

NEGATIVE IMPACT OF FEMALES ON MALE SELECTION OF CAREER CHOICE

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The advent of females into careers traditionally filled by males often results in a phenomenon called "negative impact." Demographic data show that as the number of females entering a field increases, the number of males decreases. This research focuses on the changing ratios of males to females in the field of psychology, particularly as it is represented by students in the National Honor Society of Psychology, Psi Chi. Three independent samples were taken of membership in Psi Chi; one for members inducted during 1971, a second for members inducted during 1981, and a third for members inducted during 1991. These dates reflect a time span encompassing the decades during which women's rights became a national issue. These data are supplemented with sample sizes of employment ratios in several fields that have historically been perceived as male-oriented; mathematics, computer sciences, and engineering. The samples reflect a significant trend to female dominance, particularly in psychology. Discussion highlights the need for further inquiry into the relevant earnings and prestige levels of occupations affected by the switch from a male-dominated to a more female-dominated structure.

The past three decades, and in particular the years between 1970 and 1990, have seen a growing number of women joining the labor force. Past studies have documented large, unexplained residuals in earnings differences between the sexes in all professional fields (Becker, 1985; Ryscavage & Henle, 1990; Meyer, 1985), and have generally defined this residual as discrimination. Others have asserted that the sex differences in income are a result of the sex composition of one's occupation (Jaffee, 1989). Organizational theories propose workplace social relations as functional in producing inequality (Baron, 1984; Spaeth, 1985) and human capital theories suggest that the amount of education, training, and job experience of employees are the contingent factors in occupational equality (Jaffee, 1989). The present research examines the changing ratios of male to female professionals in occupations traditionally perceived as male-dominated, particularly in the field of psychology. Without focusing on earnings differentials, the data suggest that the value of formerly male-dominated

professions tends to decrease and is therefore less likely to be entered by males as more females enter the field.

Gender roles, rather than biological sex, create occupational stereotypes in gender-typed occupations. Autonomy and leadership, with high scores on instrumental characteristics such as assertiveness and independence (Bem, 1977) are qualities evaluated as masculine. Expressiveness, social relations, and passive behaviors are equated with the feminine. Occupational sex composition reflects these stereotypic connotations and creates an image of the particular field as one which is associated with gender-related values. The changes in sex composition of formerly male-dominated professional fields that are being filled by females now shows a negative impact on the number of males choosing to enter the field. A recent study shows that the sex composition of an occupation has a significant influence on the conceptual autonomy and authority of its constituent members that is not accounted for by the human capital variables of education, experience, and SES

(Jaffee, 1989). Thus, the overriding image of the occupation as an expression of feminine identity is in conflict with the socialize gender identity of potential members from the male population. The data show that males are slowing entry into these newly "feminized" occupations by significant ratios over the decades between 1970 and 1990.

Method

Data was collected from U.S. Government publications on employment and education statistics in selected fields for the years between 1968 and 1992. In addition, because this study is particularly concerned with the changing sex composition of professional psychology, information was collected on the sex ratios of inductees into Psi Chi, the National Honor Society of Psychology, for the years 1971, 1981, and 1991. The names of all new inductees for each of the sample years were tabulated for numbers of males, females, and, due to ambiguity of name, unknown. Complete totals for each are shown in Table 1. These figures represent a population of students most likely to pursue a career in the field psychology.

Educational competence, as a human capital variable, was also researched by gender for the numbers of male versus female students completing a Bachelor's, a Master's, and A Doctorate level degree in four major occupations

traditionally dominated by males. These educational samples were taken for the years 1971, 1981, and 1988, for the fields of engineering, mathematics, and computer sciences. These raw data were then compared for changing sex ratios, rate of change, and rate of follow-through from doctorate level to professional employment.

Results

In 1971, 54% of the students being inducted into Psi Chi were female. The amount of the total student population enrolled in a Bachelor's program for psychology was 44%; for Master's, 37%; and for a Doctorate, 24%. At the same time, women accounted for less than 10% of the total professionals in the sciences.

By 1981, the female composition of Psi Chi had grown to 72% of all newly inducted members. By this time, 65% of students enrolled in a Bachelor's program of psychology were female, 58% of those in a Master's program of psychology were female, and 43% of those receiving a Doctorate in psychology were female. Over the ten years between 1971 and 1981 the female constituency of Psi Chi inductees had increased by 18%. The number of female students receiving a Bachelor's degree in psychology increased by 21%; in the Master's program by 21%, and at the Doctorate level by 19%. The number of females employed in the field had now reached 42%.

