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Ann Mari May
University of Nebraska - Lincoln, amay1@UNL.edu

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''Sweeping the Heavens for a Comet'': Women, the Language of Political Economy, and Higher Education in the United States

Ann Mari May

Abstract

The importance of increased levels of education in improving the status of women throughout the world is well established. Higher levels of education are associated with lower birth rates, higher incomes, and greater autonomy for women. Yet, women's struggle to have a voice in higher education has been fraught with difficulties in the US and worldwide, particularly in overcoming widely held perceptions that limit their entrance into certain academic fields, tenured positions, and elite universities. This essay examines the role political economy has played in providing narratives that rationalize women's limited participation in higher education. By examining the representation of women in the academic culture of the nineteenth- and twentieth-century US, we can perhaps better understand women's struggle to obtain an authoritative voice in higher education worldwide.

Keywords: women, history of higher education, political economy, gender and science

> The history of men's opposition to women's emancipation is more interesting perhaps than the story of that emancipation itself.
>
> — Virginia Woolf, *A Room of One's Own*

> It may be that universal history is the history of the different intonations given a handful of metaphors.
>
> — Jorge Luis Borges, ''The Fearful Sphere of Pascal''

Introduction

The year 2002 marked the first time in history that more American women than American men received doctorates from US universities

(Thomas B. Hoffer *et al.* 2003). This momentous event represents a significant milestone in women's pursuit of an authoritative voice in institutions of higher education — a struggle that continues today in all industrialized countries, even those considered progressive in terms of gender equity.[1] The increase in the percentage of doctoral degrees going to women in the US over the past thirty years has not, however, produced a proportional increase in the representation of women as faculty across institutions, ranks, or disciplines (Patricia Albjerg Graham 1978; Jerry A. Jacobs 1996). While women held 41 percent of faculty positions in baccalaureate institutions in 2003–2004, they constituted only 26 percent of faculty in the top twenty research institutions (Cathy A. Trower and Jared L. Bleak 2004: 5). Men still outnumber women in full-time faculty positions at doctoral institutions by a margin of two to one, and women are less than half as likely as men to be full professors (John W. Curtis 2005: 28).

As women enter the academic profession, the bridge seems to be collapsing beneath their feet. Today over two-thirds of all faculty in the US are in part-time or full-time positions off the tenure track — so-called ''contingent faculty'' (Curtis 2005: 25). Less than two-fifths of all US women faculty are in tenure-track positions and a full 22 percent of full-time women faculty members are non-tenure track (Judith Glazer-Ramos 1999: 50). While 70 percent of full-time male faculty members have tenure, only 47 percent of full-time female faculty members have it (Curtis 2005: 28). Most sobering perhaps, the percentage of women with tenure has remained virtually unchanged for the past two decades.[2]

As university students and later as faculty, women are overrepresented in the areas of the humanities, education, and the social sciences and underrepresented in professional fields, such as engineering, and many of the disciplines constructed as ''hard sciences,'' such as physics. In 2002, US women received only 18 percent of doctorates in engineering and 16 percent of doctorates in physics and astronomy while receiving 66 percent of doctorates in education. In the social sciences, women received 55 percent of total doctorates, but they received only 28 percent of doctorates in economics and 60 percent of doctorates in anthropology and sociology (Hoffer *et al.* 2003). While US women working outside of academia earn around 87 percent of what men earn, women at doctoral institutions earn only 80 percent of men's earnings — the same proportion that they have earned since data was first collected in the 1970s (Curtis 2005: 28). Higher education today continues to be a sex-segregated workplace in which women disproportionately occupy the lowest ranks, at the least prestigious institutions, with the lowest pay and the least job security.

