms of their primary work setting ($t = -.24, p > .05$), which was predominantly in a university setting for both males and females. Male and female participants did not differ in terms of the quality of the program they were in, as indexed by the National Research Council's (1995) rating system ($t = .13, p > .05$). Also, male and female participants did not differ in the extent to which they reported being able to serve as an effective mentor to the person whose CV they were reviewing ($t = -.73, p > .05$). Participants were also asked if they supported the continuation of the tenure system, and the overwhelming majority of both male and female participants indicated that they did, with no significant gender difference in this trend ($t = -.75, p > .05$).

There were other similarities between the male and female participants. Males and females had a strikingly similar pattern of ranking the qualities that are most important to them in the selection of a new colleague. The participant's rankings of these qualities were analyzed using paired-samples t tests and the ranks presented below are significantly different from one another ($p < .001$). Both genders ranked "ability to establish an independent research program" as the most important quality. Both genders ranked "collegiality/personality factors" as the second most important quality, and "collaboration prospects with you or other faculty members" was ranked third. Interestingly, both genders ranked "fulfilling affirmative action requirements" last, with only five subjects in the entire pool ranking this quality as the most important.

Recall that participants were sent identical questionnaires regardless of whether they were sent the curriculum vitae of a hireable applicant or a tenure candidate. The data for the participant's responses regarding the hireability of all of the job applicants and tenure candidates are presented in Fig. 1 and their responses regarding their tenurability are presented in Fig. 2. These data were analyzed separately with respect to the questions being asked (e.g., hireability vs. tenurability), as well as the professional level of the target vitae (e.g., job applicants vs. tenure candidates). However, the data are combined in both Figs. 1 and 2 to illustrate clearly that the participants were in agreement about the general quality level of the CVs they received. Thus, even though we assumed that an individual with only nine publications would not ordinarily be given tenure, the participants were asked whether or not they would vote to give the job applicant *tenure*. This was done in an effort to make sure that our CV stimuli matched most academicians' perceptions of what is an appropriate record for hiring versus

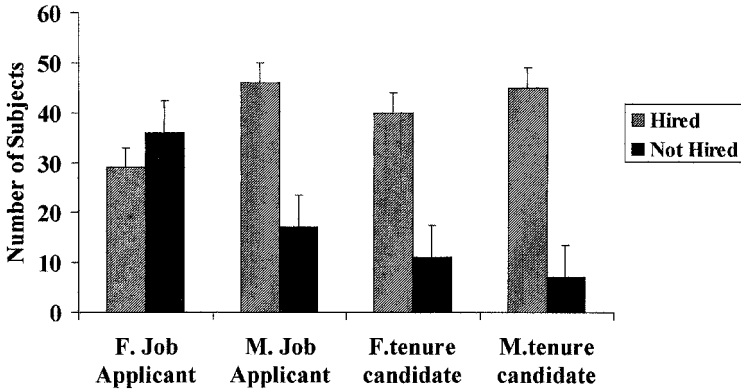


Fig. 1. Hireability of the job applicants and tenure candidates based on the quality of the curriculum vitae the participants were asked to evaluate.

tenuring. There were no significant main effects or interactions for the participants responding to the questions about tenuring an applicant who only had a hireable record, with the vast majority of the participants reporting that they would *not* vote to tenure them, and that they had not done enough teaching, research, and service.

