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Author(s): Gary N. Powell and D. Anthony Butterfield

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# INVESTIGATING THE “GLASS CEILING” PHENOMENON: AN EMPIRICAL STUDY OF ACTUAL PROMOTIONS TO TOP MANAGEMENT

GARY N. POWELL  
University of Connecticut  
D. ANTHONY BUTTERFIELD  
University of Massachusetts

**Although a “glass ceiling” is said to keep women from the top management levels of organizations, no research has investigated actual decisions about promotions to such positions. This study examined promotion decisions for U.S. federal government Senior Executive Service positions in a cabinet-level department. Contrary to hypotheses, the job-irrelevant variable of gender worked to women’s advantage, both directly and indirectly, through job-relevant variables. However, an applicant’s employment in the hiring department had the greatest effect on promotion decisions.**

Women have made considerable progress in entering the managerial ranks of U.S. enterprises in recent years, but not at the highest levels. The proportion of women managers increased from 16 percent in 1970 to a 1992 level of 42 percent (U.S. Department of Labor, 1992). However, the proportion of women who hold top management positions increased only slightly during the last decade, from less than 3 percent in 1979 to less than 5 percent in 1991 (Fisher, 1992; Korn/Ferry International, 1990). All but one of the chief executive officers of the *Business Week Top 1,000* corporations for 1992 were men (Segal, 1992). The phenomenon that keeps women from reaching the top levels of organizations has been labeled the “glass ceiling” (Morrison, White, Van Velsor, and the Center for Creative Leadership, 1987).

Morrison and colleagues described the glass ceiling as a “transparent barrier that [keeps] women from rising above a certain level in corporations” (1987: 13). They considered it a barrier for women as a group, barring individuals’ advancement simply because they are women rather than because they lack the ability to handle jobs at higher levels. These authors placed the glass ceiling at just below the general manager level. The U.S. Department of

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Labor defined the glass ceiling as “those artificial barriers based on attitudinal or organizational bias that prevent qualified individuals from advancing upward in their organization” (1991: 1). Although the glass ceiling could exist at different levels in different organizations or industries, the term is typically used to suggest a barrier to entry into top-level management positions. No field studies to date have investigated whether actual promotion decisions for top management positions reflect the glass ceiling phenomenon. The present study was designed to fill this void.

Research on women in management began in earnest in the mid-1970s (e.g., Rosen & Jerdee, 1974; Schein, 1973), about the time that women were becoming managers in significant numbers. Although a great volume of research has accumulated since then (cf. Freedman & Phillips, 1988; Powell, 1993), research that focuses on women’s movement into top management positions has been scant. Much of what has been published on why women “still don’t hit the top” (Fierman, 1990) has been based on anecdotal data from individual managers (e.g., Freeman, 1990) or on assessments of influences on women’s career and advancement experiences in general (e.g., Larwood & Gattiker, 1987; Solomon, Bishop, & Bresser, 1986; Stewart & Gudykunst, 1982). Virtually all the empirical research on women’s advancement up the corporate ladder has focused on lower or middle management positions (e.g., Eberts & Stone, 1985; Rosen & Jerdee, 1974; Shenhav, 1992; Stroh, Brett, & Reilly, 1992). To date, there has been more speculation than hard evidence offered as to what happens when women are considered for top management positions.

Moreover, there has been very little research of any type, not just gender-based, on how actual promotion decisions are made for top management positions. Stumpf and London (1981b) identified criteria that are commonly used when decisions are made about management promotions. They specified both *job-irrelevant criteria*, such as gender, race, and appearance, and *job-relevant criteria*, such as related work experience, being a current member of the organization offering the position, past performance, education, and seniority. However, they observed that “the relative importance of these factors in a particular promotion decision or across decisions has received little attention” (1981b: 543). This observation still holds true. Most studies of decisions about management positions have focused on selection rather than promotion decisions (e.g., Barr & Hitt, 1986; Hitt & Barr, 1989) or have examined criteria for decisions made about hypothetical rather than real applicants (e.g., London & Stumpf, 1983; Stumpf & London, 1981a). For example, Hitt and Barr (1989) found that both job-irrelevant and job-relevant variables influenced ratings of hypothetical applicants for middle and top management positions.

