

INSTITUTIONAL DEMAND-SIDE DISCRIMINATION AGAINST WOMEN AND THE HUMAN CAPITAL MODEL

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ABSTRACT

Human capital theorists claim that the gender wage gap is due in large part to supply-side factors. They base this claim on empirical evidence. This paper challenges the interpretation of that empirical evidence. It argues that that interpretation is based on an assumption of a simplified production system that rules out any consideration of institutionally-based demand-side discrimination. It argues that insiders have an incentive to choose production techniques that benefit themselves, and that their choices will bias measures of human capital in their favor.

The paper then considers a specific case study – the undergraduate U.S. academic market – where such institutionally-based demand-side discrimination exists, and offers an institutional change which could work to offset it.

KEYWORDS

Human capital, discrimination, academic jobs, institutions, insiders

It is well known that there is a continuing wage gap between women and men.¹ There are a number of competing explanations for this. Human capital theorists, following the approach established by Jacob Mincer (1962) and Gary Becker (1981), argue that the gender wage gap is due in large part to supply-side factors. Specifically, they claim that women's expected intermittent work pattern leads women to invest less in their own human capital since their expected returns will be lower, and that the intermittent work pattern erodes their human capital, reducing their earning capabilities. Further, employers, aware of this erratic labor force attachment, offer lower salaries to women, since women will, on average, be less productive because of their intermittent labor force attachment. Where human capital theorists acknowledge significant discrimination may exist is

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at the pre-market level – on the supply side. They are unwilling to concede that significant demand-side market discrimination exists.

Feminist scholars, such as sociologist Paula England (1992), philosopher Sandra Harding (1995), and economists Michèle Pujol (1992) and Julie Nelson (1993), have argued against this human capital view of discrimination, questioning the assumptions and value systems that form the unacknowledged basis for this work. They argue that the central issues of discrimination are systematically excluded by the conventional approach taken by most economists. This paper argues that the feminists are right, and that the human capital approach to discrimination has ruled out, without discussion or consideration, an important element of market discrimination; we call this element institutional demand-side discrimination.

To develop our arguments this paper will first examine the human capital theorists' reaction to the feminists, as represented by Sol Polachek (1993).² We will then present an alternative institutional demand-side view of discrimination that challenges the human capital model. We will argue that the human capital model systematically excludes the possibility of institutional demand-side discrimination in its failure to examine the adoption of particular production practices that favor insiders at the expense of outsiders. Then, the situation of women academics is explored as an example of the type of institutional demand-side discrimination presented here. Finally, a proposal is presented that would somewhat offset that institutional demand-side discrimination in academic labor markets.

POLACHEK'S PUZZLE

Polachek (1993) provides a thoughtful presentation of the mainstream position. He argues that when one considers the empirical evidence, 90 to 95 percent of the demand-side discrimination is explained away by the human capital characteristics of women. At most, there are only small amounts of demand-side discrimination. The empirical evidence is much in dispute, and work by Myra Strober and Aline Quester (1977), Myra Strober (1990), Marcia Bellas (1993) and Shulamit Khan (1993) has shown that aspects of it are ambiguous and inconsistent with the human capital view. In this paper we do not deal with these empirical issues. Instead, we argue that *even if* the human capital evidence is representative of the empirical reality, that evidence does not support the conclusions that human capital theorists often attribute to it.

Thus, our argument deals with the one aspect of the human capital empirical evidence that seems to be least in dispute – that one of the most important of the characteristics responsible for women's lower earnings is the intermittent structure of women's labor market participation. The human capital argument is that that intermittent participation seriously erodes their human capital, making women far less productive than their

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male counterparts who are not characterized by intermittent labor force participation.

Feminists are unsatisfied with this conclusion – a fact that puzzles Polachek. He writes:

The human capital model explains upwards of 90 percent of the male–female wage gap, a far greater explanatory power than any other model (recall that occupational segregation explained at best 35 percent). Yet of all explanations for male–female differences the human capital model appears to be the most subject to feminist criticism. I am not sure why.

(Polachek 1993: 10)

He suggests three reasons why feminists find the human capital model suspect: (1) that the human capital model blames women; (2) that demand-side discrimination is not considered; and (3) that the model predicts a narrowing in the gender wage gap that has not, in fact, occurred.