As a further check on our hireable versus tenurable CV manipulation, we analyzed the data to determine if the participants selected a higher starting salary for the tenure candidates compared to the job applicants. An independent-samples *t* test indicated that all of the tenure candidates would have been offered a higher starting salary on average, compared to

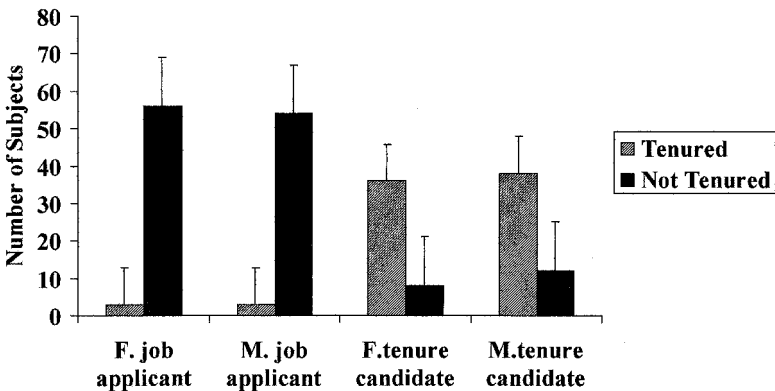


Fig. 2. Tenurability of the job applicants and tenure candidates based on the quality of the curriculum vitae the participants were asked to evaluate.

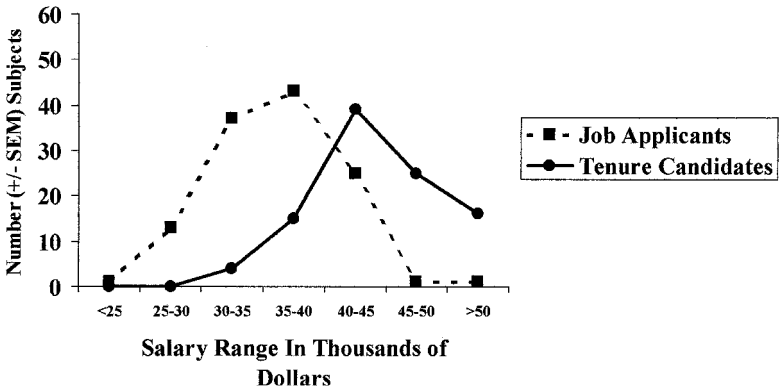


Fig. 3. The suggested starting salaries participants offered for the job applicants and tenure candidates.

the job applicants ($t = 11.69, p < .0001$). This was true regardless of whether or not the subjects voted to hire or tenure the applicant/candidate. These data are presented in Fig. 3. A 2×2 analysis of variance revealed no significant effects for the gender of the applicant, $F(1, 117) = .63, p > .05$, the gender of the participant, $F(1, 117) = .62, p > .05$, or the interaction between these two factors, $F(1, 117) = .17, p > .05$. Thus, there was no effect for gender on the selection of starting salaries.

We were also interested in whether or not participants were influenced by different factors when reviewing the job applicant versus tenure candidate CVs, and these results are shown in Fig. 4. Regardless of the CV they

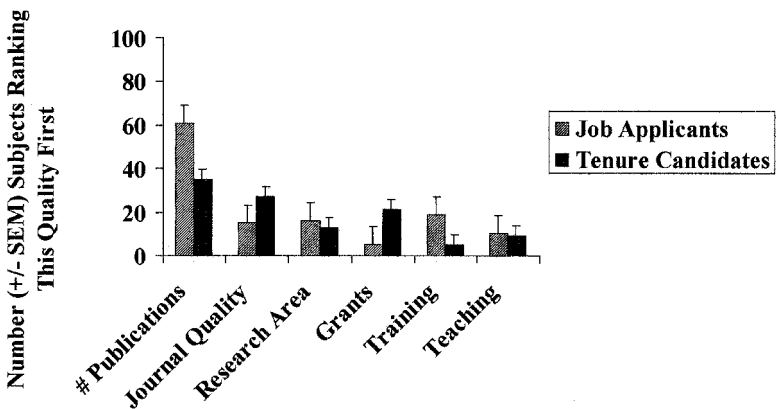


Fig. 4. The number of participants ranking each factor the most most influential in the review of the vitae of the job applicants versus the tenure candidates.

had reviewed, the factor that was ranked first most often was the “number of publications and poster presentations.” This was the only factor that was ranked first significantly more often than the other factors ($p < .001$). To determine if there were different influencing factors at the hiring versus tenuring level, paired-samples t tests were performed on each factor. Participants reviewing the tenurable candidate CVs were significantly more influenced by the history of extramural funding ($p < .0001$) compared to the subjects reviewing the job applicant CVs. In contrast, the participants reviewing the job applicant CVs were significantly more influenced by the number of publications ($p > .05$), and the subject’s training ($p > .001$), compared to the participants reviewing the tenure candidates’ records. There were no significant gender differences in the factors that influenced the participants when reviewing the CVs.

