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Future Promise for Women in Science

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This article examines possible reasons why women are still not making it to the top in the hard sciences in academia. It considers two major difficulties that women face. The first concerns the psychological nature of women, which is alleged to be unsuited to the competitive and aggressive mindset considered necessary for scientific achievement. The second concerns the childbearing and child-nurturing roles of women, which make it difficult for them to conform to the intense, time-consuming demands of an academic career in science. The article argues that many of the qualities associated with the female stereotype are actually human characteristics well-suited to the increasingly collaborative science of the twenty-first century and goes on to discuss support mechanisms that might aid women to balance their personal and professional lives. Addressing both issues requires casting a critical eye on the traditional metrics by which scientific achievement is measured.

Women are still not making it to the top in the hard sciences. Their numbers do not reflect their representation in undergraduate science, graduate school, and in entry-level jobs. Why? Recently this question has received much attention in response to comments made by Lawrence Sommers, then President of Harvard University, who stated that the comparatively small numbers of women in high-level hard science positions might be related to reported differences in scientific ability between the male and female population.[1] But continuing under-representation of women at the top — a gender gap — raises many complex issues beyond genetics.

In this article I intend to examine some possible reasons for the gender gap and to show how the future of science might hold promise for reducing it. The difficulties facing women are in general of two kinds. The first concerns the psychological nature of women, which is alleged to be unsuited to the competitive and aggressive mindset considered necessary for scientific achievement. The second concerns the biological nature of women, that is to say, their childbearing and child-nurturing roles, which make it difficult

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for them to conform to the intense, time-consuming demands of an academic career in science. In connection with the first, I will show that many of the qualities associated with the female stereotype are actually human characteristics well-suited to the increasingly collaborative science of the twenty-first century; in connection with the second, I will discuss support mechanisms that could aid women to balance their personal and professional lives. Addressing both issues requires casting a critical eye on the traditional metrics by which scientific achievement is measured.

Much of what I say can be extrapolated to other professional and academic careers, but I believe that the problems I touch upon are exacerbated in the hard sciences where the vagaries of experimentation often determine the schedule of the scientist, making it particularly difficult to plan and order a personal life. I will confine myself largely to the problems facing women in academic science, in part because half the young scientists begin their careers in academia and in part because that is the nurturing ground of future scientists.

Certainly Women Have Ability

Just as there are many examples of brilliant men scientists so are there many examples of creative women scientists whose work resulted in major scientific advances. I name only four. Marie Curie (1867-1934) was a pioneer in the early field of radiation; she discovered the elements radium and polonium and was the first women to receive a doctorate in France and the first to teach at the Sorbonne.[2] Rosalind Elsie Franklin (1920–57) was a pioneer molecular biologist whose investigations into the structure of DNA opened the door to modern genetics.[3,4] Helen Brooke Taussig (1898–1986) was the founder of pediatric cardiology, developing a surgical procedure to save the lives of blue babies.[5] Barbara McClintock (1902–92), worked on the genetics of maize, analyzing genetic crossing over and describing for the first time mobile genetic elements (jumping genes) and the phenomenon of genetic transpositions.[6] The success of these women demanded persistence, courage, and resolve; they were not always well treated by the scientific establishment and often had to make their own opportunities working against extreme odds. Helen Taussig stated that “over the years I’ve gotten recognition for what I did but I didn’t at the time.”

Naysayers may argue that women such as these were exceptions — that they sit at the top of the bell curve and that their achievements say little about the comparative scientific abilities of men and women. But both anecdotal and empirical evidence strongly suggest that male and female sexes demonstrate comparable aptitude for science. When distinguished women scientists, members of the National Academy, were interviewed, they often gave the opinion that "there are greater differences within the sexes than between them."[7] Recent math and science aptitude tests,[8,9] show that girls and boys in primary and secondary school show little differences, with the most recent results showing that 35 percent of boys and 30 percent of girls reach proficiency levels in grades four, eight, and twelve.[10] The small differences that exist are likely due to differential socialization.