He dismisses the first as normative – the human capital model is a positive model that assigns no fault. It simply identifies where the cause of the wage differential is – and that, in his view, is clearly on the supply side. In some relationships women are discriminated against – they bear more of the child-rearing responsibilities and move more to be with their spouses. This can be seen as “societal discrimination” within the household. True, some demand-side statistical discrimination may exist, as argued by Peter Kuhn (1993), Edward Lazear and Sherwin Rosen (1990) and Elizabeth Landes (1977), when it is efficient for firms to discriminate based on intermittent work patterns of women. Such discrimination, however, is not empirically important and is also a demand-side reflection of the supply-side problem of intermittent labor force participation. In this case, it would be picked up by the human capital model. Polachek similarly dismisses the third empirical objection, noting that, when the empirical work is done correctly, there is strong evidence of wage convergence over the 1980–90 period. Thus, he concludes that “skepticism concerning the human capital model is clearly unwarranted.”

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In this paper we argue that Polachek is wrong and that skepticism concerning the human capital model is clearly warranted. Specifically, we argue that *the human capital model systematically excludes the possibility of institutional demand-side discrimination* by implicitly assuming away decisions about production practices. Thus, even if we accept all of Polachek’s arguments, his conclusion that the human capital explanation of the

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discrimination against women is found on the supply side does not necessarily follow. We also argue that the issue is, as Polachek suggests, an underlying methodological issue, which, if accepted, undermines far more in the human capital approach than simply its conclusion about discrimination against women.⁵

The reasoning behind our argument, however, is *mainstream* reasoning: in fact it is straight out of Marshall's *Principles* (Alfred Marshall 1920). There, he argued that it is impossible to tell whether price is set on the demand side or the supply side. To explain why, he made his famous scissors analogy. He argued: just as it is impossible to determine which blade of the scissors is doing the cutting, so too is it impossible to tell whether it is the supply side or the demand side that is price determining. That argument can be extended to discrimination. The male-female wage gap occurs because of a combination of supply side and demand-side forces and it is empirically impossible to distinguish which is doing it simply by observing the results of market interaction. The reality is that the human capital-based empirical work does not *show* that discrimination is a supply-side phenomenon; empirical researchers have simply *concluded* that because of implicit assumptions they have made.

HUMAN CAPITAL THEORY'S SIMPLIFIED ANALYSIS OF PRODUCTION

If one were to summarize our argument against the human capital approach, it would be that it does not deal with production institutions in a satisfactory way. It makes them appear technological when, in fact, they are social and institutional, as well as technological. By obscuring the social and institutional nature of production, and the dependence of human capital measures on decisions made about production, the human capital approach obscures an important aspect of demand-side discrimination that can be built into the chosen productive technology.

In the human capital approach a simple technologically determined production function is assumed - no analysis is devoted to how production is structured, how technologies are chosen or what the efficiency of alternative structures of production not chosen might be. Production in the human capital model is pictured as a simple unidimensional activity.

These limitations of production are built into the human capital model since talking about unambiguous measures of human capital only makes sense in such a limited productive system. In any more complicated production system it would be impossible to use a unidimensional measure, human capital. Instead, one would have to use a measure contingent on production technology. Specifically, to say that someone's human capital exceeds someone else's is an enormously strong statement that cannot be made on the basis of empirical estimates of existing wage differentials. For

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that to be true the measure of relative human capital must also hold for all other relevant production techniques that could be employed.³

Some examples may help to clarify the argument. Suppose under existing technology Garcia's human capital is valued at \$300,000 per year and Lee's human capital is valued at \$50,000 per year. Can one therefore say that Garcia has more human capital than Lee? Under existing technology, yes. But what if another, equally efficient, technology exists that values Lee's human capital at \$250,000 and Garcia's human capital at \$100,000 per year? Then, under this alternative technology the rankings would be reversed. With these two production technologies yielding different measures, an unambiguous ranking of these individuals' human capital is impossible. Ranking reversal can occur as production technology changes; the greater the number of relevant production technologies, the less reliance can be placed on any empirical measure based on existing production technologies.

Consider a second example. Jones has the same years of experience in the job and in the industry, as well as the same schooling, as Smith. Two, equally efficient, technologies exist, one that requires individuals to work full-time and one that requires all individuals to work part-time. Because of Smith's home situation, Smith is more productive if working part-time than if working full-time, while Jones is equally productive in the two technologies. If the industry managers choose the full-time technology, then Jones's human capital will be more valuable than Smith's, despite having "objectively measured" human capital characteristics that are the same.