## HYPOTHESES AND RESEARCH QUESTION

Despite the paucity of research on promotions to top management positions, with or without gender as a variable, authors have proposed various

reasons for the lack of women in such positions. Two general explanations have been offered. One is that the job-irrelevant variable of applicant gender has a *direct* effect on decisions about promotions to top management positions, to women's disadvantage. The other is that the job-irrelevant variable of applicant gender has an *indirect* effect on promotion decisions for top management positions through its relationship with job-relevant variables, also to women's disadvantage. These two explanations do not compete with each other; applicant gender may have both direct and indirect effects on promotion decisions. In addition, the gender of decision makers may have a moderating effect on the relationship between applicant gender and promotion decisions for top management positions.

### **Direct Effect of Applicant Gender**

Numerous theories have proposed the existence of outright discrimination against women in organizations because of their gender. For example, theories that focus on patriarchy suggest that men's desire to keep women in a dependent status contributes to limitations on the latter's employment opportunities, including access to top management positions (Strober, 1984). Kanter's (1977) theory of sex discrimination focused on the power of numbers and the desire for social certainty. Promotion decisions for top management positions involve subjective appraisals as to whether a given candidate will fit in with incumbent top managers. Individuals who are dissimilar to the incumbents in a particular type of job or to those making promotion decisions (or to both), as female candidates for a top management position in a male-dominated organization would be, are at a disadvantage compared to individuals who are similar to incumbents and decision makers (male candidates). Further, rational bias theory suggests that gender discrimination results from intentional bias in decisions by managers, acting in their own self-interest, who see their organizations as not interested in eliminating gender discrimination or alleviating its effects (Larwood, Szwajkowski, & Rose, 1988). Such managers may find a personal advantage in gender discrimination even if they themselves do not care for it and consider the women being discriminated against just as capable as the men being favored. Although such theories disagree on the underlying rationale, they agree that women are discriminated against when decisions are made for promotions to top management positions.

However, gender discrimination need not be intentional. Motowidlo (1986) suggested that unconscious biases resulting from fear of selecting an unacceptable candidate, personal attraction to candidates similar to oneself, and holding a stereotype of the ideal candidate for a position may distort decision makers' judgments and lead job-irrelevant variables such as gender to influence their selection decisions. Nieva and Gutek (1980) documented the existence of pro-male bias in laboratory studies involving evaluation of applicants for managerial positions.

*Hypothesis 1: The job-irrelevant variable of applicant gender directly influences promotion decisions for top management positions in such a way that women receive less favorable decision outcomes than men.*

### **Indirect Effect of Applicant Gender**

The second explanation for the low proportion of women in top management positions is that applicant gender has an indirect effect on promotion decisions through its relationship with job-relevant variables. Job-relevant criteria, such as experience, education, seniority, past performance, and being a current member of the promoting organization, are to be expected to influence promotion decision outcomes (Stumpf & London, 1981b). Women could fare poorly when assessed according to such criteria for various reasons. Gender discrimination may have directly influenced past personnel decisions about them, making it more difficult for them than for men to obtain the necessary preparation for top management positions. Also, there could be gender differences in the distribution of job market skills like education and work experience. Human capital theory (Becker, 1971) suggests that workers make rational choices regarding investment in their own education and careers. If women have built up less human capital over time than men, then their career progression, including ascendancy to top management positions, would be more restricted (Stroh et al., 1992). Finally, gender discrimination may have influenced prior evaluations of employees' human capital, with women given less credit for their education, work experience, and so on than men. Thus, women who come up short on job-relevant criteria for top management promotions, whatever the reason may be, are likely to be at a disadvantage, even if they are not directly discriminated against when such decisions are made.

*Hypothesis 2: The job-irrelevant variable of applicant gender indirectly influences promotion decisions for top management positions in such a way that women are rated less favorably than men on job-relevant variables that influence decision outcomes.*

### **The Moderating Effect of Decision Makers' Gender**

As noted earlier, Kanter (1977) concluded that the desire for social certainty leads decision makers to prefer to work with individuals like themselves. The "similar-to-me" effect (Rand & Wexley, 1975) may be based on perceived similarity (e.g., Dalessio & Imada, 1984; Pulakos & Wexley, 1983), on actual similarity, or on both. Pfeffer (1983) argued that the demographic composition of organizations influences many behavior-based events, including managerial successions. Research has found that similarity in demographic characteristics influences outcomes such as superiors' ratings of subordinates' performance (Tsui & O'Reilly, 1989), turnover within work teams (Jackson, Brett, Sessa, Cooper, Julin, & Peyronnin, 1991; O'Reilly, Caldwell, & Barnett, 1989), and employees' organizational attachment

(Tsui, Egan, & O'Reilly, 1992). However, no empirical research has investigated whether the gender of decision makers interacts with applicant gender to influence promotions to top management positions. Thus, we also explored the question, Does the gender of decision makers moderate the relationship between applicant gender and promotion decisions for top management positions?