Although the paucity of women faculty members in US higher education has now developed enough recognition to merit the industrial metaphor of a ''leaky pipeline,'' it had nonetheless failed to incite the American public until Lawrence H. Summers, the former president of Harvard Uni-

versity, offered his thoughts on the issue. Speaking before the National Bureau of Economic Research (NBER) conference on diversity in science and engineering, Summers (2005) offered three possible hypotheses for these ''missing women'' in ''high end'' sciences: choice (''the high-powered job hypothesis''), biology (''different availability of aptitude at the high end''), and bias (''different socialization and patterns of discrimination in a search''). Of the three, Summers found the first two the most compelling. According to Summers, ''the combination of the high-powered job hypothesis and the differing variances probably explains a fair amount of this problem'' (2005). A firestorm of controversy erupted not five minutes after he spoke. While most critics took exception to what they saw as Summers's ''shoddy'' theorization of women's failure to thrive in scientific realms of academia, few objections were raised about his assertions that women ''choose'' not to take or hold these positions. Discussions following Summers's speech reinforced choice as a limitation women might overcome in their career paths by making other choices at home.[3]

In her subsequent article entitled ''Is Your Husband a Worse Problem Than Larry Summers?,'' Linda Hirshman proposed that the underrepresentation of women in higher levels of government and business was also due to choice, in what she refers to as the ''opt-out revolution'' (Hirshman 2005b). However, rather than remaining agnostic, as Summers had, about the division of labor within the home that might perpetuate the underrepresentation of women in these jobs, Hirshman takes a more assertive tone arguing that the real ''glass ceiling'' is at home. Quoting Judith Stadtman Tucker, Hirshman argues: ''Women will take on the worst bastard in the world rather than ask their husbands to help out.''[4] Hirshman's advice to women? Make better choices and advocate for yourself, both at home and in the university.

As the controversy over Summers's and Hirshman's recent comments reveals, by suggesting that a conflict still exists between women's commitments to the home and to their professional potential, the ''Woman Question'' maintains its vitality, and women's role in US higher education continues to be contested terrain in the twenty-first century. It is worth contemplating why, despite significant increases in the percentage of doctoral recipients over the past thirty years, women have in many ways failed to prosper as faculty in the male-dominated environment of higher education in the US. Answering that question requires an understanding of how gender and political economy function in the process of knowledge production and, in turn, how political economy has justified women's limited participation.

The ongoing underrepresentation of women in the upper echelons of academia suggests that we must examine the institution of higher learning as we would any other institution — as a system that distributes power and not merely a meritocracy where the best ideas simply dominate.

Understanding the ''Woman Question'' in the twenty-first century requires that we understand how institutions — even institutions of higher learning — distribute power, how the social construction of gender is used to signify and maintain power relationships, and how, as Joan Wallach Scott calls them, ''culturally available symbols'' serve as the mechanisms that articulate power (1996: 167).

Given the preeminence of economic institutions today, it is perhaps not surprising that these culturally available symbols emerged from nineteenth-century political economy. As the dominant institution in society, the market system and its proponents, political economists, have been instrumental in shaping our understanding of a variety of social issues. Whether indirectly through descriptive tropes used outside of economics to frame women's place in society or directly by creating metaphors that frame our understanding of women and higher learning in the US, political economists have substantially shaped the character of women's participation in the process of knowledge production and continue to do so today.

In this essay I focus on three periods of profound change in US higher education and three representative political economists from those periods — Adam Smith, Herbert Spencer, and Lawrence Summers. I examine how the notion of division of labor as articulated by Smith, the closed energy theory popularized by Spencer, and rational choice invoked by Summers have been used to justify the low numbers of women academics. Finally, I examine what is at stake in higher education, which may in some ways be as simple as who does housework and as arcane as who has control over language — the narratives and metaphors that influence the values in society that help liberate, oppress, join, and divide people — the same language that allows us to interpret gender as destiny, bias as biology, and coercion as choice.

What Is at Stake in Higher Learning

If we begin with the entrance of women into the academy at Oberlin College in 1837, the opening of Vassar in 1865, or the rise of coeducation encouraged by the passage of the 1862 Morrill Act funding university growth, we see a picture of uneven progress for US women, which is punctuated by an increase in undergraduate enrollment in the last third of the nineteenth century and a rise in graduate education enrollment in the last third of the twentieth century. Not surprisingly perhaps, during these periods of substantial change the topic of women and higher education was often controversial and the subject of great public interest (Thomas Woody 1929; Mabel Newcomer 1959; Barbara Miller Solomon 1985; Mary Ann Dzuback 2003).