All of the remaining data were divided into groups of participants who had received hireable vita versus tenurable vita and these data sets were analyzed separately, using a 2×2 analysis of variance with a completely between-groups design. Participants were asked if they would vote to hire the person whose CV they were sent to review for a tenure track position in their department, and these results are shown in Fig. 5. There was a significant main effect for applicant gender, $F(1, 124) = 11.34, p < .001$, such that participants were more likely to hire the male applicants than the female applicants. There was not a significant main effect for the participant’s gender $F(1, 124) = 1.31, p > .05$, so both males and females demonstrated the same gender bias in favor of male applicants. In addition, the interaction between the participant’s gender and the hypothetical candidate was not significant, $F(1, 124) = 0.01, p > .05$. Participants were asked if they thought that the hypothetical job applicant had adequate research



Fig. 5. Hireability of the job applicants as a function of the participant’s gender.

experience to be offered a tenure track position. There was a significant main effect for applicant gender, $F(1, 126) = 8.15, p < .005$, with participants being more likely to report that the male applicant had adequate research experience. There was no main effect for participant gender, $F(1, 126) = .88, p > .05$, and the interaction between the participant's gender and the hypothetical candidate was not significant, $F = 2.13, p > .05$. Participants were also asked if the applicant had adequate teaching and, separately, service experience. The data analysis yielded similar patterns to the first two questions, with significant main effects for the applicant's gender on adequacy of teaching experience, $F(1, 123) = 10.53, p < .005$, and service experience, $F(1, 119) = 8.97, p < .005$. In either case there was no main effect for the gender of the participant [$F(1, 123) = .37, p > .05$, and $F(1, 119) = .05, p > .05$, for teaching and service, respectively] or the interaction between gender of the participant and gender of the applicant [$F(1, 123) = .62, p > .05$, and $F(1, 119) = .99, p > .05$, for teaching and service, respectively].

A different pattern of results was found for the review of the tenure candidate's CVs, which was considerably more competitive for tenurability than the job applicant's CV was for getting hired. With respect to voting to tenure the candidate, there were no main effects for participant gender, $F(1, 102) = 1.44, p > .05$, candidate gender, $F(1, 102) = .07, p > .05$, or the interaction between these two factors, $F(1, 102) = 3.23, p > .05$. When participants were asked if the candidate had significant research experience, again there were no main effects for participant gender, $F(1, 103) = 1.42, p > .05$, candidate gender, $F(1, 103) = .142, p > .05$, or the interaction between these two factors, $F(1, 103) = 1.42, p > .05$. These results are reported in Fig. 6. There were no main effects for the gender of the partici-

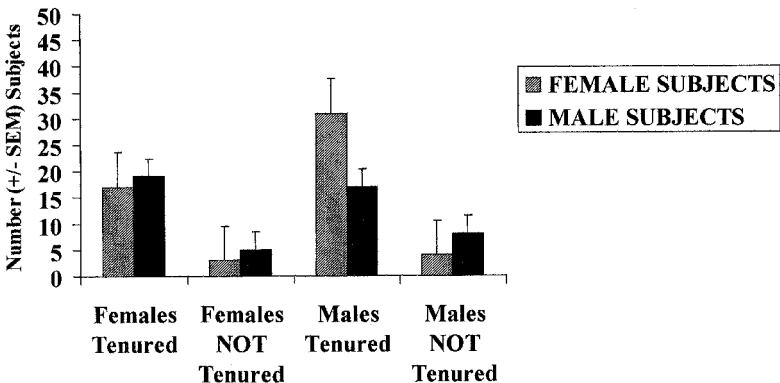


Fig. 6. Tenurability of the candidates by participant gender.