## METHODS

### Population

Empirical research on promotions to top management is scarce in part because organizations are reluctant to reveal their practices in such a sensitive area. However, as a result of the Civil Service Reform Act of 1978, the United States government has a systematic and accessible procedure for making top management promotions. Thus, the federal government seemed a good place to begin field research on actual promotion decisions to top management.

A large, cabinet-level federal department was approached as a possible research site in 1989. We received permission to obtain all available data on decisions for career appointments to the Senior Executive Service (SES), which consists of all top management positions except those reserved for political appointees. Approximately 1 percent of all positions that government employees can attain without political sponsorship are SES positions. Promotions to the SES are made systematically and are based on the same types of information across positions. Records of the decision process are kept for at least two years. Data were obtained for decisions made from January 1987 to February 1992.

In 1990, the federal department studied had 150 career SES positions, of which 29 (19%) were filled by women. Federal employees who are not in SES positions have federal civil service grade levels of up to 15. Grades 13 to 15 are considered the pipeline to the Senior Executive Service. Approximately 4,700 department employees held grade 13, 14, or 15 positions. The proportion of women was 25 percent in grade 15, 26 percent in grade 14, and 27 percent in grade 13 positions in the department. For the federal government as a whole, the proportion of women was 10 percent in SES positions, 11 percent in grade 15, 15 percent in grade 14, and 20 percent in grade 13 positions.

### Procedure for Filling SES Positions

When a Senior Executive Service position becomes open, a position announcement is circulated that specifies the criteria by which applicants will be judged. Six of the criteria are the same for every SES position—an example is “ability to integrate internal and external program/policy issues”—and the other criteria are position-specific. Interested individuals submit formal applications that provide background and career history data. Applicant's current supervisors are asked to rate how well the applicants

would meet the specified criteria for the applied-for position if they were selected. The applicants' most recent performance appraisals in their current positions are also obtained if available. The personnel office in which the vacancy is located then screens out applicants who are considered obviously unqualified because they did not meet minimum eligibility criteria for the position.

The person who makes the final decision on a given position, known as the selecting official, is typically the future manager of the person to be selected for the position. The selecting official asks a panel of one to three senior individuals who are familiar with the demands of the position to review the credentials of the remaining applicants. The review panel rates each applicant on each of the specified criteria as high (3), medium (2), or low (1) in qualifications and arrives at an overall rating of the applicant as highly qualified or qualified. The panel also decides which applicants to refer to the selecting official for final consideration. In most cases, applicants rated as highly qualified are referred and those rated as qualified are not referred. Once the selecting official has a list of referred applicants from the review panel, he or she selects the applicant who will receive the job.

Thus, once applicants pass the initial screen and are evaluated by the review panel, up to two decisions are made about them: (1) a review panel decides whether to refer them to the selecting official and (2) the selecting official decides whether to choose them for the position.

## **Data**

From January 1987 to February 1992, 32 open SES positions were filled within the department. Review panels regarded 438 applicants as qualified or highly qualified for the positions they applied for. We obtained review panel and application data for these 438 applicants. The study was restricted to applicants who were considered to be legitimate contenders for the positions, and thus we did not obtain data for applications whom personnel offices had screened out as not meeting minimum eligibility criteria.

Eighty-eight percent of the 438 applicants were men. Their mean full-time work experience was 22 years, and their mean age was 47 years. For 67 percent of the applicants, the highest degree obtained was a graduate degree; it was a bachelor's degree for 30 percent and less than a bachelor's degree for 3 percent. Virtually all the applicants had some federal work experience at some time; those who had no federal experience were not included in the data analysis. The highest grade was 13 or less for 4 percent, grade 14 for 16 percent, grade 15 for 65 percent, and SES for 15 percent of the applicants. The mean time at the highest grade attained was six years. Forty-three percent were currently employed by the hiring department.

Review panels referred 258 of the 438 applicants (59%) to selecting officials. Of the 258 referred applicants, 32 (12%) were selected to fill the 32 open positions.

