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The Profession

Faculty Rank Among Political Scientists and Reports on the Academic Environment: The Differential Impact of Gender on Observed Patterns

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Within academia, the hiring, tenure, and promotion of women faculty members are an important part of the overall question of equality for women in the work place (Conover and Palley 1992; Stetson et al. 1990). As of fall 1991, in the 29 "top-ranked" (by *U.S. News and World Report*) political science departments, just 15.5% of the faculty were women.¹

In the spring of 1990, a survey of department chairs in the Midwest on the status of women faculty and graduate students in political science doctoral departments was undertaken. Directed by Ardith Maney, the study was sponsored by the Midwest Women's Caucus for Political Science, the Midwest Committee on the Status of Women, and the Executive Board of the Midwest Political Science Association. Maney gathered data through a questionnaire mailed to the 28 departments offering doctoral degrees in the Midwest region.² Twenty-five departments completed questionnaires.

The study found that 54% of all male political scientists in these departments were full professors, while women held only 7% of all full-professor positions. Women held only 17% of the 453 full-time tenured or tenure-earning positions in these departments, including 14% of the associate slots, 34% of the assistant professorships, and none of the instructor positions.

A different kind of survey, sent to individual faculty members, was conducted by the Midwest Women's Caucus in 1993.³ The target of this study was all women who had received a Ph.D. degree between

1965 and 1991 from the 28 Midwest universities previously surveyed (sample information is presented in Appendix A). The women were matched with a random sample of men drawn proportionately from the same years of graduation. A somewhat smaller number of men than women were included in the sample. Both men and women were sent a questionnaire designed to solicit information about current and past employment, together with a few demographic and attitudinal questions.

The survey's goal was to determine whether there are measurable differences between men and women in career patterns, in achievements, and in perceptions of the job environment. This is the first survey of its kind, for previous surveys have targeted departmental chairs. This study asks faculty members themselves to evaluate their own experiences.

The Sample

After an initial mailing and a follow-up request to participate in this survey, 411 graduates returned valid questionnaires—including 248 women and 163 men. The sex of ten of the respondents was unknown, and thus, was not included in the analysis. Eight graduates indicated that they had received their Ph.D. prior to 1965; these too were excluded from the analysis.

In all, data from 400 graduates serve as the basis for this report, 244 women and 156 men. The sample was drawn so that male and female respondents would be

equally distributed in terms of the year in which they had received their Ph.D. The year of graduation is highly correlated with the age of the respondent. The distributions within the sample for year graduated and age are presented in Tables 1a and 1b.

Current Job Status

Ninety-four percent of all respondents were employed at the time of the survey, and 76% were faculty members at a university or college. Twenty-five percent of faculty respondents were assistant professors; 36% were associate professors; and 31% were full professors. Five individuals were lecturers or instructors. The respondents also included four department chairs and four deans. Other positions included assistant research professor, research associate, associate director or director, visiting professor, and regents professor.

The men and women were equally likely to be employed (94% of both male and female respondents were currently employed), but the male respondents were more likely to be faculty members. Eighty-two percent of currently employed male respondents were faculty members compared to 73% of (currently employed) women ($\chi^2 = 3.93$, $p = .05$). Significantly, among the cohort that received their Ph.D.'s in the period between 1965 and 1969, 100% of men, but only 71% of women are currently faculty members at a university or college (see Table 2). For the 1970–74 graduation cohort, 86% of

TABLE 1A
Year Graduated by Sex

Sex	Year Graduated					
	1965–69	1970–74	1975–79	1980–84	1985–89	1990–92
Female	8%	19%	18%	21%	23%	11%
Male	10%	20%	21%	22%	19%	8%

TABLE 1B
Age of Respondents by Sex

Sex	Age				
	Under 35	35 to 44	45 to 54	55 to 64	65+
Female	10%	40%	38%	11%	2%
Male	8%	36%	44%	12%	1%

men and 65% of women are in faculty positions.

An interesting pattern emerges among the graduation cohorts between 1965 and 1984. The percentage of women now in faculty positions is relatively constant for each cohort, standing at between 64% and 71%. For men, however, the percentage currently employed in faculty positions gradually declines for each cohort between 1965 and 1984. Both of these patterns change for the 1985 to 1992 graduation cohorts: over 80% of both sexes are currently in faculty positions.⁴ Thus, among recent graduates (since 1980), men and women are equally likely to be current faculty members. For graduates from earlier periods (before 1980), men are significantly more likely to be faculty members now than are women.

For those in faculty positions now, there are significant differences between men and women in whether they had held a previous position. Men in the 1965 to 1969

graduation cohort were much more likely than women to have held another position before their current one (57% for men compared with 25% for women). In the 1970 through 1979 graduation cohorts, men and women were equally likely to have held a previous position. By the 1980 to 1984 graduation cohort, male faculty members were again more likely to have held a previous position than female faculty members (71% for men compared with 65% for women). Thus, two trends emerge from these data. First, that faculty men tend to be more mobile within the profession than faculty women, and second, that more recent graduation cohorts are on the whole more mobile in terms of having held more than one position than are the older graduation cohorts.

Among those respondents to the survey who had held more than one position since receiving the Ph.D. and who were previously employed as a faculty member at a university or college, the majority

(58 women and 56 men) said that they had left their previous position because they had moved on to a better position. Only a small number were denied tenure (8 women and 7 men) or believed they would have been denied tenure had they stayed (9 women and 3 men) in their previous position. Thus, females more frequently—three times as frequently—reported that they believed that they would have been denied tenure had they stayed.

