

**Keynote Lecture:  
Women in Health Care  
Mass General Hospital Annual Talk  
September 2006**

**MEASURE FOR MEASURE:  
WOMEN SCIENTIFIC INTELLECTUALS**

You invited me to speak about women in health policy.

Thank you so very much for this stimulating invitation: I am a woman who is active in health policy and I have often mulled over the influence of gender on the field.

But because there are so few studies of the role of women in health policy, I broadened my topic to women intellectuals in fields related to health policy: science and medicine. By intellectuals I mean people who traffic in ideas or, as *Merriam-Webster* defines it, those "given to study, reflection, and speculation . . . engaged in activity requiring the creative use of this intellect."

I do not mean to say that women have not had profound influence on aspects of health policy. Many have; for example, Margaret Sanger had pivotal impact on birth control and family planning, Jane Adams on social work, Florence Nightingale on nursing and hygiene, and Elizabeth Kubler Ross on hospices and "compassionate bereavement."

Indeed, in nineteenth century America, women were major forces in health care, often in opposition to the traditional male-dominated medical establishment. For example, Lydia Pinkham not only marketed a vegetable compound but also served as a major source of self-

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help health advice. She was deluged with mail in part because she promised that only women would read the letters she received.<sup>1</sup> Women were also influential in creating major religions based on reduced concepts for the role of scientific medicine: Ellen White, who founded the Seventh-Day Adventist Church, was a health reformer interested in vegetarianism. She was viewed as a prophet—the Mother of the Church.<sup>2</sup> The chronically ill Mary Baker Eddy founded the Christian Science Church, after experimenting with placebos and turning to the Bible, to reinforce the role of Christianity in healing.<sup>3</sup>

But, in all these cases, the women were involved in aspects of health care that could be characterized as female domains or spiritual and their roles were viewed primarily as activists, not as intellectuals. Indeed, as was all too common, at least four of these women were labeled as “hysterics,” who were creative because of their debilitating psychological illnesses, not because of their genius.<sup>4</sup> Jane Adams did win a Nobel Prize—but it was for Peace, not science.

Because I think your interest is in women in the role of intellectuals—not activists—who do not limit themselves to women’s issues, I have focused on women scientific intellectuals.

So, how do they fare?

Better than before; but still not great.

## **An Unusual Perspective**

“Ben” Barres has an unusual perspective on the fate of women scientific intellectuals. He is an MD, PhD in Neurobiology and a Stanford Medical School Professor to boot. But,

once “he” was a “she,” Ben was “Barbara.” When he switched genders, in 1996, he heard “Ben Barres gave a great seminar . . . his work is much better than his sister’s.”<sup>5</sup>

Like most women intellectuals, I can easily relate to Ben Barres’ experiences.

For example, as a young woman living in the Washington, DC area after graduating from MIT with a BS in Economics, I aced the final of a graduate course in statistics. “Your husband helped you,” asserted my instructor, referring to my MIT classmate and life-partner.

Not.

You would think it would have gotten better with time. But think again.

Some thirty years later, I was a member of a faculty group that taught financial measurement to the 1,000 or so first-year Harvard Business School MBA students. In the prior year, our demanding and experienced MBAs had elected me as one of two of the HBS’s “Best Instructors”—a major kudo in this teaching-centric school. But one member of the group simply refused to acknowledge my existence in our teaching meetings. His eyes never met mine and he interrupted or ignored my observations. To him, I simply was not there.

Notes Ben Barres: “People who do not know I am transgendered treat me with much more respect. I can even complete a whole sentence without being interrupted by a man.”<sup>6</sup>

Although I laughed out loud when I read this observation, some forty years after the latest wave of the Feminist Revolution, it is not really funny.

## **Careers of Women Scientific Intellectuals**

The good news is in simply being an intellectual. The endorphin rush attributed to physical exercise is nothing like the rush I get from successful research and teaching. When I have an idea tumbling around in my head, I cannot sleep well until I write about it.

Thrilling? yes.

Fulfilling? no.