Sixty-two percent of the applicants were evaluated by an all-male review panel, 36 percent by a mixed-gender panel, and 2 percent by an all-

female panel. For men serving on review panels, the mean age was 49 years, and for women it was 48 years. The selecting officials were men with a mean age of 50 years for 84 percent of the referred applicants and women with a mean age of 60 years for the other 16 percent of the referred applicants.

## Measures

Three variables served as measures of outcomes of promotion decisions. A review panel's evaluation of an applicant's qualifications for a position was measured by the average of its ratings of the applicant on the specified criteria for the position. Whether the applicant was referred for the position by the review panel (0 = no, 1 = yes) and, if referred, selected for the position by the selecting official (0 = no, 1 = yes) were the other two outcome measures.

The job-irrelevant variable of applicant gender (effects coding: -1 = men, 1 = women) and six job-relevant variables were included in analyses as potential predictors of the outcome measures. The job-relevant variables were whether the applicant for a given job was currently employed in the hiring department (0 = no, 1 = yes), the highest grade the applicant had held in the federal government (1 = grade 13 or less, 2 = grade 14, 3 = grade 15, 4 = SES), the number of years the individual had been at the highest grade, the number of years of full-time work experience, the highest degree obtained (1 = less than bachelor's degree, 2 = bachelor's degree, 3 = graduate degree), and the summary performance appraisal rating (five-point scale, with 5 the highest rating) on the applicant's most recent performance appraisal.<sup>1</sup> Stumpf and London (1981b) described all these job-relevant variables as criteria commonly used by organizations for management promotions.

The gender compositions of the review panels (-1 = all men, 1 = mixed gender)<sup>2</sup> and the gender of the selecting official (-1 = man, 1 = woman) were also included as measures.

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<sup>1</sup> Although performance appraisal information was missing for 28 percent of the applicants, we included it as a potential predictor because Stumpf and London (1981b) specifically described past performance as a criterion for management promotions. Other job-relevant and job-irrelevant variables were considered as potential predictors but not included in the final analyses for various reasons. The current supervisors' average ratings of applicants on the specified criteria for the applied-for positions were not included because such ratings were missing for 59 percent of the applicants. The review panels' overall ratings of applicants as highly qualified or qualified were not included because they were equivalent to the referral decision outcomes for 84 percent of the applicants. (The other 16 percent were rated as qualified but were referred; no applicants were rated as highly qualified but not referred.) Applicant age was not included because it was highly correlated with years of full-time work experience ( $r = .75$ ). Finally, we were unable to include the racial-ethnic groups of applicants as a predictor because it was not in the applicant files as a matter of law. Applicant gender was included on the application forms "for statistical use."

<sup>2</sup> The all-woman panels were omitted since they reviewed only 2 percent of applicants.



## Analysis

Two outcome measures were used in analyses for all 438 applicants: the review panel's evaluation of each applicant on the specified criteria for the position and the review panel's decision about whether to refer the applicant to the selecting official. We used ordinary-least-squares regression analysis to determine the influence of the predictor variables on panel evaluations for the applicants. Logistic regression analysis (Norusis, 1990) was used to assess the influence of the same predictor variables on the dichotomous referral decisions. We calculated pseudo  $R^2$ 's for the logistic regression model following the formula recommended by Aldrich and Nelson (1984).

The third outcome measure, the selecting officials' hiring decisions, was applicable only for the 258 applicants who were referred by the review panels. We used logistic regression analysis to assess the influence of predictor variables on the dichotomous hiring decisions for these applicants.

To determine the unique contribution of each predictor variable to each outcome measure, we conducted a usefulness analysis (Darlington, 1968), calculating  $R^2$  or pseudo  $R^2$  for the full model and then for a reduced model that did not contain the variable of interest. The difference in variance accounted for between the full and reduced models is the unique variance (usefulness) the removed variable accounts for (Pedhazur, 1982).

Moderated regression analyses were performed to examine the moderating influence of the gender of decision makers on the relationship between applicant gender and outcomes. We first regressed panel evaluations and referral decisions on applicant gender, the six job-relevant predictor measures, and the gender composition of a review panel. Next, we computed a model including the interaction of applicant's gender and the gender composition of the review panel in addition to all other variables and examined whether the interaction term made a unique contribution to the regression equation. The same moderated regression procedure was used for selection decisions, except that the gender of the selecting official was used instead of the gender composition of the review panel.

## RESULTS

Table 1 reports correlations, means, and standard deviations for the seven predictor and three outcome variables for all 438 applicants studied. The highest correlation among the predictor variables was .27. Several correlations were significant only because of the large number of applicants.