Many more women than men (24 women compared with 4 men) said that their spouse's job required a move (some also mentioned that the job was in an undesirable location); and over twice as many female respondents compared with male respondents (18 women and 8 men) indicated that hostility among faculty members and/or superiors was a reason for leaving their previous job. Six women and three men specifically mentioned harassment. If we add the figures for hostility and harassment together, we see that more than two times as many women as men are citing hostility and harassment as reasons for having left a position. Thus, hostility from other faculty members and harassment, although problems for both men and women, are much more frequently mentioned by women than men as affecting employment decisions.

On other dimensions, however, our data indicate few differences between currently employed faculty men and women. For example, men and women faculty similarly tend to hold tenure-track positions, and men and women faculty similarly tend to work full time. Ninety-six percent of the faculty men and 94% of the faculty women were in tenure-track positions, and 96% of both male and female faculty had full-time appointments. We also found that among those faculty members who had been previously employed, men and women were **unlikely** to have been in a part-time position in their previous job, and both were **likely** to have been in a tenure-track position. Ninety-six percent of previously employed faculty women and 91% of previously employed faculty men

TABLE 2
Percent of Total Respondents in Each Graduation Cohort Currently in a Faculty Position at a University or College by Sex

Year of Graduation with a Doctorate in Political Science	Sex		Total Number of Graduates for Each Period (in the sample)
	Female	Male	
1965–1969	71%	100%	34
1970–1974	65	86	78
1975–1979	67	76	78
1980–1984	65	69	87
1985–1989	84	86	85
1990–1992	92	100	38

TABLE 3
Level of Faculty Positions by Sex

Sex	Assistant Professor	Associate Professor	Full Professor	Other	Number of Respondents
Women	29%	37%	26%	7%	171
Men	20%	37%	37%	7%	123

had been in full-time jobs. Seventy-three percent of previously employed faculty women and 77% of previously employed faculty men had been in tenure-track positions. Among those who are not currently in academia, but whose previous job had been as a faculty member, men and women were fairly similar in the sense that a majority had been employed full time and had held tenure-track positions.

As found in other studies, a distinction emerges on the basis of gender when comparing faculty status.⁵ When examining the subgroup of respondents who reported that they were currently faculty members, the following pattern emerges: Although men and women were equally represented at the rank of associate professor, the male respondents were more likely to be full professors, while the women were more likely to be assistant professors. Table 3 shows the distribution of faculty levels by sex for the subgroup of respondents who were faculty members.

To summarize, the data reveal that the women Ph.D. graduates were less likely to be faculty members, and among those who were faculty members less likely to have achieved full professor status. The list below summarizes the findings for **all** of the respondents.

Among the women Ph.D.'s

67% were faculty members
1% were lecturers
21% were assistant professors
26% were associate professors
18% were full professors
3% were department chairs, directors, or deans

Among the men Ph.D.'s

75% were faculty members
1% were lecturers
16% were assistant professors
29% were associate professors
28% were full professors

2% were department chairs or deans

However, if we look only at those respondents who are currently faculty members and control for the year at which the Ph.D. was received (looking only at the respondents who received their degree before 1975), we see that women are equally as likely as men to achieve the rank of full professor. In other words, recognizing that relatively few women were granted the doctorate in political science before 1975, and also recognizing that fewer women than men are currently in faculty positions, the fact remains that those women who stayed in the political science teaching profession and who received the doctorate before 1975 were as likely to achieve full professor status as men.

Another way to look at these data is to point out that among full professors, the average year for both men and women to have obtained the Ph.D. was 1973. Thus, men and women faculty upon attaining full professor status are equally far from the year that they graduated. Apparently, it takes men and women an equal amount of time to obtain equal professional status (reminding the reader again, however, that the attrition rate from faculty positions is higher for women than men, i.e., fewer women than men with equal degree qualifications from early graduation cohorts stayed in faculty positions).⁶ Among those who are currently in a faculty position, male and female associate professors are also equally far from their graduation date: the average year that the Ph.D. was obtained among both male and female associate professors is 1981.

One aspect of the observed differences in faculty rank (as presented in Table 3) is the process by

which faculty members reach tenure—particularly the time when they seek tenure. Respondents who had tenure at their university or college were asked whether they had come up for tenure early. Sixty-nine or 31% of the tenured faculty responded positively to this query. Male faculty were slightly more likely to have done this than the female faculty—32% to 29%—but the difference is not statistically significant. However, the male faculty who applied early are much more likely than female faculty to report having done so on their own initiative rather than being told to try early ($\phi = .313$, sig. = .01).

Sixty-eight percent of the male faculty who did come up early for tenure said they did it on their own initiative compared with 36% of the female faculty, while 64% of the female faculty compared with 32% of the male faculty stated they were told to apply early. The possible explanations for this difference are both social and psychological. The fact that men were significantly more likely to come up for tenure early on their own initiative may represent more positive perceptions of the environment as being supportive among males as compared with females; more self-confidence among males than females; and/or a higher level of deference among females as compared with males.