The increase in women's presence on US campuses resulted in a heightened anxiety in maintaining men's numbers. In the last third of the

nineteenth century, the proportion of women students in US higher education expanded greatly. As Frederick Rudolph (1962: 323) points out, for co-educational institutions, while there was a threefold increase in the number of male students from 1875 to 1900, the number of female students increased sixfold. This expansion in the population of women students did not go unnoticed. At Northwestern, for example, engineering courses were added to stem the dangerous tide (Rudolph 1962: 323). At the University of Nebraska, growing numbers of female students provided the Regents with a rationale for creating a school of commerce to retain male students (Ann Mari May 2006). And when the number of women students at Stanford rose from 25 percent in 1892 to 40 percent in 1899, the university adopted a limit on the number of women students to ''preserve the college from an unwanted change in character'' (Rudolph 1962: 323-24).

Not only were institutional leaders worried about a loss in status that might be associated with having a larger number of female students, but they also feared the possibility that women educated in Greek and Latin, Kant and Kolliker might shirk the more mundane responsibilities of home and hearth. As a student from Vanderbilt so beautifully framed it, ''No man wants to come home at night and find his wife testing some new process for manufacturing oleomargarine, or in the observatory sweeping the heavens for a comet'' (Edwin Mims 1946: 130-31).

What makes this statement so compelling is, of course, the satirical transference of two activities normally assigned to women within the home to the scientific sphere. While making butter was an activity done by women in the home for centuries, the ''testing'' of ''some new process for manufacturing oleomargarine'' is presented as abnormal or inappropriate for a wife. While ''sweeping'' the floor was expected as part of the household duties of a woman, ''sweeping the heavens'' for a celestial object is clearly not conducive to household harmony in this student's view. He aptly expressed the growing fear that the specter of an educated female population raised the possibility that the division of labor might change in the home and at work.

Metaphor and reality

In the past several decades, cognitive linguists have given considerable attention to the ways in which human thought processes underlying the construction of knowledge are largely metaphorical (George Lakoff and Mark Johnson 1980) while the work of feminist scholars such as Evelyn Fox Keller (1985) and Sandra Harding (1986) have brought particular attention to the importance of the relationship between gender and the construction of knowledge in science. Together, these theories enable a critique of economic theory's power to structure views of women's proper roles, at home and in education.

There are, of course, several well known studies of the use of metaphor in economics such as the work of Deirdre McCloskey and Phillip Mirowski.[5] Feminist economists have carefully identified the ways that economic theory reflects masculinist notions of science and utilizes androcentric metaphors in conceptualizing phenomenon (Julie A. Nelson 1992, 2004; Marianne A. Ferber and Julie A. Nelson 1993; Diana Strassmann 1993; Edith Kuiper and Jolande Sap 1995). Through this work, feminist economists have brought important insights concerning the gendered construction of economic theory. This work allows us to think more deeply about the way knowledge is socially constructed and the importance of gender and metaphor in understanding the construction of knowledge in economics, but little has been written about the way economic theory provides the linguistic devices to frame specific social problems such as the ''Woman Question.''[6]

There appear to be three primary ways that common tropes in economic theory have been especially significant in framing the discussion of women and higher education. First, in a very general sense, notions of what constitutes ''science'' have been enormously powerful in lending authority to the gendering of dualistic constructs in economics (Nelson 1992, 2004). According to Nelson, in economics, as in scientific discourse, those characteristics taken to distinguish ''man'' from ''nature'' during the scientific revolution were also taken to distinguish ''man'' from ''woman'' in such a way that ''both women and nature have been culturally and cognitively associated with characteristics that were deliberately cast aside in constructing the notion of a 'masculine' science'' (2004: 390). Second, economic thought since Adam Smith has presented a mechanistic view of the economy as a system.[7] This view of the economy as machine reflects itself in the notion of the self-regulating market — a market that is best functioning when free of outside interference, where the ''division of labor'' plays a central role as the primary mechanism through which circulating goods gain value (Timothy L. Alborn 1994: 179). Third, economic theory presents conceptions of self that are intimately related to gender and act as boundaries for behavior. ''Economic Man'' is self-interested not other-centered, experiences indifference not enjoyment; he is detached not attached, independent not dependent, and rational and not irrational (Ferber and Nelson 1993; Kuiper and Sap 1995). But importantly, he is a free agent — empowered, Strassmann has argued, and free to choose in a variety of realms, constrained only by a linear budget constraint, not the typically complex reality of everyday life. That economics is commonly known as the study of choice is particularly revealing because ''economic theory presents the ability to choose as the normal state of being'' (Strassmann 1993: 62). It is indeed a testimony to the power of the structural narrative of the self-regulating market system that we increasingly view these abstract economic metaphors

as concrete as the physical relationships that normally serve as foundations of reference.