Table 2 presents gender differences in job-relevant and outcome measures for the complete group of 438 applicants and the subgroup of 258 referred applicants. When the applicant group was considered as a whole, women received significantly higher performance appraisal ratings and panel evaluations and were significantly more likely to be referred than men. They were also significantly more likely to be employed in the hiring department and had significantly less work experience. When only referred applicants were considered, there were no significant gender differences in

TABLE 1  
Descriptive Statistics and Correlations<sup>a</sup>

Variables	Mean	s.d.	1	2	3	4	5	6	7	8	9
1. Gender	-0.77	0.64									
2. Employed in hiring department	0.43	0.50	.12								
3. Highest grade	2.90	0.69	.04	-.13							
4. Years at highest grade	6.07	4.42	-.06	.18	-.08						
5. Years of full-time work experience	22.04	7.31	-.10	.10	.16	.27					
6. Highest degree	2.64	0.53	-.02	.00	.04	-.04	-.12				
7. Performance appraisal rating	4.27	0.67	.20	-.17	-.08	-.05	-.17	-.08			
8. Panel evaluation	2.64	0.42	.15	.37	.14	.21	-.05	-.01	.07		
9. Referral decision	0.59	0.49	.19	.40	.22	.16	.04	.03	.09	.51	
10. Selection decision	0.07	0.26	.14	.25	.04	-.07	-.08	.02	.10	.19	.23

<sup>a</sup> Correlations with an absolute value of .09 or higher are significant at the .05 level.

**TABLE 2**  
**Gender Differences<sup>a</sup>**

Variables	All Applicants			Referred Applicants			
	Men	Women	t	Men	Women	t	df
Percentage employed in hiring department	40.67	58.82	-2.47*	57.67	67.44	-1.19	256
Highest grade	2.89	2.98	-0.82	3.01	3.02	-0.09	250
Years at highest grade	6.17	5.35	1.23	6.77	5.79	1.26	250
Years of full-time work experience	22.31	19.98	2.15*	22.64	20.53	1.74	255
Highest degree	2.65	2.62	0.35	2.68	2.57	1.22	251
Performance appraisal rating	4.22	4.62	-3.67***	4.24	4.63	-3.29***	204
Panel evaluation	2.62	2.81	-3.02**	2.80	2.90	-1.61	225
Percentage referred	55.56	84.31	-3.99***				
N	387	51		10.70	20.93	-1.86	256
				215	43		

<sup>a</sup> We performed t-tests for all applicants (N = 438) and for referred applicants (N = 258). Degrees of freedom, equal to N - 2, vary because of missing data.

\* p < .05

\*\* p < .01

\*\*\* p < .001

predictor or outcome measures except on the performance appraisal rating variable, where women scored significantly higher than men.

Panel evaluations for all applicants were regressed on the six job-relevant measures and applicant gender using ordinary-least-squares regression (Table 3). Applicant gender had a significant effect on panel evaluations. However, the direction of the effect, favoring women, was opposite to that predicted by Hypothesis 1. Thus, findings did not support Hypothesis 1 for the panel evaluation outcome.

Four of the six job-relevant measures—employment in the hiring department, highest grade, years at highest grade, and years of full-time work experience (a negative effect)—significantly influenced panel evaluations. As Table 2 reports, women differed from men on two of the four significant job-relevant predictors of panel evaluations, employment in the hiring department and work experience. However, the indirect effect of gender on panel evaluations through these predictors favored women rather than men, contrary to Hypothesis 2. Women scored significantly higher than men on employment in the hiring department, which was positively related to panel evaluations, and significantly lower than men in work experience, which was negatively related to panel evaluations. Thus, Hypothesis 2 was not supported for the panel evaluation outcome. In addition, although the effect of applicant gender was significant, the unique variance it accounted for (1%) was small relative to that of employment in the hiring department (8%).

Table 4 presents the results of the logistic regression analysis for the referral decision for all applicants. The logistic regression procedure in SPSS, Version 4.1 (Norusis, 1990) was employed. Applicant gender had a significant effect on referral decisions. However, as for panel evaluations, the direction of the effect, favoring women, was opposite to that predicted in Hypothesis 1. Thus, findings did not support Hypothesis 1 for the referral decision outcome.