Among full professors, both overlaps and differences exist in field of major research interest. Among male full professors, the most commonly reported areas of major research interest (in declining order of frequency) are: American government/politics, public law/judicial politics, political philosophy/theory, and public administration. For female full professors the fields of major research interest most commonly reported are: comparative politics, American government/politics, international politics, and public law/judicial politics.

Research interests of male and female associate professors tended to also be both similar and different. For male associate professors the most frequently noted major research fields in order are: comparative politics, American govern-

TABLE 4
Type of Institution Where Employed, Faculty Members by Sex

Sex	Ph.D.	M.A.	4-year	2-year	Other
Women	59%	20%	17%	2%	1%
Men	55%	19%	25%	1%	—

ment/politics, international politics, and public policy. For female associate professors the list, in descending order of frequency reported, is: comparative politics, American government/politics; and tied for third are international politics and women and politics/feminist theory. It appears that men and women faculty are not systematically segregated by field of research, although the mention of women and politics/feminist theory as a major research interest is extremely infrequent among males, while it is less infrequent among women.

Academic Institutions of Faculty Employment

Among the respondents who are faculty members, female graduates from Midwest universities are slightly more likely than male graduates to be teaching at Ph.D.-granting institutions (59% and 55% respectively) (Table 4) and slightly more likely to be employed at public universities or colleges (72% for women and 69% for men).

Among the subset of respondents who are teaching in institutions with a semester system, women reported teaching an average of 2.56 courses a semester ($n = 145$), and the men reported teaching an average 2.48 courses ($n = 105$) ($\eta^2 = .04$, $n.s.$). Thus, the teaching loads are similar for both men and women.

Those who are currently faculty members were asked to describe their service responsibilities to their institution as being either light, average, or heavy. No gender differences emerged in the pattern of responses. The distribution of responses for service responsibilities is as follows:

Light:

8% of the women
 11% of the men

Average:

40% of the women
 40% of the men

Heavy:

52% of the women
 49% of the men

Multivariate Analysis of Predictors of Faculty Rank

To determine the independent effects of the differential career and demographic factors upon achieving promotion to associate professor, full professor, and beyond, we

built a scale of faculty rank and employed it as the dependent variable in multiple regression analysis. Scale values for faculty rank range from 10 to 70, with 10 representing lecturers and instructors and 70 representing deans.⁷ The list of potential predictor variables include the following demographics: gender, marital status, whether one has any children, whether one has ever been a single parent, and race or ethnic origin. None of these demographic factors is independently and significantly related to faculty rank achieved (see Table 5).

The primary predictors of faculty rank are the year when the Ph.D. was granted and the year of birth of respondents. Each of these is significantly related to current faculty position. Since year of birth and year of degree are highly correlated with one another, only year

TABLE 5
Regression Equation Predicting Faculty Rank

Predictor Variables	Regression Coefficient	Beta (standardized coefficient)	t value
Male Gender (dichotomous: 2 = male, 1 = female)	.158	.008	.177
Married (dichotomous: 1 = married, 0 = all others)	.284	.013	.245
Children (dichotomous: 1 = yes, 0 = no children or no response)	1.648	.080	1.487
Single parent (dichotomous: 1 = yes, have been a single parent, 0 = no)	.771	.024	.482
"White" (dichotomous: 1 = race is white, 0 = all others)	1.739	.048	1.115
Year of doctorate	-.788	-.590	-12.822
Service Responsibilities (high = heavy)	2.487	.159	3.598
Came up for tenure early (dichotomous: 1 = yes, 0 = no)	2.813	.119	2.751
Women's Studies Specialty (dichotomous: 1 = major research in women and politics, 0 = all others)	-1.602	-.034	-.790
American Government Specialty (dichotomous: 1 = major research in American politics, 0 = all others)	-.943	-.036	-.831
Comparative Politics Specialty (dichotomous: 1 = major research in comparative politics, 0 = all others)	.004	.000	.003
Currently employed in a public rather than private institution (dichotomous)	1.201	.055	1.228
Currently employed in a Ph.D. granting university (dichotomous)	-.143	-.007	-.162
constant	84.12		13.251
R square	.523		
adjusted R square	.500		
N of Cases	289		

of degree is entered into the regression equation. This term alone accounts for a major portion of the explained variance in faculty rank: those who received their degrees long ago (older faculty members) are more likely to be found at the higher faculty ranks than those who received their doctorate relatively recently (younger people). When one controls for year of degree (or age), such attributes as gender and marital status have no significant impact upon observed variations in faculty rank.

Two other career factors also hold their own explanatory power in the multivariate equation, even with the control for year of degree. Respondents who report heavy service responsibilities in their current job are more likely to be found at higher faculty ranks,⁸ and respondents who came up for tenure early are more likely to currently reside in a higher faculty position. Other characteristics of the present job or of one's research interests, however, do not have an independent impact upon variation in faculty rank. Having a major research interest in women and politics, American government, or comparative politics does not impact on observed differences in faculty rank. Also it makes no difference whether one is employed at a public or private institution or whether one is employed at a Ph.D.-granting institution in terms of professional advancement through the ranks.