''Weak Men and Disorderly Women''

In the nineteenth century, new arguments that drew upon increasingly popular concepts in political economy began to appear to rationalize women's separate sphere and justify their unequal access to education. Invoking the logic of the market and the ''great principle of political economy'' — division of labor — Alexis de Tocqueville argued that boundaries separating men and women should be maintained lest both sexes be ''degraded'' (1835/1956). While arguing that democracy ''destroys or modifies the different inequalities which originate in society,'' Tocqueville suggested that inequality between men and women would not ultimately succumb (and should not succumb) to the democratic impulse (1835/1956: 347). According to Tocqueville, women and men should maintain their separate spheres of activity because these spheres make society more efficient. Offering what Linda K. Kerber (1997) sees as the first systematic rhetorical use of the concept of separate spheres by a social critic, Tocqueville invoked the logic of the market, the concept of division of labor, and the rhetoric of efficiency to justify a separate sphere for women, making this separation praiseworthy, not peculiar. Tocqueville not only found praise for the inequality between men and women in America but also outlined the dangers of equality between the sexes warning that ''by thus attempting to make one sex equal to the other, both are degraded: and from so preposterous a medley of the works of nature, nothing could ever result but weak men and disorderly women'' (Tocqueville 1835/1956: 248). Nature, it would seem, had determined a separate sphere for men and women. Adam Smith's ''division of labor'' provided the language to rationalize this separation, and Tocqueville approved.

Although Adam Smith seldom wrote about women in *The Wealth of Nations* (1776/1976),[8] he nonetheless provided the concept of the ''division of labor'' that was usefully applied to gender relations in antebellum America (1759/1976). This concept created a rationale for separate spheres, maintaining boundaries that relied upon the logic of the market. Tocqueville's argument for women's separate sphere centered not upon women's incapacity for reason or prudence but upon efficiency and the logic of the market.

''Strong-Minded Women and Unmanly Men''

The opening of Vassar College in 1865 has traditionally been identified as the watershed in US women's educational history. Vassar was the first college founded in the US with the goal of building an institu-

tion that founder Matthew Vassar said ''should be to women what Yale and Harvard are to young men, receiving them after suitable preparation at the academies and seminaries, and furnishing them with the means for a true liberal education'' (Sidney Sherwood 1900: 447). However, perhaps the expansion of state-supported universities in the 1850s, 1860s, and 1870s offered the most compelling democratic challenge to the decidedly undemocratic higher learning and threatened most directly the patriarchy of knowledge (Earle D. Ross 1942).

Although the US's Morrill Act of 1862 was aimed primarily at expanding study in areas not thought to be useful to women, by virtue of its timing the Act did lay the foundation for increasing access to higher education for women. By subsidizing higher education at a time when new universities in the middle and western states were opening, opportunities for women accelerated. Universities in these states were, perhaps more from a lack of population than any egalitarian impulse, coeducational from the beginning.

As new coeducational universities in the middle and western US states opened, other established universities were pressured to turn coeducational.[9] The inclusion of women in existing institutions of higher learning typically created controversy. The most well known of the state universities, the University of Michigan, founded in 1817, first enrolled women in 1870 — against the will of the faculty (Rudolph 1962: 323). At Cornell, which was founded in 1865 and where it was said that anyone could study anything, women were allowed to enroll in 1872 when a large endowment for a women's dormitory was forthcoming (Rudolph 1962: 316).[10] Before reaching the conclusion that women should be allowed to attend, Andrew D. White, president of Cornell, toured the country studying the effects of coeducation asking whether coeducation nurtured ''strong-minded women'' and ''unmanly men'' (Rudolph 1962: 317). It was in this environment of conflict that arguments delineating the relationship between women, biology, and education reemerged, becoming far more salient and urgent.