It is hard for a woman intellectual's voice to be heard.

Consider the following:

- Only 10% of the membership of the National Academy of Sciences, the premier body of scientists, is female.<sup>7</sup>
- In the 104 years that they have been awarded, only 11 women have won the Nobel Prize in Science, out of 758 total winners. Three of the 11 were Curies and one of the Curies, Marie, won it twice in two different fields.<sup>8</sup>
- Women represent about one-half of biology graduates and MDs, “yet, they are only 30% of the lead authors in six of the most influential medical journals.”<sup>9</sup> In academic medicine, they also receive lower salaries than comparable men.<sup>10</sup>
- Women applying for a research grant need to be 2.5 times as productive as men to be considered equally competent.<sup>11</sup>
- And when it comes to policy, from December 2004 to February 2005, only 10% of the op-ed bylines in *The Washington Post* were female. *The New York Times* has only one female op-ed columnist and all five of *USA Today's* are male.<sup>12</sup>
- When *Modern Healthcare* named the four people who had most changed health care, in a reversal of the other immaculate conception, it could find only fathers.<sup>13</sup>

## Why the Differences?

What explains the differences in recognition of male and female scientific intellectual achievement?

As Larry Summers, Harvard University's recently "resigned" president, famously noted, they could be caused by innate biological differences. He may well be correct; but we know so little about the biology of the brain that examination of this thesis will yield little of immediate value.

The differences could also be caused by attitudes toward careers. True, in 1965, there were substantial differences between men and women for personal satisfaction factors. But the differences had virtually disappeared by 2000, except for the importance of financial success, and, there too, the gap has narrowed considerably.<sup>14</sup> Similarly, the patent gap between male and female scientists declined substantially over 35 years.<sup>15</sup>

Further indicating their increased focus on career, women's average age at marriage and divorce rates have both increased.<sup>16</sup> Those with doctorate or professional degrees who entered college in 1976 spent only 10 months out of work in their first 15 years after graduation. Those with PhDs had the next to shortest out-of-work spells.<sup>17</sup>

If we cannot analyze innate differences between them and if women are as serious about their careers as men, there is only one explanation left: discrimination.

Some men may want to maintain the status of their occupation by excluding women from "polluting" it. In fields where measures of excellence are ambiguous, the entrance of women might be seen as diminishing the men's status because the women may be viewed to have lower qualifications. Sometimes, these women are harassed in an attempt to coerce them to leave the occupation and/or receive lower compensation.<sup>18</sup> For example, one male geneticist noted: "Female scientists who are competitive or assertive are generally ostracized by their male colleagues."<sup>19</sup>

## How Do Women Managers Fare?

In contrast, male attitudes toward women top management in business has improved considerably over time. Indeed, by 2005, both men and women had identical, overwhelmingly favorable views of the presence of women in senior management and also expressed identical favorable views of the idea of comfortably working for a woman.<sup>20</sup>

That's not to say that the business community is a perfect environment for women. In a 1988 *Wall Street Journal* editorial, "Dancing on the Glass Ceiling," I predicted that a number of women would become CEOs of major firms in the late 1990s. I was roughly correct about that but wrong about my primary hypothesis. I had assumed that female managers wanted to shatter the glass ceiling—i.e., to climb to the top of the corporate ladder;<sup>21</sup> but, as I discovered at a recent reunion of women HBS alumni, many wanted something else entirely. As women, blessed with creativity and the flexibility to re-create themselves more freely than men, many had rejected corporate careers, opting to become entrepreneurs. The female HBS MBAs of 1992 were much more likely to be self-employed than the men, for example.

Was this women's movement out of big corporations a push or a pull? Both. But the push was powerful. One research group determined that corporate culture was the No. 1 reason women left. They wanted greater job satisfaction. It found that the senior executive women who remained were often less assertive and more formal and risk averse than their male counterparts. These women used their mentors more for protection than advancement.

Why were they hunkered down? Notes one corporate escapee, "The brass ring ends up thrust through your nose. . . . The possibility of being ousted not for performance but for politics is just too thick up there."