Table 1
New Members of Psi Chi, by year and gender

	1971		1981		1991	
	#	%	#	%	#	%
Males	1923	44.5	2660	27.8	2854	20.3
Females	2325	53.8	6814	71.2	10,720	76.5
Unknown*	70	1.6	85	1.0	426	3.0
Total	4318		9559		14,000	

*Gender unknown due to name ambiguity

Table 2
Educational Degrees Received, % female to total

	Bachelor's	Master's	Doctorates
1971			
Computers	14%	10%	3%
Engineers	*	1%	*
Mathematics	38%	29%	8%
Psychology	44%	37%	24%
1981			
Computers	32%	23%	9%
Engineers	10%	8%	4%
Mathematics	43%	34%	16%
Psychology	65%	58%	43%
1991			
Computers	32%	27%	11%
Engineers	14%	12%	7%
Mathematics	46%	40%	17%
Psychology	70%	67%	54%

*Numbers too few for required significance

By 1991, female inductees into Psi Chi made up a full 79% of all inductees. The most current data available for college enrollment was for the year 1988. In that year, 70% of those enrolled in a Bachelor's program of psychology were female. The Master's program in psychology graduated a class composed of 67% females, and 54% of the Doctorate level graduates in psychology were female. The government statistics show that 59% of the professionals employed in the field of psychology were now female.

Over the ten years between 1981 and 1991, the figures show that the number of women inducted into Psi Chi had grown by 7%. Female psychology students receiving Bachelor's degrees increased by 5%, those receiving a Master's degree in psychology increased by

9%, and women receiving a Ph.D. in psychology increased between 1981 and 1991 by 11%. This marks a slight stabilization of the ratios that were so markedly adjusted in the previous decade.

Psychology is not the only field which has experienced a switching gender-type occupational role. In order to put the data on psychology in a more socially relevant context, information was collected on several occupations which have traditionally been perceived as male-dominated; engineering, mathematics, and computer sciences. Data was collected showing the number of females receiving Bachelor's, Master's, and Doctorate level degrees in these fields.

In 1971, 14% of Bachelor's degree students studying computers were female. 10% of the

Master's degrees awarded in computer science went to females, and less than 1% of the Doctorates in computer science went to females. By 1981, 32% of Bachelor's degree students in the computer sciences were female, 23% of the Master's degree students, and 8% of the students receiving a Doctorate level degree in computer sciences were female. Data for 1988 show that these figures had stabilized. Once again, 32% of graduates from the Bachelor's program in computer sciences were female, 26% of the Master's students, and 11% of the Doctoral recipients in computer sciences were female. Across the entire 17 year period from 1971 through 1988, females pursuing a Bachelor's degree in computer science had increased by 18%. During the same period, female graduates of the Bachelor's program in psychology had increased by 26%. Female Master's graduates in the computer sciences were up by 22%; while those in psychology had jumped by 30%. Finally, those women earning a Doctoral level degree in computer sciences had increased over the 17-year period by 10%, compared to an increase of 30% for female Ph.D. recipients in psychology. See Table 2.

The next occupation studied was engineering. In this field the data show that women did not carry even 1% of the field at any level of study in 1971, and by 1978 still composed scarcely more than 1% of the professional field. By 1981, 10% of the Bachelor's degrees in engineering were being awarded to females. Master's degree students in engineering were

comprised of 8% females, and women Doctoral recipients in engineering had increased to 4% of the total. By 1988, 13% of the Bachelor's degree students in engineering were women, 12% of those earning a Master's degree in engineering, and 7% of the Doctoral level graduates in engineering. These increases do not compete with those advances made by women in the field of psychology for the same 17-year period; Bachelor's degrees in psychology earned by women increased by 26%; Master's, by 30%; and Doctorates, by 30%.

Finally, figures for students and professionals in the field of mathematics were examined. In 1971, 38% of the Bachelor's degrees in mathematics were awarded to females. Just under a third, 29%, of the Master's degrees went to females, and at the Doctoral level, 7% of the graduates were female. The figures for 1981 were only slightly increased; 43% of the Bachelor's degree candidates in math were female, 34% of the Master's degree graduates, and 16% of the Doctoral candidates were female. By 1988, the total increase over the preceding 7-year period for the number of females receiving a Bachelor's degree in mathematics was 11%; a master's, 11%; and a 10% increase in females at the Doctoral level. This compares to the percentage of increase in female graduates of psychology over the same 7-year period of; Bachelor's, 26%; Master's, 30%; and Doctoral, 30%. See Table 3.