For those readers who prefer to evaluate a more parsimonious model, given the limited sample size, we also report the results of a regression analysis that contains just five predictor variables (see Table 5a). Noteworthy is the fact that the amount of explained variance remains high at over 50%, and the magnitudes of the regression coefficients are very stable. High faculty rank occurs most frequently among those who received their Ph.D. a while ago, among those who currently have heavy service responsibilities, among those who came up for tenure early, and among those who have children. With these controls, gender has no

TABLE 5A
Regression Equation Predicting Faculty Rank
(More Parsimonious Model)

Predictor Variables	Regression Coefficient	Beta (standardized coefficient)	t value
Male Gender (dichotomous: 2 = male, 1 = female)	.168	.008	.197
Do you have children? (dichotomous: 1 = yes, 0 = no children or no response)	1.850	.089	2.042
Year of doctorate	-.809	-.606	-13.592
Service Responsibilities (high = heavy)	2.211	.141	3.326
Came up for tenure early (dichotomous: 1 = yes, 0 = no)	2.898	.123	2.887
constant	88.70		15.697
R square	.515		
adjusted R square	.506		
N of Cases	289		

influence on the attainment of high faculty rank.

It is important to note that this multivariate analysis only helps to explain progress through the professional ranks among those who are currently employed in a faculty position. These results do not address the issue as to why some Ph.D. graduates do not hold faculty positions while others do.

Environment for Female Faculty Members

The graduates who were in faculty positions at the time of the survey were asked a series of questions concerning the environment for female faculty members at their institution. They were asked how they would describe their university or college's leave policy, whether students are equally respectful of male and female faculty members, whether the administration treats male and female faculty equally, and whether male faculty members treat women faculty members with respect.

Substantial variation exists among faculty members regarding their perception of the progressiveness and flexibility of their institution's leave policy. Nearly one-quarter (24%) believe that their institution is both progressive and flexible (including sick leave and/or maternity/family leave), while just

over one-quarter (26%) feel their institution is neither progressive nor flexible. Eleven percent described their institution as being progressive but not flexible, while 39% feel it is flexible but not progressive.

Major differences emerge on the basis of sex. Thirty-six percent of the female faculty consider their institution to be neither progressive nor flexible in its leave policy compared with 14% of the male faculty. At the same time, 32% of the male faculty described their institution as both progressive and flexible compared with only 17% of the female faculty. No substantial differences emerge between the percentages of male and female faculty describing their institution as progressive or as flexible. It is noteworthy that even though males are more willing to give their institutions higher marks than are females, a majority of both men and women determined that their universities are not both progressive and flexible with regard to personal leaves.

Male and female faculty also disagreed in their views of how students acted toward female faculty members (Table 6). Overall, 65% of faculty respondents either agreed or agreed strongly that students were equally respectful of male and female faculty members while 35% either disagreed or disagreed strongly. Fifty-six percent of the female faculty compared with 78%

TABLE 6
Institutional Environment for Female Faculty Members by Gender

Sex	Strongly Agree %	Agree %	Disagree %	Strongly Disagree %	N
Students are equally respectful of male and female faculty.					
Female	11	45	35	9	168
Male	28	50	19	3	116
The administration at this institution treats male and female faculty equally.					
Female	12	44	34	10	170
Male	29	47	19	5	117
Male faculty members treat women faculty with respect.					
Female	14	61	17	8	163
Male	36	56	7	1	120

of the male faculty agreed with the statement while 44% of the female faculty and 22% of the male faculty disagreed. Similar differences emerge regarding perceptions of administration treatment of male and female faculty and with regard to the respect with which male faculty members treated female faculty members. A majority of both male and female faculty responded positively to these questions, but a substantially larger majority of male faculty gave positive responses about the academic environment than did female faculty.

Among the female faculty members (Table 7), attitudes about the work environment are significantly related to faculty status. Full professors are more positive than associate professors or assistant professors. A consistent pattern emerges—graduates in the higher faculty ranks are more likely than graduates at the lower ranks to see their environment as one where male and female faculty are treated equally. Clearly, those who are further along and have progressed through the ranks of the system tend to view the surroundings more positively than those who are at the lower rungs of the same system.

In an effort to evaluate more systematically which attributes of faculty members are independently related to the more negative perceptions about the academic environment, we built a scale based on responses to the three questions on whether students were equally respectful of male and female faculty, whether the administration treats male and female faculty equally,

and whether male faculty treat women faculty with respect. We will call this scale the “reports of a chilly climate scale.” Scale values range from 3 to 12, with the highest values indicating consistent reports of inequality in treatment by students, administration and faculty.⁹ As would be expected from the distributions in the tables presented above, men more frequently score lower (less than six), i.e., men are more likely to report equality of treatment, while women more frequently score higher (7 or above), i.e., women are more likely to disagree that the environment is characterized by equality between men and women in respect and treatment.¹⁰

When this scale is regressed in an equation containing several potential explanatory variables, the amount of variance that can be explained in reports of a chilly climate is over 20%. The results of

the multivariate analysis are presented in Table 8. Gender, the year of doctoral degree, and women’s studies as a research field each emerge as significant predictors of reports of a chilly climate (using an acceptable probability of type I error at less than .01 with a one-tailed distribution).

The significance of the gender variable reveals that even with all the controls included within this regression equation, women have a tendency to report inequality in the work place significantly more frequently than do men. This means that women are more likely than men to believe that the treatment women receive in the work place is unequal to the treatment of men. This finding is critically important for understanding relations among men and women in faculty positions: women work in a perceptual environment that is different from the environment reported by (and/or experienced by) men. Men are likely to think that the environment is one of equality, while women are significantly less likely to concur.