As a final example, consider a nonhuman resource, coal. Through the 1970s and 1980s as U.S. environmental standards were tightened, the relative value of high sulfur coal fell. Then in the 1990s the standards were further raised, requiring a shift in technology that processed the residual from burnt coal so completely that it didn't matter what type of coal was used. The relative value of high sulfur coal was increased.

The point of the examples is the following: As one increases the number of alternative production technologies and alternative characteristics descriptive of individuals, the potential for ranking reversals under alternative technologies increases enormously. In any multiple production technique model a ranking of human capital would need to be a ranking contingent on the technique chosen. Individual A's human capital can be said to exceed individual B's human capital unambiguously only if the valuation of A's characteristics exceeds the valuation of B's characteristics in *all* relevant productive technologies. When marginal productivities depend on the production technologies chosen, the possibility of institutional demand-side discrimination exists. Such discrimination exists if the chosen production technique is one that values a group's characteristics lower than would some other feasible technique. The implicit ruling out of such a potentially important source of discrimination is an example of the

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normative nature of human capital theory about which feminists such as Harding have complained.

INSIDER RENT SEEKING AND CHOICE OF TECHNIQUE

The argument here involves more than simply the possibility of other production technologies not considered by human capital theory. A second part of our argument is that production technologies, that is, the technical and social relations of production, are not determined exogenously. Instead they are strongly influenced by insiders along lines suggested by Assar Lindbeck and Dennis Snower (1984) and by the neoclassical political economy arguments about generalized rent-seeking (David Colander 1984). Production technologies are chosen to maximize the rent of individuals who are currently involved in the production process, the so-called "insiders." Alternative production technologies that are as, or even more, efficient than existing technologies will not be chosen if they involve a depreciation of existing "insiders'" human capital, and a placing of a higher valuation on "outsiders'" human capital.

If this argument is true, then empirical measures of human capital based on data gathered from existing real-world markets – the bread and butter of the human capital empirical approach – will be *consistently biased toward increasing the human capital measure of insiders relative to the human capital value of outsiders*. To the degree that insiders choose techniques to benefit themselves (and economic theory would predict that they do so whenever they can) human capital measures a combination of technological choices and choices reflecting insider rent appropriation. They are biased measures that maximize the valuation of insiders and minimize the valuation of outsiders. Separating out the various aspects of these measures is a complicated statistical problem that, to our knowledge, no human capital advocate has attempted.

One answer to our insider bias argument is that competition will force producing units to choose the "most productive" technique. Thus, while our "choice of technique" argument is correct, a competitive system has a way of limiting the bias in the choice of technique.

We have four responses to this claim. First, yes, competition will limit the arbitrary choice of techniques to some degree, but real-world competition is itself limited; there is enormous competitive slack in the system, so that production units are not forced to use the most productive techniques. Second, even if competition did drive the system to the most efficient production technique (assuming there were one), the argument still holds for all remaining equally efficient techniques. Given the amount of uncertainty about the productivity of various techniques and rules, numerous techniques exist for which a reasonable argument can be made that they are

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equally efficient. Third, real-world production is characterized by significant learning by doing. This creates a nonlinearity in the system and makes it seem that existing techniques are superior to alternative techniques, when in fact their "superiority" may only be a reflection of their present use. These nonlinearities mean that there is a path-dependent aspect to the choice of production techniques and that all options will not be considered even in a competitive economy.⁵ Fourth, with imperfect capital markets, a competitive system will tend to favor existing techniques since the others will be highly risky, and will involve payoffs only in the long run.

Because of insiders' influence on choice of production techniques, *the human capital measures associated with existing production techniques cannot be used as an unambiguous or unbiased measure of an individual's human capital.* When one observes two individuals being paid a different amount, one cannot escape the question: Is the lower-paid person being paid less because, objectively, he or she is less productive, or is the person being paid less because he or she has less direct influence on the institutions that choose the technology?⁶ That is, have existing workers created an institutional structure that shares the institutional productive rent among insider workers? This question must be answered before one can rule out institutional demand-side discrimination. The human capital approach has not considered the problem of making a judgment about the inherent productivity of different human capital characteristics because it implicitly assumes the issue away with its simplistic assumptions about production.⁷

Our point is simple but devastating to the standard human capital argument against the existence of demand-side discrimination. Even if the story conveyed by the human capital model is true, empirical studies based solely on earnings and input characteristic data cannot be used to either refute or accept it. To be convincing those empirical studies must be supplemented with a detailed study documenting that alternative equally efficient production technologies that change human capital measures are impossible. Only when one has the necessary institutional data can one come to a tentative conclusion about whether institutional demand-side discrimination is occurring.