Biology

While biologically driven explanations of sexual difference were expressed in medicine and US popular culture from the colonial era on, in the last third of the nineteenth century these claims became intertwined with women's increased presence on university campuses. Arguments of difference focused new intensity on the deleterious effects of too much education for women and the message was delivered with a new authority — science (Anita Clair Fellman and Michael Fellman 1981). The rationale for women's exclusion expanded to include the constraining ''reality'' of women's reproductive physiology. While the prospect of equality

for Tocqueville may have seemed remote enough to have still been viewed as ''preposterous,'' the prospects of gaining equality from increased education in the last third of the nineteenth century were perhaps threatening enough to be characterized as ''dangerous'' for society as well as for women themselves. Nowhere was the threat stronger than at Harvard, and nowhere was the pressure stronger than in the medical establishment that received increasing pressure to provide women with women doctors (Mary Roth Walsh 1977). Not surprisingly, doyens of the medical establishment were prepared to make the case rationalizing women's exclusion with a considerable amount of help from biologically driven arguments.

In his popular book *Sex in Education: A Fair Chance for the Girls* (1873), Edward H. Clarke used a number of examples of young women permanently injured by the stress of higher education. Especially frightening was the fate of Miss G, who entered a western college and later died, Clarke said, ''not because she had mastered the wasps of Aristophanes and the Mechanique Celeste, not because she had made the acquaintance of Kant and Kolliker . . . but because, while pursuing these studies, while doing all this work, she steadily ignored her woman's make'' (Clarke 1873: 105-106). Although girls might be capable of the mental exertion necessary in the higher learning, this education, he argued, goes against the ''laws of nature.''

According to Clarke, the special demands nature imposed upon a young woman in puberty limited her ability to engage in steady mental effort without incurring undue stress on the reproductive system. Clarke argued that an education for young women similar to that of young men calls for sustained and continuous effort, which is ''out of harmony with the *rhythmical periodicity* of the female organization'' (Clarke 1873: 83). While young men develop into manhood through a more gradual or persistent process of maturation, women develop in a relatively short period of time. According to Clarke, ''When school makes the same steady demand for force from girls who are approaching puberty, ignoring Nature's periodical demands, that it does from boys, who are not called upon for an equal effort, there must be failure somewhere'' (Clarke 1873: 97).

Clarke's theory reflected the ''vital forces'' notion — a view that the body was a closed energy system in which effort diverted from one activity or function would, if excessive, harm another. According to this view, also known as conservation of energy, overexertion in one part of the body would deplete the health of some other part. Herbert Spencer, the British political philosopher and supporter of Charles Darwin, applied the concentration of energy — or, as he preferred to call it, the persistence of force — to the human body in a way that argued against women's increased education.

Although in *Social Statistics* Herbert Spencer claimed that ''Equity knows no difference of sex'' (1851: 155), Spencer's view of women and equity had substantially changed by the 1870s. In ''Psychology of the

Sexes,'' published in 1872 in the *Contemporary Review* and later in *The Study of Sociology* (1873), Spencer argued that men and women are not mentally alike (Nancy L. Paxton 1991: 171-72). Invoking the theory of vital forces in the human body along with a Darwinian perspective, he explains how it is that women fall short intellectually and emotionally compared with men. According to Spencer, women's physical development results in a faster and less sustained growth in their mental development, leaving them lagging in ''the latest products of human evolution — the power of abstract reasoning and that most abstract of the emotions, the sentiment of justice'' (Spencer 1873/1966: 341-42).

Spencer invoked the ''science'' of Darwinian evolution to put forth his notion that women are less developed or evolved than men and asserted a masculinist notion of science as detached rational inquiry. However, also revealing is his use of concepts from political economy to frame the issue of women's inferiority and develop what could be called a political economy of gender. Preoccupied with order and scarcity, cognizant of the need to carefully allocate their scarce vital energy, and weakened by the periodicity of their constitution, women are taxed with a special energy demand — a price women had to pay for the future preservation of society (Spencer 1873/1966; Patricia Vertinsky 1987: 47). Melding metaphors from science into a vision of the political economy of gender, Spencer spoke to the anxieties raised by a market system — a market system, at times, seemingly out of control.