The significant coefficient for the year-of-degree variable indicates that faculty members who obtained their degrees relatively recently (also younger faculty) are significantly more likely to perceive a chilly climate than are older faculty members who obtained their degrees a longer time ago. What are the reasons why more recent Ph.D.’s are more likely to perceive inequality? We will return briefly to this question in our conclusion.

TABLE 7
Institutional Environment Among Female Faculty Members by Rank

Faculty Rank	Strongly Agree %	Agree %	Disagree %	Strongly Disagree %	N
Students are equally respectful of male and female faculty.					
Assistant	10	35	36	14	49
Associate	11	42	41	11	64
Full	15	57	23	—	47
The administration at this institution treats male and female faculty equally.					
Assistant	10	38	42	10	50
Associate	10	41	35	14	63
Full	18	57	20	4	49
Male faculty members treat women faculty with respect.					
Assistant	14	60	15	10	48
Associate	11	56	24	10	63
Full	20	68	11	2	45

TABLE 8
Regression Equation Predicting Reports of Chilly Climate

Predictor Variables	Regression Coefficient	Beta	t value
Male Gender (dichotomous: 2 = male, 1 = female)	-1.040	-.255	-4.431
Married (dichotomous: 1 = married, 0 = all others)	.359	.081	1.162
Children (dichotomous: 1 = yes, 0 = no children or no response)	-.476	-.116	-1.649
Single parent (dichotomous: 1 = yes, have been a single parent, 0 = no)	.843	.130	1.983
"White" (dichotomous: 1 = race is white, 0 = all others)	-.019	-.003	-.045
Year of doctorate	.083	.311	4.483
Service Responsibilities (high = heavy)	.173	.056	.945
Came up for tenure early (dichotomous: 1 = yes, 0 = no)	-.340	-.072	-1.223
Women's Studies Specialty (dichotomous: 1 = major research in women and politics, 0 = all others)	1.307	.144	2.525
American Government Specialty (dichotomous: 1 = major research in American politics, 0 = all others)	-.220	-.042	-.724
Comparative Politics Specialty (dichotomous: 1 = major research in comparative politics, 0 = all others)	-.486	-.098	-1.669
Currently employed in a Ph.D. granting university (dichotomous)	.144	.036	.627
Currently employed in a public rather than private institution (dichotomous)	.261	.060	1.021
Currently tenured (dichotomous: 1 = yes, 0 = no)	.605	.141	1.942
constant	.315		.172
R square	.230		
adjusted R square	.188		
N of Cases	272		

The significance of the women's-study field variable indicates that faculty members whose major research interest is in the women and politics field, or who are associated with a women's studies program, are more likely than others to report an environment where male and female faculty are not treated equally. Women's studies enters the equation as a dummy variable that groups faculty together who listed as their major field of research either gender and politics, women and politics, feminist theory, or sexual violence, with faculty who hold a joint appointment in women's studies. It is possible that the research of faculty members into gender issues has heightened their awareness of inequality in the workplace. It is also possible that something about the re-

search that they do has itself engendered a more chilly response and that this accounts partially for their more negative reports about equality in the workplace. Four other variables come forward as significant predictors of perceptions of a chilly climate.¹¹ First is whether the respondent has children; second is the single parent dummy variable; third is the comparative politics research interest; and fourth is the currently tenured dummy variable. Even with the control for the year at which the degree was granted (which serves as a surrogate control for age), respondents with children—who generally tend to be older than those without children—tend to perceive the work environment as being more equal for men and women.

Noteworthy, however, is the fact

that the 11% of respondents who had been single parents were significantly more likely to perceive inequality in the workplace. We can only speculate as to why this would be the case. Could single parents be treated less than equally by colleagues and administrators? Or could the experience of being a single parent somehow heighten sensitivity and affect one's assessment of equality in the work place?

For the final two significant predictor variables, we note that comparative politics as a research interest is not likely to be tied to reports of a chilly climate, while the status of being a tenured faculty member is tied with more frequent reports of a chilly climate. The effect of tenure status upon reports of chilly climate is significant only when the controls for year of degree, major research field, experience as a single parent, and gender are introduced into the analysis. When these other factors are held constant, those with tenure are more likely to report a chilly climate than those without tenure.

In other words, once we control for length of time in the profession—which is positively linked to the more positive perceptions of the environment—being tenured actually yields the more negative assessments. It is possible that although more time within the system generally contributes to more positive evaluations of the system, the process of gaining tenure actually produces a more negative assessment of how males and females are treated.

The other variables in the regression equation do not independently influence reports of a chilly climate. One variable, however, is bivariate related (without controls) to reports of a chilly climate. If one did come up early for tenure, one is less likely to report a chilly climate (in comparison to someone who did not come up for tenure early) (Pearson correlation coefficient = $-.105$, sig. = $.04$). This relationship, however, does not hold its own in a multivariate test.