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The above argument suggests that a detailed institutional knowledge of alternative production techniques is required to make any judgment (and judgment it must be) about the existence or nonexistence of institutional demand-side discrimination. One area where the authors of this article have such institutional knowledge is in the U.S. undergraduate college education industry. In this final part of the paper, we will use that industry to

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compare our multiple technique view of demand-side discrimination with the human capital view.

The human capital view of why U.S. female college professors on average are paid less than U.S. male college professors is that the value of female college professors' human capital is lower. The most empirically valid of the reasons supporting this view is that women withdraw from the full-time labor force for a period of time for child bearing and rearing, thus depreciating their human capital.⁴

Our multiple techniques view of why U.S. female college professors on average are paid less than U.S. male college professors is quite different. It is that the women's lower pay reflects *systematic demand-side institutional discrimination* because the production techniques chosen are those that place a lower value on women's human capital characteristics than on men's. Given the nature of existing reproductive technologies, and given the nature of the division of labor within the family, women have certain characteristics that, on average, are different than men's. Specifically, in the child-bearing-age group women face greater demands on their time and energy than do men. As evidenced in the data, most women in tenure track positions do work full-time, but the dual pressures they face put them at a substantial disadvantage with respect to their male counterparts. Further, we do not have good data on the number of women who leave tenure track positions permanently as a result of the low valuation current institutions place on intermittent and part-time work.

The multiple techniques approach allows for the possibility that current academic institutions are designed to place significant costs on women for intermittent work, not because such withdrawals reflect an inherent inefficiency, but simply because, by placing such costs, insiders can appropriate higher rents to themselves. This institutional demand-side discrimination requires no overt action by insiders; it is built into existing institutional rules and can be carried out by simply following the rules.

If true, the argument would imply that U.S. colleges and universities have insisted on maintaining existing production technologies and have not been flexible in accommodating the changing characteristics of their labor force because to do so would reduce insiders' human capital.⁵ Instead they build in teaching technologies that systematically value intermittent work at a low level, not because of any inherent efficiency of nonintermittent work, but because doing so increases the value of insiders' human capital – insiders who happen to be largely male.

The empirical question at issue in deciding between the two explanations is: do the skills one needs in teaching undergraduates, and in conducting research that strengthens one's teaching at an undergraduate institution – the relevant human capital – significantly deteriorate because of intermittent work experience? Our view of this empirical question for the teaching of economics in the United States is clearly on the side of institutional

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demand-side discrimination. As both of us have argued elsewhere (David Colander and Arjo Klamer 1987; David Colander and Reuven Brenner 1992; and Joanna Woos 1992), much of U.S. graduate economics education, and much of the research required of U.S. college faculty, are irrelevant to undergraduate teaching – thus there is little human capital acquired in graduate school to depreciate. Furthermore, because intermittent teaching avoids burnout (which is one of the arguments for sabbaticals), it can even be argued that intermittent work experience enhances teaching productivity.

A PROPOSAL FOR AN ALTERNATIVE PRODUCTION TECHNOLOGY FOR COLLEGES

The above discussion was highly abstract; it has, however, applications to policy issues that are currently being debated on U.S. college campuses. The particular institutional structure that we believe is most responsible for institutional demand-side discrimination in the United States is the interpretation of the institutional tenure clock and the explicit or implicit limit imposed on part-time work by colleges' hiring procedures. The existing institutional realities are that almost all initial tenure track academic positions are full-time, meaning they require an enormous time commitment in the first seven years on the job. While some tenure track part-time work is condoned, it is not encouraged, but rather strongly institutionally discouraged. It is paid less and part-timers are treated as second-class citizens. This means that the production technique embodied in this institutional structure requires an enormous time commitment at precisely the time women who choose to have children have a similarly enormous time commitment to the family. Now, one could argue that this reflects discrimination within the household – that it involves a woman's partner not taking a fair share of the work. This certainly enters in, but an alternative institutional educational structure could improve women's relative position even if no change occurred within the household. That is because the current institutional structure works to keep a subgroup of women out of jobs that they would otherwise be highly qualified for. Thus it acts as a type of institutional discrimination against them.