The personal costs were substantial, too: 27% of corporate women and only 3% of men had no children; 13% of women vs. 3% of men did not marry or postponed it.

The escapees redefined female entrepreneurship. Contrast, for example, Julia Child and Martha Stewart. In the 1960s, Child pioneered the “how to be a great chef” movement with her innovative books and personal appearances. She did good: convincingly demonstrating to those of her Smith College classmates who clucked about the prospects of the gawky, treble-voiced, 6-foot-2 Julia that women, no matter how iconoclastic their appearance, can achieve considerably more than preparing a ladies’ lunch. But, in comparison with Martha Stewart, a Wall Street escapee who became another pioneering force in the same field, Child barely monetized her contributions. Martha showed that modern-day women entrepreneurs can both do good and do well (although, sadly, she went too far on the “do well” end).

## **Back to Women Scientific Intellectuals**

All in all, the broad-based business environment is a much more hospitable one than the scientific intellectual one. By 2004, 16 women led *Fortune* 1,000 companies and many more headed large private firms and great universities and other nonprofits. This admirable, accomplished and diverse lot included Meg Whitman of eBay and Andrea Jung of Avon.

Why the difference?

An important factor lies in the widespread recognition of clear performance metrics in business—profit and loss, return of invested capital, stock market valuation—which are used to calibrate performance relative to peer organizations. Neither the metrics nor the processes with which they are used are perfect; but they are helpful. Managers who succeed on the

basis of these metrics are generally rewarded. Those who fail, are fired. Witness, for example, the 2006 promotion of Indra Nooyi, a 51-year-old Indian woman, as PepsiCo's CEO. Under her watch, as chief financial officer, PepsiCo shares traded at prices nearly 70% higher than six years ago, while Coke shares traded 30% lower. At the same time, Dr. Henry McKinnell, CEO of Pfizer, was essentially fired. Pfizer's shares had fallen 40% since McKinnell became chairman in May 2001. Over that same period, the American Stock Exchange Pharmaceutical index went down by only 13%.

Like businesses, the more concrete scientific disciplines, such as engineering, have better track records than the physical sciences in filling their academic pipelines with women, perhaps because they are more focused and/or more capable of measuring genuine achievement. Among the 50 top scientific academic departments, 17% of the Assistant Professors in Engineering are women—out of 15% of the PhDs—while only 18% of Assistant Professors in the physical sciences are women, although they received 25% of the PhDs.<sup>22</sup>

## Measure for Measure

If discrimination is an important root cause for the substantial difficulties encountered by women intellectuals in the sciences, one promising, and little-voiced, solution is to counter it with data about performance. That is not to say that the traditional remedies—extensions of time for child-rearing, mentoring, greater representation by women on selection committees, etc.—are without merit. But why not do what the business community does: focus on the metrics?

I am a fan of objective performance metrics. I not only teach the subject but also owe my own early career success to performance metrics. I was the first woman to be tenured at Harvard Business School, in part because the school is a teaching-centered one and I had outstanding evaluations from our MBAs and executive students. Because my research has rarely been politically correct and my methodologies are those of an historian, rather than an econometrician, my tenure could have been easily torpedoed in the absence of such data. My contrarian research career continues to benefit from objective performance metrics, such as book sales.

I am not alone.

Did you know that the publications of women scientists are as likely to be cited as those of men?<sup>23</sup>

Neither did I.

I found the statistic—and isn't it a fabulous one?—while researching this talk.

What a shame that it, and perhaps other important measures of success, lie buried in the literature.

Intellectuals test their ideas with data. Let's apply that concept to scientific women intellectuals.

## Endnotes

<sup>1</sup> James Harvey Young, “Patent Medicines and the Self-Help Syndrome,” *Medicine Without Doctors* (New York: Science History Publications, 1977), pp. 95–114.

<sup>2</sup> Ronald L. Numbers, *Prophetess of Health: Ellen G. White and the Origin of Seventh-Day Adventist Health Reform* (Knoxville, TN: University of Tennessee Press, 1992).