After compiling the data on numbers of

Table 3
Ratio of Doctorates Awarded in Selected Professions, X Males to 1 Female

	1971	1981	1991
Computers	41.66	9.08	7.92
Engineers	157.17	23.62	13.30
Mathematics	11.89	5.38	4.97
Psychology	3.17	1.32	0.84

Table 4
Professionals Employed in Selected Fields, by % Female

	1970	1981	1991
Computers	12.3	26.9	31.0
Engineers	0.5	2.3	9.0
Mathematics	17.8	22.1	34.0
Psychology	13.2	41.6	59.0

females pursuing different levels of education in particular professional fields, the figures were compared to the percentages of females actually employed in those fields during the same years, and the ratios of male to female employment.

In the computer sciences, during 1970, with 14% of the Bachelor's degrees going to females, just over 12% of those employed in this profession were female. Comparisons for 1981 show that with 32% female graduates from the Bachelor's program, approximately 27% of employed computer scientists were female. By 1988 the number of Bachelor's degrees going to women in computing was 32% of the total, and in 1991, 31% of the employees in computer sciences were female.

Female engineering graduates with a Bachelor's degree in 1971 comprised an insignificant percentage of the total and barely half of one percent in the employment ranks. By 1981 the percentage of women receiving a Bachelor's degree in engineering had reached 10%, compared to just over 2% of the professional field. The figures for 1988 show that 14% of the Bachelor's degrees in engineering went to women, while in 1991 females were 9% of the employed engineers.

Mathematics students earning a Bachelor's degree in 1971 were 38% female, with almost an 18% share of the professional market. Women counted for 43% of the Bachelor's degrees in math awarded in 1981, and at the

same time, just over 22% of the employment in the field. In 1988, 46% of those receiving a Bachelor's degree in mathematics were female, while in 1991, the women employed professionally in the field of mathematics equaled 34% of the total.

Students of psychology receiving a Bachelor's degree in 1971 had a female constituency of 44%, compared to 13% women for employment in the field. In 1981, 65% of those graduating with a Bachelor's degree in psychology were female and more than 41% of those professionally employed were female. Data for 1988 show that 70% of Bachelor's degree graduates were female, while in 1991 59% of the profession was comprised of women. See Table 4.

Discussion

By examining the data it becomes obvious that an increasing number of females are now comprising what have formerly been considered male-dominated professions. The corresponding drop in percentages of males preparing for and entering these occupations is most dramatic for the decade between 1971 and 1981, while the ratios appear to stabilize somewhat during the 1980's. While it can certainly be argued that the women's movement has brought substantially greater numbers of females into the professional world, this does not explain the disproportionate ratios of male to female participants in these fields that the

data uncovers. Stable ratios of male to female population counts by the U.S. Census Bureau consistently reflect only a very small bias toward females, generally at 52% of the population at large. With such similar population polls to draw from, the resulting impetus of rapidly shifting sex ratios in these selected fields as women enter the professions becomes a source of serious inquiry. What is going on here? Not only must we ask where our decreasing representation of males is going, we must also wonder why they are choosing not to enter these formerly highly prestigious, male-dominated professions.

J.S. Croxton, et. al. (1989) found that the fit between gender-role characteristics and occupational stereotype is a significant factor in considering likelihood of success in a particular career. Perhaps males are not as flexible as females in assimilating androgynous roles. Traditionally, our culture accepts greater flexibility of gender-identity in females than in males, which may contribute to the greater willingness of females to enter occupations in

which the sex composition would suggest a better fit for persons of male gender-role characteristics. On the other hand, because females in the labor force have historically been devalued in prestige and compensation when compared with their male counterparts, women would have nothing to lose by competing with males in the stereo typically male-dominated professions. Males, however, may perceive constituency in an occupation increasingly identified with females as undesirable economically and as an uncomfortable fit with their own gender identity. While earnings, per se, are not the topic of inquiry in is study, they do reflect stereotypical standards of the perceived value of labor by males versus females. In 1971, female psychologists earned a mean salary of \$16,833 while the male psychologist earned \$19,294. By 1989, a female member of the professional workforce was earning \$26,052 compared to the \$40,820 of her male counterpart. As the sex composition of an occupation becomes more feminized, it is fair to assume that the average earnings across the

Table 5
Average Annual Earnings, by Selected Professions

	1979	
	Males	Females
Computers	*	*
Engineering	\$14,254	*
Mathematics	18,700	15,277
Psychology	19,294	16,833
	1979	
Engineering	28,830	21,965
Mathematics	29,910	20,934
Psychology	25,679	18,976
	1989	
Engineering	40,768	34,944
Math & Computing	38,376	31,408
Psychology	40,820	26,052

field consistently drop to meet those of women currently employed in the occupation. Should present ratios of sex-composition in psychology continue to show female bias, the profession as a whole is likely to experience devaluation. Research by Jaffee (1989) shows that "the female sex composition of occupations is negatively related to median earnings" (Treiman and Hartmann, 1981). See Table 5.