We produced a more parsimonious model of the predictors of the

TABLE 8A
Regression Equation Predicting Reports of Chilly Climate
(More Parsimonious Model)

Predictor Variables	Regression Coefficient	Beta	t value
Male Gender (dichotomous: 2 = male, 1 = female)	-1.033	-.255	-4.480
Children (dichotomous: 1 = yes, 0 = no children or no response)	-.322	-.079	-1.321
Single parent (dichotomous: 1 = yes, have been a single parent, 0 = no)	.650	.100	1.728
Year of doctorate	0.82	.306	4.477
Women's Studies Specialty (dichotomous: 1 = major research in women and politics, 0 = all others)	1.427	.157	2.835
Comparative Politics Specialty (dichotomous: 1 = major research in comparative politics, 0 = all others)	-.442	-.089	-1.614
Currently tenured (dichotomous: 1 = yes, 0 = no)	.572	.133	1.978
constant	1.146		.684
R square	.211		
adjusted R square	.190		
N of Cases	274		

chilly climate scale for the reader's reference (see Table 8a). In this reduced model, the percent of variance explained declines only slightly to 21% and the magnitudes of the coefficients are fairly stable. Some changes do occur, however, in t values (and the corresponding significance levels). The results indicate that the only variables that are consistently and significantly related to reports of a work environment that is unequal for men and women are: female gender, more recent graduation with a Ph.D., women's studies research interest, currently tenured, and single parent.

Overall, these data indicate that male faculty members tend to perceive their institutional environment as being generally friendly to females, while women tend to perceive the environment as being less friendly. A possible explanation for these differences in perceptions and experiences is that many male faculty members are either unaware of some of the more subtle forms of "gender insensitivity," or the male faculty members see these behaviors as being insignificant. Without an awareness among men of subtle inequalities in treatment between men and women, it is unlikely that

men can be convinced of a need for change.

According to Conover and Palley (1992, 551) such differential experiences are likely to continue unless "courteous nonsexist patterns of professional interaction" are established. They argue that condescending attitudes and the denial of real authority to women may easily continue if the leaders within departments do not attempt to identify and eliminate those attitudes and practices that cause women to report that a chilly climate does exist in their workplace. In order to educate men and women alike, offending behaviors must be exposed and discussed. Only then will it be possible to work toward their elimination in the future.

Relevant here as well is the finding that on the basis of the lists of graduates provided by the participating departments, it is clear that Ph.D.'s in political science conferred upon women constitute only a small portion of the total. Only 17% of all doctoral graduates from political science departments in Midwest universities from 1965 through 1991 were women. This low percentage indicates that the elimination of gender inequities in the political science profession

must begin early—in recruiting and retaining female graduate students. Even more disturbing is the finding that the number of female Ph.D. graduates peaked in the mid-1970s and mid-1980s, and that in the late 1980s and early 1990s, a declining number of Ph.D.'s were being conferred upon women.

Graduates Pursuing Other Careers

Ninety respondents who said they were not faculty members completed the section of the survey on their current employment—62 women and 28 men. Table 9 shows the types of institutions in which these individuals are employed. Among those graduates pursuing careers other than teaching at a college or a university, the men are more likely to be employed by the government, while the women are more likely to work at an academic institution. For most of these individuals this job was not their first position since receiving their Ph.D.

The most frequently mentioned position titles among the nonfaculty members are: director (18% of men and 15% of women), president (14% of men and 7% of women), and director of research (9% of men and 7% of women). Other position titles that were mentioned by at least four respondents included: consultant (7% of women, 5% of men), vice-president (6% of women, 5% of men), high school teacher (7% of women, no men), and analyst (6% of women, 9% of men). Of these graduates the vast majority of both men and women were employed full time (96% of men and 87% of women), and most had also held other positions previous to their current one (91% of men and 87% of women).

In our final section we seek to determine whether our survey data can provide explanations for why some Midwest Ph.D. graduates are employed in faculty positions and why some are not. Seventy-six percent of valid responses to the question of faculty employment indicated that they are currently employed as a faculty member at a college or university, while 24%

TABLE 9
Type of Institution Where Employed, Nonfaculty Members

	Academic	Government	Private Business	Nonprofit Agency	Other	NA
Women	23%	21%	26%	18%	11%	2
Men	7	32	21	18	11	11

said that they are not faculty members (although 21% of nonfaculty are employed at an academic institution). Because we are attempting to predict whether a graduate is currently a faculty member or not, we employ the technique of logit analysis. The logit models tested demographic factors, major field, and year of Ph.D. as predictors of the probability of currently being a faculty member. The gender of the graduate does influence the probability of currently being a faculty member, while major field and other demographics do not. Indeed, when using any items from the questionnaire that were asked of all respondents (those who are faculty members as well as those who are not), only gender emerges as a significant predictor or the likelihood of currently being a faculty member.

The results of the logit analysis that included the best predictors are in the first set of columns in Table 10 (significance levels are for the Wald statistic). None of the variables are particularly powerful predictors of the probability of be-

ing a faculty member, although gender does emerge as significant, and the model does successfully predict 77% of cases. When gender changes from female to male, the odds of being a faculty member are increased by a factor of 1.78.

Another way to evaluate the odds of being a faculty member is to look at those respondents who previously were faculty members and evaluate characteristics of their previous employment in an attempt to account for why they have stayed (or not stayed) a faculty member. Again we evaluated a full set of characteristics of the previous employment, and the only significant predictors are whether the previous job had been a part-time teaching position and whether the previous position had been a temporary position (second half of Table 10).

Other characteristics of the previous job that we tested, but found not to be significant in determining current employment as a faculty member, include: whether the institution previously employed in

granted a Ph.D. degree, whether the institution was public or private, whether the appointment was tenure track, or other reasons why the graduate left this previous position. In this equation, gender is not significant.