**TABLE 3**  
**Results of Regression Analysis for Panel Evaluations for All Applicants<sup>a</sup>**

Variables	$\beta$	Unique $R^2$
Gender	.13*	.01*
Employed in hiring department	.30***	.08***
Highest grade	.15*	.02*
Years at highest grade	.22***	.04***
Years of full-time work experience	-.17**	.02**
Highest degree	.02	.00
Performance appraisal rating	.09	.01
$F_{7,265}$	7.66***	
$R^2$	.17	
Adjusted $R^2$	.15	

<sup>a</sup> N is 273 because of missing data.

\*  $p < .05$

\*\*  $p < .01$

\*\*\*  $p < .001$

**TABLE 4**  
**Results of Regression Analysis for Referral Decisions for All Applicants<sup>a</sup>**

Variables	<i>b</i>	s.e.	Unique Pseudo <i>R</i> <sup>2</sup>
Gender	.80**	0.30	.02**
Employed in hiring department	2.54***	0.37	.16***
Highest grade	1.25***	0.32	.04***
Years at highest grade	.12**	0.04	.03**
Years of full-time work experience	-.08**	0.02	.03**
Highest degree	.52	0.32	.01
Performance appraisal rating	.44	0.25	.01
Constant	-5.96**	2.00	
Chi-square	94.01***		
<i>df</i>	7		
Pseudo <i>R</i> <sup>2</sup>	.26		

<sup>a</sup> *N* is 273 because of missing data.

\* *p* < .05

\*\* *p* < .01

\*\*\* *p* < .001

Four of the six job-relevant measures—employment in the hiring department, highest grade, years at highest grade, and years of full-time work experience (a negative effect)—significantly influenced referral decisions. These effects were similar to those obtained for predicting panel evaluations. Thus, results did not support Hypothesis 2 for the referral decision outcome. In addition, as for panel evaluations, the unique variance accounted for by applicant gender (2%) was small relative to what employment in the hiring department accounted for (16%).

Table 5 presents the results of the logistic regression analysis for the selection decision, conducted only for applicants whom the review panels referred to the selecting officials. Since the review panels transmitted evaluations of applicants as well as referral decisions, panel evaluations were included as a predictor variable.

Applicant gender in itself did not have a significant effect on selection decisions; thus, Hypothesis 1 was not supported. Three of the six job-relevant measures—employment in the hiring department, years at highest grade (a negative effect), and performance appraisal rating—significantly influenced selection decisions. As Table 2 shows, the first two variables did not favor referred applicants of either gender, whereas women received significantly higher performance appraisal ratings than men. Since the indirect effect of gender on selection decisions through performance appraisal ratings favored women rather than men, findings did not support Hypothesis 2.

Moderated regression analyses revealed that the interaction between applicant gender and the gender composition of the review panels did not make a unique contribution to the regression model for either panel evaluations ( $\Delta R^2 = .00$ ) or referral decisions ( $\Delta R^2 = .01$ ); the relationship between applicant gender and each outcome was not significantly different for all-

**TABLE 5**  
**Results of Regression Analysis for Selection Decisions for Referred Applicants<sup>a</sup>**

Variables	<i>b</i>	s.e.	Unique Pseudo <i>R</i> <sup>2</sup>
Gender	.06	0.26	.00
Employed in hiring department	1.81*	0.72	.04*
Highest grade	.51	0.56	.00
Years at highest grade	-.13*	0.06	.02*
Years of full-time work experience	.00	0.04	.00
Highest degree	.01	0.44	.00
Performance appraisal rating	.80*	0.40	.02*
Panel evaluation	.58	1.30	.00
Constant	-9.04*	4.77	
Chi-square	19.10*		
<i>df</i>	8		
Pseudo <i>R</i> <sup>2</sup>	.10		

<sup>a</sup> *N* is 175 because of missing data.

\* *p* < .05

male and mixed-gender review panels. Also, the interaction between applicant gender and the gender of the selecting official did not make a unique contribution to the regression model for selection decisions for referred applicants ( $\Delta R^2 = .01$ ); the relationship between applicant gender and selection decisions was not significantly different for male and female selecting officials. These results suggested that the gender of decision makers did not moderate the relationship between applicant gender and promotion decision outcomes. Complete results of these analyses are available from the senior author.