My experience at both secondary school and university in the UK and my many years as biologist, professor, and administrator in American higher education confirm my belief that, given equal expectations and opportunities in secondary and higher education, women will do quite as well as men academically. Between the ages of eleven and eighteen, I attended a state grammar school in the UK where there were equal numbers of girls and boys in all classes. For the first four years we all studied biology, chemistry, physics, and mathematics each year in addition to the humanities and the social sciences. Classes were competitive, and students were judged academically entirely on merit regardless of gender. Rankings in class showed that the girls were at least as successful as the boys in their science courses. My own children attended middle and high school in Newton, Massachusetts, where again I detected no gender bias.

My college experiences as student and teacher confirm my position that the gender gap does not develop in college either, provided that the instructor shows no prejudice. University degrees in England are highly specialized, and I read for my bachelor's degree in physiology with a cohort of about fourteen students, half of which was female. Both men and women were equally forceful in class seminars and expectations were the same for all students. The few women lecturers that we had were as highly regarded by us as their male counterparts. Similarly in the United States at the urban public university where I taught, the women taking biology were as likely to be among the A students as were the men and their ambitions were quite as high; they received top science awards as frequently and went on to top graduate and medical schools.

I conclude that the under-representation of women in the upper echelons of the scientific establishment has nothing to do with relative intellectual aptitudes of men and women. As I shall discuss below, many girls and young women choose to study science and take it up as a career.

Expectations And Motivation of Women to Pursue the Study of Science

By the end of the twentieth century women were far more optimistic about their chances for an active productive intellectual life than they were in the middle of the century.

Fifty years ago, in the early years of my scientific education, few women went on to pursue a science career after university. Because older women scientists were rare and usually unmarried or without children, there were few role models for younger women. For the most part, a woman was not supposed to work at all; her role was that of mother, wife, and housekeeper. In general, women accepted this state of affairs; to be sure, many went to university and studied science, but they rarely imagined having a "career." I remember being relieved that as a woman I would not be obliged to engage in the competitiveness of a career but could just enjoy learning for its own sake. Women scientists might get a job and work for a few years until they had children, but any career ambitions generally took second place to those of their husbands. They did not expect to reach the top of the profession; indeed, they hardly expected to have a profession at all. I was fortunate in having a husband and a post-doctoral advisor both of whom encouraged me and convinced me that I should return to science after having children. I am enormously grateful to them for their confidence and support at a very critical time in my professional life.

Today much has changed. The economy is leaner and two working parents are often required to support a family financially. At the same time, it is understood that women as well as men want more from a job than money — they want the intellectual challenge that a profession can offer. Support services, such as on-site day care, day care subsidies, and maternity and paternity leaves, have developed to assist them manage job and family. Men-folk are more active domestically than before, making it easier for mothers to hold responsible positions and compete more effectively for advancement.

The developing interest in science as a career is reflected in the increased numbers of women studying science at the undergraduate and the graduate level. In 1968, when I began teaching at the University of Massachusetts Boston, there were only one or two women out of eighteen students in my biology lab sections. By 2005, 64 percent of the biology majors, 47 percent of the biochemistry majors, and 53 percent of the chemistry majors were women. Even in Physics and Computer Science Departments, fields less attractive to women students, 25 percent to 35 percent of the undergraduate students were women.[11]NSF government statistics show that of the doctoral degrees in science awarded to women in the United States in 2001 \ 45 percent were in biology, 26 percent were in the physical sciences and 27 percent were in mathematics.[12] These figures reflect a significant increase from both the number and percentage of doctoral degrees awarded women in 1992. Similar figures are also available from a study out of the University of Oklahoma.[13]

The numbers are less encouraging, however, when compared to the percentages of women faculty hired in the same period.[14] The University of Oklahoma study shows that in the top fifty research universities, the percentages of women junior faculty in 2002 fell short of the percentages of women receiving doctoral degrees in the same period (according to this report 44.7 percent of the science PhDs between 1993 and 2002 went to women while in 2002 women accounted for only 30.2 percent of assistant professors). Many women who are new Ph.D.s prefer to go to industry, believing it offers better childcare programs, more flexible hours, and a greater understanding of the tension between work and family. Those who take academic positions often find it difficult to advance despite ability and motivation.