It is clear from this analysis that when a graduate accepts a part-time teaching position or a temporary position, the probability increases that the next position will **not** be as a faculty member at a college or university. In fact, avoiding a part-time position increases the probability of being a faculty member in the next job by a factor of 6.4.

Conclusions

Male and female graduates with a doctorate degree in political science from Midwest universities during the period from 1965 to 1991 do differ in notable respects. First, women are proportionately less likely than men to be employed in faculty positions now and, second, women faculty are significantly more likely than male faculty to characterize their work environment as being unequal in the way that male and female faculty are treated. Noteworthy as well is the finding that reports of a chilly climate are likely to occur less frequently among faculty members

TABLE 10
Logit Analysis of Faculty Members on Demographics and Career Factors

Variable	Equation 1 (Entire Sample)			Variable	Equation 2 (Those previously employed as a faculty member)		
	estimated coefficient	standard error	significance		estimated coefficient	standard error	significance
Sex	.579	.272	.033	Sex	.687	.438	.117
Year of doctorate degree	.034	.018	.056	Year of doctorate degree	.043	.031	.174
Single parent	.019	.385	.961	Previous position was full-time	1.860	.511	.000
"White"	-.095	.450	.832	Hostile environment in previous position	-.636	.526	.227
intercept	-2.205	1.579	.163	Previous position was temporary	-1.568	.726	.031
				intercept	-4.238	2.570	.099
% correctly predicted	76.6%			% correctly predicted	79.9%		
-2 Log Likelihood	387.23			-2 Log Likelihood	155.27		
-2 Initial Log Likelihood	395.13			-2 Initial Log Likelihood	175.06		
Number of cases	363			Number of cases	169		

who are further along in their careers.

One wonders whether a chilly climate might interfere with progress through the professional ranks. If a kind of screening out of the dissatisfied is occurring, this may have negative repercussions in terms of loss of talented intellectuals. If, rather, a learning process is taking place as one becomes more advanced in age and faculty status, what then is it about inequality in the workplace that is being learned? Are more-senior faculty members learning how to get along better with others, or learning how to ignore inequality? Why are some people learning better than others? How could the effect of a chilly climate be reduced for those at the lower faculty ranks and for women?

One possibility is to improve mentoring for female faculty and for younger faculty. One might assume that women are still missing a great deal of critical information about progress within the profession because they miss taking part in many of the informal exchanges that occur among their predominantly male colleagues.

Other interesting findings are the impacts of the women's studies variable and the single-parent experience on reports of a chilly climate. Do the people with these characteristics have a different conception of what the environment should be like, or have their experiences been quite different than faculty members with other major research interests or other family backgrounds? Different conceptions of what the environment should be like as well as a heightened awareness of problems facing women may characterize researchers with experience in the study of women and politics or feminist theory.

Single parents, in contrast, may run into some unique challenges that affect their perceptions of the work environment. For example, faculty meetings are often scheduled at the time that children get out of school (3–4 p.m.). Two-parent families may be able to juggle their schedules to accommodate such meetings, but a single parent may be forced to choose between missing a meeting or making other

arrangements to have children picked up after school. Although there is no difference in equality of treatment here, single parents may nonetheless have unequal opportunities to participate in certain faculty activities as compared with others.

Overall, this study has provided evidence that differences between male and female graduates exist both in terms of perceptions and in terms of employment experiences. Men need to be willing to work with women and women need to work with men to help keep more women in faculty positions and to help make the experience of being a faculty member more positive for both women and men. A concerted effort is essential if lingering differences are to be replaced with mutual support.

Appendix

Description of Sampling Method

The chairpersons of each of 26 Ph.D.-granting programs in political science in the Midwest region were sent a letter requesting a list of all those individuals who were granted the doctorate of philosophy degree in political science between 1965 and 1991. The names and addresses of chairpersons was provided by John Pelissero of the Midwest Political Science Association. Letters were sent to chairpersons in August 1992. Follow-up letters were sent two months later to those chairpersons who did not respond to the original request.

Fourteen departments responded by sending complete lists of graduates with addresses. These fourteen were included in the first stage of the sample selection process. For these departments, all women graduates were identified and counted—yielding a total of 291 female graduates from these 14 departments during the period from 1965 to 1991. In addition, the year of graduation was recorded for each woman (when available) yielding the distribution shown in the table.

From the same departments, and for the same period, 1,411 Ph.D.'s were granted to men. All 1,411 men were assigned a unique ID number. From among the full list of males, 291 were selected through a random-number computer program. The selection criteria was set to select the same number of men from each graduation year as

Frequency Distribution for Women Graduates of 14 Midwest Universities by Date when the Ph.D. Degree was Conferred

Year	Number of Women Graduates*
1965	6
1966	3
1967	4
1968	6
1969	4
1970	5
1971	8
1972	7
1973	11
1974	9
1975	10
1976	18
1977	10
1978	11
1979	6
1980	9
1981	8
1982	12
1983	14
1984	12
1985	15
1986	9
1987	9
1988	4
1989	4
1990	7
1991	7
unknown	63 (year of graduation not specified on list obtained from department)

(*Both men and women with incomplete addresses were excluded from the count, thus the actual number of degrees granted is slightly higher.)

there were women in the sample. For example, we knew that six women in the sample were graduated in 1965; thus, from among all men we knew were graduated in 1965, six were randomly selected to be included in the sample. Among the sample of women, we also knew that at least three graduated in 1966; thus three men with the same graduation date were randomly selected to be included in the sample. To match the 63 women where the graduation date was unknown, 63 men were randomly selected from the full lists of males, without regard for date of graduation. Thus, the original sample list included 291 men and 291 women, with the proportion of men selected for any given year of graduation being equal to the number of women who we knew were graduated in the same year.