One way to eliminate this institutional discrimination is to create a new alternative track toward tenure that would make up some percentage, say 50 percent, of each department's lines, and a subsequent doubling of the time required to make a tenure decision. This alternative track would be *institutionalized half-time positions* in that the teaching and research requirements that would normally be associated with a position would be cut in half and the pay and benefits similarly would be cut in half. The period of time allowed for a tenure decision would be measured by the time actually worked. Thus, if an individual worked half-time for eight years, that would count as four years on the tenure clock. This alternative track would be less

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discriminatory for individuals who have major, outside time commitments in their first ten to fifteen years at their colleges, and who therefore would find it difficult or unattractive to fit into the present system. Further, by offering both women and men the same revised work arrangements, men could take on an increased share of household work, thus enabling their spouses to put additional time, energy and creativity into their work outside the home. Individuals who wanted to work full-time during this initial time period would find these positions far less attractive. Such an institutional change would make an enormous difference in the gender composition of college faculties and, we believe, increase the quality of teaching.¹⁰

The above institutional change would, in our view, result in a system at least as productive in teaching and research as the current U.S. system, but one more conducive to hiring and retaining female professors. If the change were instituted, we believe more women would choose academic careers upon completion of their doctorates and more would be successful in moving up the ranks, precisely because it would allow them a way of combining work and family goals.

CONCLUSION

There is much more to be said about discrimination, both inside academia and outside. This short paper is, at most, suggestive that human capital theorists need to take a closer look at the limitations of the assumptions underlying their model before they use available data to draw conclusions about real-world phenomena. We have outlined here a different reason for the presence of a gender wage gap, that of institutional demand-side discrimination that favors insiders at the expense of outsiders. Finally, we have suggested an alternative production technology for U.S. academic institutions, allowing workers to choose a part-time tenure track academic post. We think that this technology will result both in productive teaching and research and in academic institutions greatly improving their recruitment and retention of women faculty.

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NOTES

- * Joanna W. Woos was on the Middlebury College Department of Economics' faculty from 1988 to 1995; she has temporarily exited the academic labor market.

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by choice in large part because of institutional characteristics of academic institutions. Both authors would like to thank Marianne Ferber, Nancy Wulwick, Richard Cornwall and Sol Polachek for comments on an earlier draft.

- ¹ This gender wage gap was first systematically explored by Barbara Bergmann (1974) in her path breaking work developing the occupational segregation model.
- ² A close critique of human capital theory is beyond the scope of this paper. For such a comprehensive review of explanations of gender wage differences, examining human capital theory and its competitors, see Myra Strober (1990).
- ³ Our argument here is consistent with feminist philosopher Sandra Harding's (1995). She argues that conventional research techniques are unable to disentangle the types of normative assumptions and judgments that underlay the construction of the model from the model implications themselves. She states:

When our hypotheses appear rejected by "the data," it is always reasonable to ask whether it is our explicit hypotheses or the implicit background beliefs with which they are enmeshed – assumptions about the way we have posed the problem, the adequacy of central concepts, the suitability and functioning of our testing instruments, the level of evidence required, how we interpret the data, etc. – that are at fault.

(Harding 1995: 12)

- ⁴ Rhonda Williams has pointed out to us that the argument we are making in some ways parallels the well-known Cambridge controversy. There, a given price of capital, that is, the interest rate, results in one production technique being more efficient in the production of a certain good. A change in the interest rate can lead to a rank reversal, wherein a different technology is superior in production of that same good. Here, the adoption of a particular technology would alter the productivity of human capital, which would in turn alter the wage paid, and hence the valuation of the same human capital.
- ⁵ For a discussion of the relevance of nonlinearities and path dependencies, see Paul David (1975) and Brian Arthur (1984).
- ⁶ No normative judgment is being made here; the question of who deserves what is a quite separate matter.
- ⁷ The above criticism is not specific to human capital theory; it is as applicable to all neoclassical marginal productivity theory. What human capital theory adds to marginal productivity income distribution theory is a deeper analysis of the inputs.
- ⁸ Other reasons have been suggested. Examples include the notion that women obtain less of the type of education that yields high returns and that women obtain initial jobs that have higher starting salaries, but lower on-the-job training opportunities. These reasons, in our view, have been effectively shown to be irrelevant. See Myra Strober (1990), Paula England (1992), Marcia Bellas (1993) and Shulamit Khan (1993).
- ⁹ The term, production technologies, should be interpreted broadly. They include the entire set of explicit and implicit work rules that play a role in who advances and who does not.
- ¹⁰ We have proposed this to a number of institutions that are concerned about the low number of women in their departments. One such department was the economics department at Middlebury College, where there were no women on the economics faculty when we made our proposal. It was simply ignored by the administration – in part, we think, because the United States national rankings of colleges are lowered when colleges exceed some minimum number of part-time faculty positions.