Another question raised by the data concerns the disappearance of professional level, female Doctoral graduates when compared to the percentage of women actually employed in the selected professions. In a study on the managerial gender gap, K. Cannings (1991) proposes that the lack of visibility of women in the higher paying positions has three causes; the care of household chores, status as primary caregiver to the children, and the social demands of the careers of their spouses. Cannings refers to this as the "social model," so called due to the variables that impact family structure and organization on the careers of both men and women. Those females who have completed Doctoral level studies and yet have not entered the professional employment ranks may be due to the fact that a significant amount of household commitments must still be balanced with the pursuit of a career.

Although women have increasingly opted to delay childbearing in order to avoid external constraints on the progress of their careers, they remain liable to other effects of the social model. A woman is more likely to yield her career options to those of her spouse, as described in the "dream versus drift" theory (Williams, 1987, p. 370). Males are socialized to actively pursue a goal, while females have traditionally been socialized to "drift" until they have aligned themselves with a male, to whom they will accommodate their own dreams. This may partially explain the absence of educationally qualified young women from these professional fields.

Cannings (1991) also cites gender bias as

a continuing variable in employment practices. Despite the fact that a young woman has a Doctoral degree in her field, women of childbearing age are more likely to confront resistance and personal bias in hiring, as they are deemed more likely to require family leave, or to move away than is their male counterpart. This bears on the statistical significance that job experience has over education, as well. However, because young men and women who seek entry into these professions are equally inexperienced, the numbers lend support to the contention that these "invisible," highly-educated women are being excluded from employment due to the effects of models such as Cannings' and to remaining biases in the culture. See Table 2

The fact that, of the professions studied, women in psychology have possibly achieved the highest consistency between educational preparation and employment may be attributable to the gender-role fit of females and the perception of psychology as a field relying heavily on interpersonal studies and relationships, as well as the impression of clinical psychology as a "helping" profession. While it is true that psychology is a science based on the individual, women entering the profession may find that they are being shunted to the more affiliative roles in the field, such as clinical psychology and teaching positions, rather than those designated as industrial/organizational, experimental, or neuropsychological.

In an attempt to address the question of decreasing male ratios in preparation for and participation in professions formerly dominated by males, the concept of a fit between socialized gender-identity and the sex composition of the occupational field as it has changed must be acknowledged. While potential male professionals may certainly base a degree of their decision to pursue or not to pursue a particular career on economic factors, it is interesting to note that men consistently earn more than women, regardless of the sex com-

position of the occupation. Returning to Jaffee's study (1989) on gender inequality in the workplace, men are more likely than women to hold positions of rank and authority regardless of the sex composition of the occupation. Professions are typically segregated organizationally, so that males enjoy more access to job rewards such as advancement and higher rates of pay. Males choosing to enter professions which are becoming female-dominated, in a reversal of historical demographics, conceivably stand an even greater opportunity for job rewards, due to fewer male competitors in the profession. The concept of gender-identity as it fits in comparison to the gender-role characteristics of an occupation thus is left to answer for the marked withdrawal of males from formerly male-dominated professions as they become increasingly composed of females.

In conclusion, our research data verifies that the ratio of males choosing to enter occupations formerly identified as male-dominated has decreased dramatically over the past two decades, and particularly during the 1970's as women entered these professions in ever greater numbers. The answer to what lies at the base of this shift in sex-ratios for the professions remains incomplete, although evidence clearly suggest gender-role identification between the individual and the occupation as a viable response to the inquiry. Particularly in the field of psychology, which has traditionally been perceived as a "helping" profession, women are eclipsing men as constituent members of the field. This is closely correlated to the affiliative gender-role characteristics associated with females, and may disclose, upon further investigation, that the internal organizational categories of psychology are filled in a gender-based manner, as well. Research into the "lost" contingency of females who have achieved the highest levels of educational preparation in their fields yet who do not show up in the professional employment ranks is also worthy of further inquiry. Why do these women put so much time, money, and effort into earning a

Doctoral degree, only to abstain from entering the workforce? Investigation into the implications of female-dominated professions in areas formerly dominated by males raises important questions, as well. What does the changing sex-composition of our professional occupations mean to the economy, and to the status of the stereotypical gender-role characteristics which accompany and help to form them? Hopefully, the changing paradigms in gender-role fit between individuals and occupations will encourage males and females to assimilate roles that are less restrictive to either sex.

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Acknowledgements

We gratefully acknowledge the guidance and inspiration of Dr. Patrick Slattery, our professor and friend. We would also like to thank the staff of our National Psi Chi office for their support and encouragement, as well as Ms. Donna Linna, for her initial involvement in gathering information.

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Landing the Job ...

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