To each of these 582 people we sent a cover letter, a questionnaire, and a stamped return envelope. Later, after the original mailing had already been sent, three more universities provided mailing lists. For these universities, the women graduates were identified and each was sent a questionnaire (with

cover letter and return envelope). No more men were added to the sample because of the prohibitive cost of generating another random sample of men. The addition of these three universities that came in late with their lists of graduates added a total of 64 more women to the sample. One month after the original mailing occurred, follow-up letters were sent to all nonrespondents. The follow-up mailing including a new copy of the questionnaire and another stamped return envelope.

Some respondents were unreachable, because the address on the list provided by the graduating university was not correct (or not current). When undeliverable questionnaires were returned to us by the post office, we tried looking up the name in the American Political Science Association Membership Directory, but this practice only rarely produced a new address to which the questionnaire would be sent. The overall response rate for the 17 universities was 73.3%. The overall rate for men was 66.3%, and for women the overall response rate was 79%.

For the nine universities that are located in the Midwest region (and do offer a Ph.D. degree), but which were not included in the sample, the reasons are as follows: Six departmental chairpersons either did not respond or responded by sending lists of graduates that lacked addresses. Two departments only began granting the Ph.D. after 1991. One department sent their list of names and addresses after the survey had been completed (nine months after our initial request).

Graduates from the following universities are included in the study: Michigan State, Ohio State, Miami University, Purdue, University of Wisconsin, Madison, University of Minnesota, Notre Dame, University of Illinois, Champaign, University of Iowa, Northern Illinois University, Washington University, University of Michigan, University of Kansas, University of Kentucky, University of Nebraska, University of Wisconsin, Milwaukee, University of Indiana.

Notes

*Amy Sue Mullen, Patricia Ann Goodwin, and Meengeon Kim provided valuable assistance in survey implementation, coding of responses, and data entry. Helpful suggestions on an earlier draft were offered by Diane M. Duffy, Arthur H. Miller, and Margaret C. Trevor.

1. As quoted by Jennifer Hochschild in her "President's Message" *WCPS Quarterly*, Vol. 11, No. 3 (March 1994).

2. The Midwest region, according to the Executive Director of the Midwest Political Science Association, includes the following states: Ohio, Missouri, Illinois, Kentucky, Nebraska, Michigan, Indiana, Iowa, Minnesota, Kansas, and Wisconsin.

3. Costs of the survey were covered by contributions from the Departments of Political Science at the University of Illinois (at Urbana-Champaign), the University of Iowa, Miami University, the University of Michigan, the University of Missouri (St. Louis), the University of Minnesota, the University of Notre Dame, and Washington University. Additional funds were provided by Women's Caucus for Political Science (American Political Science Association), the Midwest Political Science Association, the Midwest Women's Caucus for Political Science, and the Iowa Social Science Institute.

4. Although the following is only conjecture, it may be that for graduation cohorts since 1980, we are seeing an effect of affirmative action laws.

5. See Sarkees and McGlen (1992) for more on faculty rank and also differential salary patterns.

6. Since a larger portion of female graduates compared with male graduates go into nonfaculty positions, we must recognize that responses from the more advanced women in faculty positions come from a skewed group. Either a self-screening process was taking place that caused more women than men to opt out of faculty positions, or some obstacles were preventing women from either entering or staying in faculty slots.

7. Although in theory, the ranking of faculty positions must be considered as strictly ordinal, we can make assumptions about the magnitudes of the distances between faculty positions and thus transform the ordinal scale into an interval scale. The assignment principle that we have employed places equal distance between each faculty position that requires either a promotion or significant recognition by colleagues or the university to move to the next level. Thus, scale values are assigned as follows: 10: adjunct instructor, instructor, lecturer; 20: assistant professor, research associate; 30: associate professor, associate director; 40: full professor, director; 50: regents professor; 60: chair; 70: dean.

8. Reports of current service responsibilities, which tend to be heavier in higher faculty ranks, do not imply that these same people had heavy responsibilities when they were in lower ranks.

9. This is an additive a scale with a reliability coefficient (Cronbach's alpha) of .763. The question on leave policy was excluded from the scale because it taps into a different aspect of the environment and it did not correlate as well with the three items assessing equality of treatment. We point out that when a respondent disagrees with the statement that administration treats male and female faculty equally, this may reflect sentiments that women are treated *better* than men, or it may reflect sentiments that women are treated *worse* than men. We do not know which is the case.

10. The same regression equation that was tested in Table 5 was reevaluated after

the addition of the chilly climate scale to the set of independent predictors. Although high-faculty rank and reports of a chilly environment are negatively correlated (Pearson's correlation coefficient = $-.219$), the chilly climate scale is not independently and significantly correlated with faculty rank when controls for year of degree, gender, and other factors are included in the analysis.

11. For these factors, we use as a cut-off point for Type I error .05.

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