The two great challenges that women still confront are first, that their success in the science establishment is compromised by their role as wife and mother and second, that the temperament of women is perceived to be unsuited to the competitive nature of the scientific enterprise. I will discuss these challenges in turn.

Issues Concerning the Biological Nature of Women

One major difference between men and women, of course, is that women bear children and usually assume the primary role in raising them. The time demanded by domestic responsibilities is in conflict with the time demanded to develop and maintain a research program in science. A conflict of this sort is certainly not unique to scientists; but if the scientist is to succeed and satisfy his or her obligations to funding agencies, she must subjugate her private life to the demands of her experiments, which means long hours away from home and an unpredictable schedule.

All academic scientists must satisfy two interdependent masters, the granting agency and the academic institution, and satisfying both of them is always stressful, but particularly so during the probationary period of an academic appointment, that is, the first six years before a tenure decision is made. During these years the young scientist needs to live and breathe her vocation. For it is then that she is expected to establish an independent research program, to obtain outside funding, to start publishing, and to begin making a name for herself in her field. Women scientists in their late twenties and thirties, however, are likely to have a third taskmaster: children and domestic responsibilities. Even with many support mechanisms available, these women work at a disadvantage.

Women negotiate this critical stage of their career in a variety of ways. Some manage to juggle family and careers and keep to the accepted tenure schedule; it is understandable, however, that many become so stressed that they do not have the time to enjoy the science, and most concentrate simply on getting through the probationary period and making tenure. Life has forced competing priorities on them and the struggle among them during this period often saps their ambition. Others choose, as I did, to take time out or to scale down their activities during the years when caring for their family competes with their science.

I had my first child after my post-doc, while I was working full time in research at a medical school. To keep open the option of a career, I abandoned research for several years and gave my full attention to teaching, first at a state college in Connecticut and then at University of Massachusetts Boston, because I recognized that even with a helpful husband and an au pair, I could not give the attention and time to research that my field (neurobiology) demanded. I was fortunate to be at a new university that had not yet the space for research laboratories, and so my temporary suspension of research was well-suited to their current needs. Later, when my children were in school full time, I took two years leave without pay for a senior post-doc in a research laboratory, where I changed my research focus from electrophysiology to neuroanatomy, whose experimental protocols could better accommodate a domestic schedule. I then returned to the University part time for a year, during which time I established my new research program.

Other female colleagues also chose non-traditional career paths. One was in a “traditional” marriage and waited until her children were in college before she went to graduate school. Several finished graduate school before having children, while others, like me, had children after they finished their post-docs. When these women entered motherhood, they either stopped doing research and taught part time or stopped altogether for a few years and then went back to academia when their children were older. Returning to a research career after a hiatus was never an easy solution because there was always a period of adjustment to regain skills and expertise. Today, re-entry is even more difficult because the current exponential rate of progress in science and technology leaves those who take time out even further behind than was the case two generations ago, with the result that new skills and even new fields must often be mastered in order to come up to par.

One might applaud the inventiveness of women who manage to find their way. But many find it too hard and become discouraged. What is needed is a less rigid and more humane system that would allow women to sustain a productive science career in academia. Relaxation of timelines for tenure would be a major step forward. I shall discuss this proposal later.

Issues Concerning Comparative Psychology of Men and Women

There is much literature on the comparative psychology of women and men and speculation about its effect on their relative ability to do science.[15] It is said that on average women are kinder, gentler, and less aggressive than men, that they tend to seek help more often and are less self-reliant, that they are more collaborative and less competitive, that they look for approval more often because they are less independent and need more support from teachers and advisors. At the same time, women are viewed as persistent, able to stick with problems and ferret out solutions. The domestic environment teaches women the skill of working at several projects simultaneously. Women are said to be more emotional than men, although men tend to show anger more readily and more violently than women. People agree that many of these differences might be due to differential socialization of young men and women rather than to heredity.