pant, candidate gender, or the interaction between these two factors with respect to their perception of the adequacy of the candidate's teaching experience [$F(1, 99) = .7, p > .05$; $F(1, 99) = 1.2, p > .05$; and $F(1, 99) = .7, p > .05$, respectively]. There were also no main effects for the gender of the participant, candidate gender, or the interaction between these two factors with respect to their perception of the adequacy of the candidate's service contributions [$F(1, 102) = .14, p > .05$; $F(1, 102) = 1.35, p > .05$; and $F(1, 102) = .23, p > .05$, respectively].

Given that the sample vitae belonged to a biopsychologist, we did look to see if participants who shared the applicant/candidate's subdiscipline within psychology were more or less likely to hire or tenure the applicant. We found that the participant's subdiscipline made no difference in terms of whether or not they were likely to hire the job applicant, $F(6, 120) = .57, p > .05$, and the same was true of subdiscipline impact on the review of the tenure candidates, $F(6, 89) = 1.19, p > .05$. We did look to see if professional rank had an influence over whether or not participants were more or less likely to vote to hire or tenure the applicant or candidate. A 2×2 analysis of variance failed to reveal significant differences in votes between professors of different ranks in terms of their voting to hire, $F(3, 228) = .203, p > .05$, or voting to tenure, $F(3, 209) = .66, p > .05$. The impact of program quality on likelihood to hire or tenure was also examined. Again, there was no effect for participant rank on decision to hire the applicant, $F(4, 229) = 1.1, p > .05$, or tenure the candidate, $F(4, 209) = 1.4, p > .05$.

DISCUSSION

To our knowledge, this is the first study to determine the impact of the gender of the job applicant or tenure candidate on potential search committee member's and outside reviewer's decisions to hire or tenure. In the present study, both male and female academicians were significantly more likely to hire a potential male colleague than an equally qualified potential female colleague. Furthermore, both male and female participants were more likely to positively evaluate the research, teaching, and service contributions of a male job applicant than a female job applicant with an identical record. These results are consistent with previous research that has shown that department heads were significantly more likely to indicate that they would hire female candidates at the assistant professor level and male candidates with identical records at the associate professor level (Fidell, 1970). These results are also consistent with the research on how both women and men evaluate their own work (Widom and Burke, 1978)

and the work of others (O'Leary & Wallston, 1982). Indeed others have argued that although most men and women sincerely hold egalitarian beliefs, those beliefs alone do not guarantee impartial evaluation of others (Valian, 1998). The findings from this study support that contention and underscore the notion that women are as capable of gender bias as men are. Furthermore, these findings are particularly disturbing coming from psychologists, who unlike scientists in many other disciplines, would have been exposed to research on gender bias through course work, colleagues, and colloquia.

The present findings did not indicate that potential female tenure candidates are evaluated more negatively than potential male tenure candidates, although participants were four times as likely to write cautionary comments in the margins of their questionnaire if they had reviewed a female tenure candidate than if they had reviewed the male tenure candidate. These cautionary comments include such comments as, "We would have to see her job talk," "It is impossible to make such a judgement without teaching evaluations," "I would need to see evidence that she had gotten these grants and publications on her own." Such cautionary comments on the male tenure candidate's vitae were quite rare.

There are two possible explanations for the differential findings between hireability and tenurability. The first possible explanation is that academicians are somehow immune to gender bias when making tenure decisions, but not hiring decisions. It is intuitively appealing that it might be more difficult to make a decision that would cause someone to lose their job they already have than to turn someone down for a job they have not yet landed. However, the task in the present study with respect to tenuring was more similar to the task of an external reviewer, rather than an executive committee member voting on tenuring a colleague. Similarly, the methodology for the hiring conditions was akin to the task of search committee members prior to face-to-face interviews of the job applicants. Both tasks required the participants to make a decision about someone they had never met, and the participants were able to make equivalent decisions about the male and female tenure candidates. Therefore, we think it was unlikely that discomfort about making a decision about a colleague's job retention played a role in these findings.