Although the arguments of physicians like Clarke were influenced more by medical folklore than medical science (some empirical studies available did contradict the prevailing wisdom), they were, nonetheless, taken as ''fact'' by Regents and others seeking to control the social ills that might result from women pursuing higher learning. In 1877, Regents of the University of Wisconsin explained that ''at stated times, nature makes a great demand upon the energies of early womanhood and that at these times great caution must be exercised lest injury be done'' (Board of Regents, University of Wisconsin 1877: 45). By 1895, faculty at the University of Virginia pronounced that women students were indeed often ''unsexed'' by academic strains (Rudolph 1962: 326-27).

Choice

Stating that it is ''important to try to think systematically and clinically'' about the reasons for women's absence in academia, promising to ''adopt an entirely positive, rather than a normative approach,'' and speaking ''completely descriptively and non-normatively'' about these issues that are ''too important to sentimentalize,'' former Harvard president Summers suggested that the ''leaky pipeline'' of women in higher education is something worth contemplating. After all, substantial in-

creases in the number of women graduate students might lead one to expect that these same women would someday hope to participate in the professional activities for which they were trained. Yet, Summers maintains, the demanding nature of these jobs requires a level of commitment that ''a much higher fraction of married men have been historically prepared to make than of married women.'' It matters not, apparently, what historical forces ''prepared'' men to make this level of commitment — as this is ''not a judgment about how it should be'' — nor what historical forces prevented women from being ''prepared'' to make that commitment, it only matters that women chose not to make this commitment and men chose to make it. Summers, who as an economist works in a field organized by the concept of choice, brings that language to women's participation in the sciences.

Although he would ''far prefer to believe something else,'' Summers offers a second factor to explain the lack of women in science: the differing availability of aptitude between men and women. While differences in average intelligence between men and women are debatable, science has been used to ''prove'' differing variances in intelligence between men and women. The ''unfortunate truth,'' according to Summers, is that there is a difference in the standard deviation between men and women at the high end of the distribution. This statement regarding the scientific ''truth'' of difference echoes the ''evidence'' used to limit women's educational advancement in the previous centuries, showing that science can still be used to justify inequality.

As for discrimination in hiring, that pesky residual that in some econometric studies rears its ugly head more as a specification error than any social failing, Summers finds it ''the most difficult question to judge.'' Although no one ''who's been in a university department or who has been involved in personnel processes can deny that this kind of taste does go on,'' and while it ''vigorously needs to be combated,'' it may not explain the absence of women from the halls of ivy.

For Summers, the logic of the market explains why discrimination cannot exist. Invoking stylized facts such as the ''fallacy of composition,'' using the metaphor of football, and citing the ''powerfully'' compelling logic of Gary Becker, Summers describes a world in which discrimination against women cannot exist in higher education because it would be illogical in a competitive market. The competitive academic marketplace, in which the best ideas naturally drive out the worst ideas in their Darwinian struggle for survival, would provide an incentive for firms, or rather, institutions of higher learning, to hire talented women, while the discipline of the market would punish institutions that discriminate. No, rather than discrimination, ''the largest phenomenon, by far, is the general clash between people's legitimate family desires and employers' current desire for high power and high intensity,'' which, by the way, are as-

sumed to be independent.[11] Moreover, Summers explains, in the special case of science and engineering, ''there are issues of intrinsic aptitude, and particularly variability of aptitude.''

It is revealing that, of those individuals interviewed who had attended the NBER conference on diversity in science and engineering, the outcry over Summers's comments was strongest amongst non-economists. Women scientists such as Nancy Hopkins walked out during his talk, while women economists seemed merely to view this as the unremarkable musings of a man trained in a quotidian discipline.[12] Still others, such as fellow Harvard economist Claudia Goldin, ''left with a sense of elation at his ideas.''[13] In rationalizing Summers's comments, Goldin said it most clearly, ''he speaks the language that we speak.''[14]

The language of economics, using stylized facts, rigid theoretical frameworks based upon the theory of the firm, and hypothetical deductive logic, is particularly well suited to contextualize the issue of women and higher learning at the conclusion of the twentieth century. According to the incontrovertible logic of choice, women are to blame for women's position — be they welfare mothers or college professors, as coercion is reinterpreted as choice. However, the reality is that the discipline of economics continues to offer ''culturally available symbols'' that allow the social construction of gender to be utilized to maintain and distribute power in the institution of higher learning.