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REFERENCES

- Arthur, Brian. 1994. *Increasing Returns and Path Dependence*. Ann Arbor: University of Michigan Press.
- Becker, Gary. 1981. *Treatise on the Family*. Cambridge: Harvard University Press.
- Bellas, Marcia I. 1995. "Faculty Salaries: Still a Cost of Being Female?" *Social Science Quarterly* 74(1): 62-75.
- Bergmann, Barbara. 1974. "Occupational Segregation, Wages and Profits When Employers Discriminate by Race or Sex." *Eastern Economic Review* (Apr.-Jul.): 103-10.
- Colander, David (ed.). 1984. *Neoclassical Political Economy*. Boston: Ballinger Press.
- and Reuven Brenner (eds.). 1992. *Educating Economists*. Ann Arbor: University of Michigan Press.
- and Arjo Klamer. 1987. "The Making of an Economist." *Journal of Economic Perspectives* 1(2): 95-111.
- David, Paul. 1975. "Clio and the Economics of Qwerty." *American Economic Review* 75: 332-7.
- England, Paula. 1992. *Comparable Worth: Theories and Evidence*. New York: Aldine de Gruyter.
- Harding, Sandra. 1995. "Can Feminist Thought Make Economics More Objective?" *Feminist Economics* 1(1): 7-32.
- Johnson, George E. and Frank P. Stafford. 1974. "The Earnings and Promotion of Women Faculty: A Comment." *American Economic Review* 64(6): 888-903.
- Khan, Shulamit. 1993. "Gender Differences in Academic Career Paths of Economists." *American Economic Review* 83(2): 52-6.
- Kuhn, Peter. 1993. "Demographic Groups and Personnel Policy." *Labour Economics* 1(1): 49-70.
- Laudes, Elizabeth. 1977. "Sex Differences in Wages and Employment: A Test of Specific Capital Hypothesis." *Economic Inquiry* 15(4): 523-38.
- Lazear, Edward and Sherwin Rosen. 1990. "Male-Female Wage Differentials in Job Ladders." *Journal of Labor Economics* 8(1): S106-23.
- Lindbeck, Assar and Dennis Snower. 1984. "Involuntary Unemployment as an Insider-Outsider Problem." Institute for International Economic Studies, Stockholm, Seminar Paper no. 282.
- Marshall, Alfred. 1990. 8th edn. *Principles of Economics*. London: Macmillan.
- Mincer, Jacob. 1962. "Labor Force Participation and Married Women." in NBER, *Aspects of Labor Economics - A Conference of the Universities*. New York: Arno Press.
- Nelson, Julie A. 1993. "The Study of Choice or the Study of Provisioning? Gender and the Definition of Economics." in Marianne A. Ferber and Julie A. Nelson (eds.) *Beyond Economic Man: Feminist Theory and Economics*, pp. 23-36. Chicago: University of Chicago Press.
- . 1995. "Feminism and Economics." *Journal of Economic Perspectives* 9(2): 131-48.
- Polachek, Sol. 1993. "Human Capital and the Gender Earnings Gap: A Response to Feminist Critiques." Paper presented at the Out of the Margin Conference. Forthcoming in proceedings volume.
- Pujol, Michèle. 1992. *Feminism and Anti-Feminism in Early Economic Thought*. Aldershot, U.K.: Edward Elgar.
- Strober, Myra H. 1990. "Human Capital Theory: Implications for HR Managers." *Industrial Relations* 29(2): 214-39.
- and Aline O. Quester. 1977. "The Earnings and Promotion of Women Faculty: A Comment." *American Economic Review* 67(2): 207-13.
- Woos, Joanna W. 1992. "From Graduate Student to Liberal Arts Professor." in David Colander and Reuven Brenner (eds.) *Educating Economists*, pp. 193-200. Ann Arbor: University of Michigan Press.