We offer a more plausible explanation for the differential results between the tenurable and hireable findings. We believe the results are a direct reflection of the quality of the tenurable CV. To promote plausibility, we chose the CV of a real-life scientist at two different stages in her career for both the male and female CVs. The CVs were identical to the one the real-life scientist had used to get hired right out of graduate school and, 5 years later, tenured. We understood that the hireable vitae could *not* get

an applicant hired at many universities around the country, given the lack of postdoctoral experience, as well as limited research, teaching, and service experience. Our belief is supported by research that shows that significant predictors for success in pursuing an academic job in psychology are, in fact, publications and research grants awarded (Ng, 1997). Unfortunately, we believe that we underestimated the quality of the real-life tenurable CV. The real-life scientist had gotten early tenure at her institution, and had extensive research experience (frequent publications and extramural grants), teaching experience (i.e., including developing multiple courses at both the undergraduate and graduate levels), and service experience (membership in multiple committees at the departmental, university, state, and national level). The vast majority of the participants said they would tenure the tenurable candidate regardless of the gender of the candidate. In other words, our tenurable candidate appears to be infinitely more tenurable than our hireable candidate was hireable. The participants may have been responding to a kind of ceiling effect for the quality of the tenurable candidates. Taken together, these findings indicate that a superb record may indeed function as a buffer for gender bias when making promotional decisions.

We asked the participants what salary they would offer the applicant or tenure candidate. Although we realized that these decisions are usually out of the hands of individual faculty members, we knew that such individuals might have input into evaluating their colleagues during merit raise exercises or might be called upon by administrative bodies to suggest starting salaries if they are serving on search committees. We also hoped that their salary selections would match national starting levels, which would further legitimize the extent to which the study was a reflection of real-life hiring, tenuring, and pay scale decisions. The results indicated that there were no main effects for participant gender or applicant gender for salary selection. This finding could be a function of the presentation of the choices participants were given to endorse. There was a \$5,000 gap within each choice. Perhaps this gap was too large to detect subtle gender biases in salary decisions that might be demonstrable if we had used narrower gaps of \$1,000 or if we had used a free-form response for this question. Another possible explanation could be that participants were aware that their hiring and tenuring decisions are completely unlinked to their own professional lives. In contrast, universities sometimes have to make salary adjustments to level the playing field for gender-inequity reasons, for academicians who have similar records but dissimilar salary rates, etc. Perhaps the understanding that the salaries that participants select for job applicants or tenure candidates can be tied to their own in the future caused the participants to make fair decisions about salary offers. After all, the salaries that the

entire participant pool selected were consistent with national trends in academic salaries (Black & Holden, 1998). Clearly further investigation of this important issue is of paramount concern to all academic disciplines, including psychology.

With respect to participants' beliefs about whether they would serve as an effective mentor to the job applicants or the tenure candidates, we found no overall difference between the genders. Although there was a nonsignificant trend for the female candidates to rate themselves as a poor potential mentor to the applicant/candidate more often and the male candidates to rate themselves as an excellent mentor, this is likely a function of the distribution of the genders in the ranks. In other words, as expected, the full professors were more likely to rate themselves as an excellent, good, or average mentor than the associate or assistant professors. This makes intuitive sense and other authors have pointed out that experienced mentors at high ranks may have a great ability to help their proteges' careers than novice mentors at lower ranks (Ragins, 1999). The mentorship picture is likely to be different from the mentee's point of view. Ragins and Cotton (1991) found that women are more likely than men to report restricted access to mentors. Although both male and female academicians may see themselves as competent mentors, the proportionately fewer female academicians taken together with the perceived barriers to getting a mentor may more closely reflect the state of mentorship in academia. Indeed, the proportion of women psychology mentors has increased, but not as rapidly as the proportion of women among doctoral recipients (Willis and Diebold, 1997).