## DISCUSSION

The hypotheses of the study, which propose that applicant gender will directly and indirectly influence promotion decisions for top management positions to the disadvantage of women, were rejected. Although the effect sizes were small, applicant gender directly influenced the two earlier promotion decision outcomes, panel evaluations and referral decisions, to women's advantage and did not directly influence final selection decisions. Applicant gender indirectly influenced panel evaluations and referral decisions through its relationship with two job-relevant variables, employment in the hiring department and work experience, with each indirect effect favoring women. Applicant gender indirectly influenced selection decisions through its relationship with one job-relevant variable, the performance appraisal rating, with the indirect effect again favoring women. The gender of decision makers did not moderate the relationship between applicant gender and promotion decision outcomes.

## Direct and Indirect Effects of Applicant Gender

Why were all the significant direct and indirect effects of gender in this study favorable to women? To address this question, we need to consider the unique nature of the organization studied. The very fact that the federal government is unlike most organizations may have accounted for the absence of decision making that favored men. The federal government places a high degree of emphasis on procedural fairness in making promotion decisions for SES positions. First, it requires that all open positions be made known through a public announcement. Second, it requires that all promotion decisions be made using the same basic procedure. Third, it requires that records be kept of the entire decision-making process. By providing structure to the decision-making process and enabling identification of decisions that are not properly made, these requirements make decision makers accountable for how their promotion decisions are made. Stumpf and London (1981b) suggested increasing accountability and creating standardized procedures for making decisions as interventions to remedy biased decision-making processes.

In addition, the federal government is particularly concerned with issues regarding equal employment opportunity. This concern is evident in the Department of Labor's (1991) "glass ceiling initiative" for private corporations as well as in established federal policies and practices. It may lead to women in the federal government benefiting more from promotion decisions than men rather than being victimized by the glass ceiling phenomenon. First, women may receive more favorable performance evaluations and referral decisions than men simply because of their gender. Second, they may be in a better position to be promoted to top management jobs than women in other types of organizations because they have been treated favorably, or at least not been discriminated against, in past decisions regarding open positions at lower levels.

Finally, women may have benefited from a special commitment to equal opportunity in the particular federal department examined. The department's proportions of women in the pipeline grades of 13 to 15 (25–27%) were above average for the federal government, with less of a drop-off in the proportion of women from grade 13 to grade 15, suggesting that the department may have been particularly committed to hiring and promoting women throughout its ranks. However, the proportion of women applicants in the study (12 percent overall, 16 percent for department employees) was smaller than the proportion of women in pipeline grades in the department, further suggesting that the women who applied may have been stronger applicants than the men who applied. This unevenness could account for women's higher performance appraisal ratings, which indirectly led to their receiving more favorable selection decisions. Perhaps only women who were extremely high performers applied for open SES positions; perceptions of a glass ceiling, whether warranted or not, may have inhibited women with lesser performance records from applying.

These results suggest that when decision making is open and a systematic procedure is used, decisions that foster the glass ceiling phenomenon may be averted. When procedures for promotion decisions are standardized and criteria for decisions are well established, qualified women may fare at least as well as qualified men. When procedures are not standardized, or when criteria for promotion decisions are unspecified or vague, there may be more occasion for gender-related biases favoring men to affect the outcomes of the promotion process. To what extent are the decision-making conditions found in this study present in the private sector and other public agencies? Additional research in differing organizational contexts is necessary to answer this question.

No matter how systematic decision making is, however, perceptions of gender-related biases in decision making are likely to influence which individuals actually apply for top management positions. In particular, women who believe that the glass ceiling phenomenon will operate to their disadvantage may be less likely to apply for open positions than equally qualified men. Such behavior on their part may lead to the average female applicant for top management positions having stronger credentials and faring better in promotion decisions than the average male applicant, as appeared to be the case in the present study. However, a smaller number of female applicants may also lead to a smaller number of promotions of women to top management positions. Thus, to truly avert the glass ceiling phenomenon, organizations need to address perceptions about how promotion decisions are made as well as the reality.

### **Effects of Job-Relevant Variables**

The study confirmed the importance of several of the job-relevant variables previously described as common criteria for management promotions. It also enabled a rough assessment of the relative importance of the variables examined, which had been lacking (Stumpf & London, 1981b). Being a current member of the organization filling the open position explained the greatest amount of unique variance in each decision outcome; it was also the only variable that had a significant, positive effect on all three outcomes. Years at the highest grade had a positive effect on the early judgments assessed (panel evaluations and referral decisions), but a negative effect on the final selection decision. Two other job-relevant variables, highest grade achieved and work experience, had a significant effect on the early judgments regarding applicants (positive for highest grade and negative for work experience) but not on the selection decision. Performance appraisal ratings had a significant effect only on the selection decision. Education was the only variable that did not have a significant effect on any outcome measure, perhaps because there was little variance in education in this group; two-thirds of the applicants had advanced degrees and only 3 percent lacked four-year college degrees.