Ann Mari May
Department of Economics, Middlebury College
Middlebury, VT 05753, USA

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Notes

1. While some countries such as Sweden, Canada, and Norway have implemented programs to increase the representation of women faculty, these programs often have been criticized by male faculty and thrown out by (mostly male) courts. For example, in 2000 the University of Oslo implemented a plan to improve gender diversity among faculty by reserving twelve full or associate professorships for female candidates. In January 2003 the European Free Trade Association Court ruled that it was illegal for the University of Oslo to reserve faculty jobs for women (*Chronicle of Higher Education* 2003).
2. In 1981, 49.7 percent of women faculty had tenure, while in 2000 only 50.9 percent of women faculty members had tenure (US Department of Education, National Center for Education Statistics 2003: Table 242.).

3. Marcella Bombardieri (2005) of the *Boston Globe*, who first reported on the NBER conference in ''Summers' remarks on Women Draw Fire,'' won several honors for her coverage of the Summers affair.

4. Hirshman also blames women for majoring in fields with low expected salaries upon completion when she argues: ''The first pitfall is the liberal-arts curriculum, which many women are really good at . . . . So the first rule is to use your college education with an eye to career goals'' (2005a).

5. See, for example, Deirdre McCloskey (1985, 1994), Arjo Klamer, Deirdre McCloskey, and Robert M. Solow (1988); and Philip Mirowski (1994, 1998). However, much of this work doesn't pay explicit attention to gender. Mirowski's *Natural Images in Economic Thought* (1994) is virtually devoid of gendered analysis except for a chapter that appears to be an afterthought at the end by David Chinoni Moore on ''Feminist Accounting'' (1994). In *More Heat than Light,* Mirowski (1998), an economic historian, manages to write an entire book on economics, energy, and physics without mentioning the closed energy theory and the use of scientific notions to argue against women's higher education — one of the most significant debates about women, economics, and science in the nineteenth century.

6. As an exception, see the new and interesting work of Suzanne Bergeron (2004).

7. For example, Smith writes, ''Power and riches appear then to be, what they are, enormous and operose machines contrived to produce a few trifling conveniences to the body . . . . [T]hey make part of a great system of government, and the wheels of the political machine seem to move with more harmony and ease by means of them'' (Smith 1759/1976: 182 — 3, 185).

8. Smith speaks approvingly of the limited education for women when he writes, ''There are no publick institutions for the education of women. . . . They are taught what their parents or guardians judge it necessary or useful for them to learn; and they are taught nothing else. Every part of their education tends evidently to some useful purpose either to improve the nature attractions of their person, or to form their mind to reserve, to modestly, to chastity, and to economy; to render them both likely to become the mistress of a family, and to behave properly when they have become such''(1776/1976: 781).

9. Just as women in the West won suffrage earlier than women in the East, universities in the West admitted women earlier than more prestigious eastern schools. As of 1872, Frederick Rudolph (1962) reports that there were ninety-seven major coeducational colleges and universities in the US — sixty-seven of which were located in the West and only five of which were located in New England (1962: 322).

10. Even so, Ezra Cornell could not resist putting a note in the dormitory cornerstone explaining, that if coeducation failed, why it might be so (Waterman Thomas Hewett 1905: 255-56).

11. David Colander and Joanna Wayland Woos (1997) carefully examine the ways in which these seemingly independent forces of discrimination and choice actually cannot be examined independently.

12. Bombardieri (2005) reports that while scientists such as Nancy Hopkins walked out of Summers's talk, economists Sarah Turner and Paula Stephan were not offended by Summers's views, seeing them as mainstream views in economic theory.

13. See Claudia Goldin quoted in Michael Dobbs (2005).

14. Claudia Goldin quoted in Virginia Postrel (2005).

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