It was interesting to note that there were no gender differences in terms of the qualities men and women were looking for in a colleague. In contrast to the myth that female academicians put all of their effort into fulfilling affirmative action goals, both men and women ranked this quality last. This may be a function of the desirability of the other options. Both genders were looking for the ability to establish an independent research program, as well as collegiality and personality factors. Research has shown that affirmative action is seen as relatively positive by both males and females (Parker, Baltes, & Christiansen, 1997), but that females are significantly more likely than males to think that the standard affirmative action practices are a good idea (Ozawa, Crosby & Crosby, 1996). However, the failure to see a lot of emphasis on fulfilling affirmative action goals in the present study is consistent with our findings that neither men or women seemed willing to give the female job applicant an equal chance. It may be that people agree with the concept in principle, but have difficulty applying the concept to hiring decisions.

The present findings indicate that at the fledgling stages of the career

of a young professional, gender is seen as an indicator of success. Although it is unclear at what point the burgeoning record begins to speak for itself regardless of gender, it does seem clear that there comes a time when a scientist's record becomes strong enough to outweigh the gender bias. Two main lines of future inquiry seem mandatory. First, we need to understand better the specific factors that tip the scales in terms of ensuring that a record is evaluated on its own merit rather than in light of the scientist's gender. And second, academic departments need to be educated about this gender bias and as a discipline we need to develop selection systems that attenuate the gender bias by evaluating candidates on easily identifiable objective criteria. Obviously, this last step is a pretty tall order. Research has shown that both the job applicant's demeanor and sex-role stereotyping can influence hiring decisions (Gallois, Callan, & Palmer, 1993), such that candidates who used an assertive communication style were clearly favored by interviewers over aggressive and nonassertive candidates. Appearance and gender have been shown to impact hiring recommendations, particularly for positions that require high achievement, shrewdness, and leadership (Zebrowitz, Tenenbaum, & Goldstein, 1991). For example, males and mature-faced applicants are perceived as shrewder and more dominant than female and baby-faced applicants, and they are consequently favored for jobs that require such qualities. Furthermore, physical appearance in the absence of resume information has been linked to stereotype-guided processing in hiring recommendations (Branscombe & Smith, 1990). Thus, when there is no written documentation to go on, appearance is even more important. It is unlikely that gender-blind hiring and tenuring can ever be a reality, particularly when reviewers eventually end up considering the applicant's demeanor at the job talk and during interview. However, more research needs to be done on the factors that can promote fairness in the hiring process, and faculty need to be educated about the existence of this bias.

REFERENCES

- Alper, J. (1993). The pipeline is leaking women all the way along. *Science*, 260, 409-411.
- American Psychological Association. (1997). *Directory of the American Psychological Association*. Washington, DC: Author.
- Applegate, W. B., & Williams, M. E. (1990). Career development in academic medicine. *American Journal of Medicine*, 88, 263-267.
- Black, M. M., & Holden, E. W. (1998). The impact of gender on productivity and satisfaction among medical school psychologists. *Journal of Clinical Psychology in Medical Settings*, 5, 117-131.
- Branscombe, N. R., & Smith, E. R. (1990). Gender and racial stereotypes in impression formation and social decision-making processes. *Sex Roles*, 22, 627-647.