<sup>3</sup> The Mary Baker Eddy Library.org, “HerStory”, accessed August 28, 2006.

<sup>4</sup> George White Pickering, “Creative Malady: Illness in the Lives and Minds of Charles Darwin (London: Allen & Unwin, 1974).

<sup>5</sup> Sharon Begley, “He, Once a She, Offers Own View on Science Spat,” *The Wall Street Journal*, July 13, 2006, p. B1.

<sup>6</sup> Sharon Begley, op. cit.

<sup>7</sup> Suzanne Bohan, “Transgender Professor Defends Female Scientists,” *The Oakland Tribune*, July 20, 2006.

<sup>8</sup> Nobelprize.org., accessed August 28, 2006.

<sup>9</sup> R. Jagsi, E.A. Guancial, C.C. Worobey, L.E. Henault, Y. Chang, R. Starr, N.J. Tarbell, and E.M. Hylek, “The ‘gender gap’ in authorship of academic medical literature—A 35-Year Perspective,” *The New England Journal of Medicine* 355 (3) (July 20, 2006): 281–287; and Mary Beth Hamel, Julie R. Ingelfinger, Elizabeth Phimister, and Caren G. Solomon, “Women in Academic Medicine—Progress and Challenges,” *The New England Journal of Medicine* 355 (3) (July 20): 310–312.

<sup>10</sup> A.S. Ash, P.L. Carr, R. Goldstein, and R.H. Friedman, “Compensation and Advancement of Women in Academic Medicine: Is There Equity?” *Annals of Internal Medicine* 141 (2004): 205–212.

<sup>11</sup> C. Wenneräs and A. Wold, “Nepotism and Sexism in Peer-Review,” *Nature*, 387 (1997), pp. 341–343.

<sup>12</sup> Helena Cobben, “Just World News” blog, accessed August 28, 2006.

<sup>13</sup> Matthew DoBias, “HSA Architect Sees More Opportunities,” *Modern Healthcare*, 36 (25), June 19, 2006; Vince Galloro, “You Just Keep Yourself in Position,” *Modern Healthcare* 36 (25), June 19, 2006; Andis Robeznieks, “Putting Safety on the Front Line,” *Modern Healthcare*, 36 (25), June 19, 2006; and Laura B. Benko, “HMO Creator Sees Need for New Model,” *Modern Healthcare* 36 (25), June 19, 2006.

<sup>14</sup> Claudia Goldin, “The Quiet Revolution that Transformed Women’s Employment, Education, and Family,” 2006 Ely Lecture, American Economic Association Meetings, Boston, Massachusetts, January 2006, Figure 6, p. 12.

<sup>15</sup> W.W. Ding, F. Murray, and T.E. Stuart, “Gender Differences in Patenting in the Academic Life Sciences,” *Science*, vol. 33 (August 4, 2006), p. 667.

<sup>16</sup> Goldin, op. cit., p. 12

<sup>17</sup> *Ibid.*, p. 17.

<sup>18</sup> Marcella Bombardieri, “Professor Allegedly Bullied MIT Prospect,” *The Boston Globe*, July 28, 2006.

<sup>19</sup> Sharon Begley, op. cit.

<sup>20</sup> Dawn S. Carlson, K. Michele Kacmar, and Dwayne Whitten, “What Men Think They Know About Executive Women,” *Harvard Business Review* (September-October 2006), p. 28.

<sup>21</sup> Regina E. Herzlinger, “Many ‘Women’s Problems’ Aren’t—Dancing on the Glass Ceiling,” *The Wall Street Journal*, February 17, 1988.

<sup>22</sup> J. Handelsman, N. Cantor, M. Carnes, D. Denton, E. Fine, B. Grosz, V. Hinshaw, C. Marrett, S. Rosser, D. Shalala, and J. Sheridan, “More Women in Science,” *Science*, 309 (August 19, 2005), pp. 1990–1991.

<sup>23</sup> Ding, Murray, and Stuart, op. cit.