Being a current member of the hiring organization could have had a particularly strong effect on promotion decisions for several reasons. Ac-



ording to Kanter's (1977) reasoning, decision makers may see insiders as more similar to themselves than outsiders, and thus more preferable as candidates. A similar-to-me effect has been found in previous research on ratings of others (e.g., Rand & Wexley, 1975; Tsui & O'Reilly, 1989). Perhaps such an effect extends to promotion decisions regarding top management positions and is based on qualities of applicants besides their gender. However, there may also be legitimate reasons for choosing an applicant who has first-hand experience with an organization over applicants who are otherwise equally qualified. Familiarity with an organization may make the applicant better prepared to assume the responsibilities of the position.

Indeed, familiarity with the selecting official may also help. Selecting officials may know applicants from their own department better than outsiders and feel more confident choosing applicants whose work is well known to them and to the department. Also, selecting officials occasionally interview applicants, and impressions gathered in these interviews could affect their decisions. Further research that assesses the influence of decision makers' first-hand knowledge of candidates is necessary to reveal more about how such decisions are made. Such research is also necessary to determine whether the strong insider effect is present in other types of organizations and, if so, why it is so pronounced.

The significant, negative effects of job-relevant variables on outcomes call for special consideration. First, years of work experience negatively influenced review panels' evaluations of applicants and referral decisions. Review panels may have been impressed by accomplishments and performance achieved within a limited time frame. Applicants at the threshold of a top management position with less experience may have been seen as "fast-trackers" who offered greater potential for success precisely because they had reached that threshold sooner than the average applicant. At the other extreme, applicants with many years of experience who had still not been promoted to the top rank may have been viewed as over the hill and not deserving of further advancement. The women studied tended to have fewer years of work experience than the men, so they may have benefited from such perceptions.<sup>3</sup>

A similar explanation may apply for selection decisions, which were not affected by years of work experience but were affected negatively by the number of years an applicant had spent at the highest grade achieved. Selecting officials may have wanted new blood and therefore favored candi-

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<sup>3</sup> Post hoc analysis revealed that the relationship between work experience and panel evaluations was curvilinear, with the highest evaluations received by applicants with ten years of experience and lower evaluations received as years of experience increased beyond ten years. Because 95 percent of the applicants had more than ten years of work experience, the relationship between work experience and panel evaluations was essentially negative for the range of experience studied. There was no evidence of a curvilinear relationship between years of work experience and referral decisions or between years at the highest grade achieved and selection decisions.

dates who had not been at their highest grade for very long. Applicants with many years at their highest grade may have been seen as essentially "plateaued" (Veiga, 1981) and not destined for advancement to the top rank. Additional research is necessary to determine the conditions under which time-related criteria, such as years at a highest grade and years of work experience, have positive or negative effects on top management promotions.

## CONCLUSIONS

The present study was subject to the difficulties inherent in conducting field research on management promotions (London & Stumpf, 1983). In particular, we had a limited study group of female applicants and aggregated data across promotion decisions with different task requirements, contexts, and decision makers. However, various definitions of the glass ceiling phenomenon suggest that factors that are common to different types of organizational contexts keep women from reaching the top levels of organizations. The only way to determine whether common factors affect the advancement of women is to aggregate data on promotion decisions from different contexts.

What would it take for the glass ceiling phenomenon to disappear? This study suggests some tentative answers. Organizations may be able to avert it by revising procedures for making promotion decisions in ways that increase the accountability of decision makers and impose uniformity on the promotion process, and by making these procedures well known to all potential applicants. In addition, organizations that pursue a strong promote-from-within policy and fill positions immediately below the top level with highly qualified women and men who progressed to that level without delay may eventually find their glass ceilings shattered.

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**Gary N. Powell** is a professor of management in the School of Business Administration at the University of Connecticut. He received his Ph.D. degree in organizational behavior from the University of Massachusetts, Amherst. His research interests include the study of gender-related issues in organizations and the study of recruitment processes.

**D. Anthony Butterfield** is a professor in and the chairperson of the management department in the School of Management at the University of Massachusetts, Amherst. He received his Ph.D. degree in organizational psychology from the University of Michigan. His research interests center on issues of leadership and gender. Currently he is president-elect of the Eastern Academy of Management.