- Carli, L. L. (1989). Gender differences in interaction style and influence. *Journal of Personality and Social Psychology*, *56*, 565–576.
- Carli, L. L. (1990). Gender, language, and influence. *Journal of Personality and Social Psychology*, *59*, 941–951.
- Clance, P. R. (1985). *The Imposter Phenomenon: When Success Makes You Feel Like A Fake*. New York: Bantam Books.
- Cole, S., Cole, J. R. & Simon, G. A. (1981). Chance and consensus in peer review. *Science*, *214*, 881–886.
- Costrich, N., Feinstein, J., Kidder, L., Maracek, J., & Pascale, L. (1975). When stereotypes hurt: Three studies of penalties for sex-role reversals. *Journal of Experimental Social Psychology*, *11*, 520–530.
- Dreher, G. F., & Ash, R. A. (1990). A comparative study of mentoring among men and women in managerial, professional, and technical positions. *Journal of Applied Psychology*, *75*, 539–546.
- Eagly, A. H., & Karau, S. J. (1991). Gender and the emergence of leaders: A meta-analysis. *Journal of Personality and Social Psychology*, *60*, 685–710.
- Ernst, E., Resch, K. L., & Uher, E. M. (1992). Reviewer Bias. *Annals of Internal Medicine*, *116*, 958.
- Fagenson, E. A. (1989). The mentor advantage: Perceived career/job experiences of proteges vs. non-proteges. *Journal of Organizational Behavior*, *10*, 309–320.
- Fidell, L. S. (1970). Empirical verification of sex discrimination in hiring practices in psychology. *American Psychologist*, *25*, 1094–1098.
- Gallois, C., Callan, V. J., & Palmer, J. A. M. (1993). The influence of applicant communication style and interviewer characteristics on hiring decisions. *Journal of Applied Social Psychology*, *22*, 1041–1060.
- Hallock, P. (1994). Promoting diversity on campus: Thought to action. *Thought and Action*, *X*, 65–78.
- Herbold, H. (1995). Women who leave: Why women professors are cutting their ties to academia. *The Monthly Forum On Women In Higher Education*, 25–29.
- Ibarra, H. (1993). Personal networks of women and minorities in management: A conceptual framework. *Academy of Management Review*, *18*, 56–87.
- Janoff-Bulman, R., & Wade, M. B. (1996). The dilemma of self-advocacy for women: Another case of blaming the victim? *Journal of Social and Clinical Psychology*, *15*(2), 143–152.
- Kasof, J. (1993). Sex bias in the name of stimulus persons. *Psychological Bulletin*, *113*, 140–163.
- Linehan, M. M., & Seifert, R. F. (1983). Sex and contextual differences in the appropriateness of assertive behavior. *Psychology of Women Quarterly*, *8*, 79–88.
- Liss, L. (1975). Why academic women do not revolt: Implications for affirmative action. *Sex Roles*, *1*, 209–230.
- McNevin, S.H., Leichner, P., Harper, D., & McCrimmon, E. (1985). Sex role ideology among health care professionals. *Psychiatric Journal of the University of Ottawa*, *10*, 21–23.
- Morrison, A. M., & Von Glinow, M. A. (1990). Women and minorities in management. *American Psychologist*, *45*, 200–208.
- National Research Council (1995). *Research-Doctorate Programs in the United States: Continuity and Change*, pp. 371–377.
- Ng, C. F. (1997). Recruitment practices and job search for academic positions in psychology. *Canadian Psychology*, *38*, 25–42.
- Northcraft, G. B., & Gutek, B. A. (1993). Point-counterpoint: Discrimination against women—Going, going, gone or going but never gone? In E. A. Fagenson (Ed.), *Women In Management: Trends, issues and challenges in managerial diversity* (pp. 219–245). Newbury Park, CA: Sage.
- Ohlott, P. J., Ruderman, M. N., & McCauley, C. D. (1994). Gender differences in managers' developmental job experiences. *Academy of Management Journal*, *37*, 46–67.
- O'Leary, V. E., & Wallston, B. S. (1982). Women, gender, and social psychology. *Review of Personality and Social Psychology*, *2*, 9–43.
- Ozawa, K., Crosby, M., & Crosby, F. (1996). Individuals and resistance to affirmative action:

- A comparison of Japanese and American samples. *Journal of Applied Social Psychology*, 26, 1138–1152.
- Parker, C. P., Baltes, B. B., & Christiansen, N. D. (1997). Support for affirmative action, justice perceptions, and work attitudes: A study of gender and racial-ethnic group differences. *Journal of Applied Psychology*, 82, 376–389.
- Ragins, B. R. (1999). Where do we go from here, and how do we get there? Methodological issues in conducting research on diversity and mentoring relationships. In A. J., Murrell, F. J. Crosby & R. J. Ely (Eds). *Mentoring Dilemmas: Developmental Relationships Within Multicultural Organizations* (pp. 227–246). Mahwah, NJ, Lawrence Erlbaum.
- Ragins, B. R., & Cotton, J. L. (1991). Easier said than done: Gender differences in perceived barriers to gaining a mentor. *Academy of Management Journal*, 34, 939–951.
- Ragins, B. R. & McFarlin, D. (1990). Perception of mentor roles in cross-gender mentoring relationships. *Journal of Vocational Behavior*, 37, 321–339.
- Ragins, B. R., Townsend, B. & Mattis, M. (1998). Gender gap in the executive suite: CEOs and female executives report on breaking the glass ceiling. *Academy of Management Executive*, 12, 28–42.
- Ridgeway, C. L. (1982). Status in groups: The importance of motivation. *American Sociological Review*, 47, 175–188.
- Ridgeway, C. L., & Diekema, D. (1992). In C. L. Ridgeway (Ed.), *Gender, interaction, and inequity* (pp. 157–180). New York: Springer-Verlag.
- Rothblum, E. D. (1988). Leaving the ivory tower: Factors contributing to women's voluntary resignation from academia. *Frontiers*, 2, 14–17.
- Rudman, L. A. (1995). *To be or not to be (self-promoting): Motivational influences on gender stereotyping*. Poster presented at the 7th Annual Meeting of the American Psychological Society, New York.
- Scandura, T. A. (1992). Mentorship and career mobility: An empirical investigation. *Journal of Organizational Behavior*, 13, 169–174.
- Sheehan, E. P., McDevitt, T. M., & Ross, H. C. (1998). Looking for a job as a psychology professor? Factors affecting applicant success. *Teaching of Psychology*, 25, 8–11.
- Sonnert, G., & Holton, G. (1996). Career patterns of women and men in the sciences. *American Scientist*, 84, 63.
- Tesch, B. J., Wood, H. M., Helwig, A. L., & Nattinger, A. B. (1995). Promotion of women physicians in academic medicine: Glass ceiling or sticky floor? *Journal of the American Medical Association*, 273(13), 1022–1025.
- Turban, D. B., & Dougherty, T. W. (1994). Role of protégé personality in receipt of mentoring and career success. *Academy of Management Journal*, 37, 688–702.
- Valian, V. (1998). *Why so slow? The advancement of women*. Cambridge, MA: MIT Press.
- Wenneras, C., & Wold, A. (1997). Nepotism and sexism in peer-review. *Nature*, 387, 341–343.
- Widom, C. S., & Burke, B. W. (1978). Performance, attitudes, and professional socialization of women in academia. *Sex Roles*, 4, 549–562.
- Wiley, M. G., & Eskilson, A. (1985). Speech style, gender stereotypes, and corporate success: What if women talk more like men? *Sex Roles*, 12, 993–1006.
- Willis, F. N., & Diebold, C. T. (1997). Producing mentors in psychology. *Teaching of Psychology*, 24, 15–21.
- Wunder, G. C., & Wynn, G. W. (1988). The effects of address personalization on mailed questionnaires response rate, time, and quality. *Journal of the Market Research Society*, 30, 95–101.
- Zebrowitz, L. A., Tenenbaum, D. R., & Goldstein, L. H. (1991). The impact of job applicant's facial maturity, gender, and academic achievement on hiring recommendations. *Journal of Applied Social Psychology*, 21, 525–548.