The division of these characteristics between men and women is, of course, not regarded as absolute — it is acknowledged that many men seek help, work collaboratively and that many women are competitive and aggressive. Nonetheless, the overall difference of psychological type is used to argue that women are less suited to a career in science than men. But if one considers the ability to think scientifically and carry out scientific investigation, empirical evidence shows this argument to be unfounded;[15] furthermore, as I shall argue later, the so-called "female" characteristics at issue are in fact well-suited to the increasingly collaborative science of the twenty-first century. If, instead, one is considering success at making a career, differential socialization of men and women does present problems for women when they enter the work environment, putting them at a disadvantage in advancing their career.

Hard-science departments and the scientific establishment are historically male-dominated and a culture has developed that rewards competitiveness and assertion. Women often feel isolated, and in the absence of a community of empathetic colleagues, tend to lose confidence. When women use qualifiers such as "I think" and "I'm not sure but . . ." [16] this usually means that they are looking for the best way to accomplish a task and are open to persuasion if a better proposal is forthcoming, but to many, such qualifiers denote weakness. When women are not forceful, they are often excluded from opportunities to participate in departmental and institutional decision-making. Women report that many decisions are made in casual settings when the men get together at the end of a long day in the lab and from which women are unintentionally excluded. Further difficulties arise when women faculty return to scientific work after taking time out for childbirth and child raising. For example, my tenure case was made more difficult than it should have been because of the conflicting departmental opinions about the fairness of my taking a two-year leave to work fulltime on research. Women often feel left out on their return, as if they had given up their right to influence department policies.

These attitudes often translate into inequities in salary and distribution of resources. Unfortunately, it is usually the self-reliant, uncompromising person that gets resources from the system and advances more quickly in the hierarchy than the quiet and more amenable person. Women in general do not fare well in that kind of competitive atmosphere. To be sure, there will always be competition among scientists but the granting of an award or the assigning of departmental resources should be determined by the quality of the work and the need of the investigator and not by the degree of pressure from the requesting scientist. A recent survey of 9000 life scientists by American Association for the Advancement of Science (AAAS) showed that there was little difference in the salaries of male and female new assistant professors, but that a significant gap developed over the time of a career, such that a senior scientist was earning one third less than her male equivalent.[17, 18] Another example is to be found at MIT where a 1999 study showed that the salaries and lab space of senior and very accomplished women at MIT were inferior to those of their male colleagues.[19] (See Nancy Hopkins's article "Diversification of a University Faculty" in this *NEJPP*.) Once the problem was recognized faculty and administration worked together to remedy the inequities.

Conditions and attitudes are improving as the percentage of women science faculty members increases, but the trend needs to continue so that more women will seek the rewards of staying active in academic science.

Future Promise for Women in Science

The good news for women scientists is that modern science is becoming increasingly collaborative and that successful teamwork requires many of the qualities associated with the female stereotype. This trend together with critical changes in the policies and culture of science departments will encourage women to remain in the mainstream of academic science and will also serve to strengthen the disciplines.

Collaboration is now important not only because scientific knowledge has advanced to the point where it is fruitful to bring many disciplines to bear on solving common problems but also because the development of new technologies requires collaborations between individuals whose expertise is specialized. NIH recognizes the importance of collaborations and is introducing a policy that will allow multiple principle investigators on grant proposals in order "to maximize the potential of team science efforts."[20] Partnerships between scientists at different institutions, between scientists in universities and industry, between scientists in universities and hospitals are now common in all fields. Thanks to the advancement of telecommunications, today's scientists can not only collaborate with colleagues in other countries thousands of miles away, but they are able to do it in real time. Global collaborations can be very important. For example, in 2003, The World Health Organization organized a "collaborative multicenter research project" that drew upon eleven research laboratories from ten countries asking them to analyze the SARS virus that caused an outbreak of respiratory disease. These laboratories from across the world worked as one team, consulting daily with each other, sharing results and samples. It took this collaboration only one month to identify the SARS virus.[21]

Those who collaborate well and can work in teams will be valued. It helps a collaboration to include those who listen, who recognize the limits of their own knowledge, who give credence to the expertise of others and who offer their own when appropriate. It is well to have someone who will negotiate calmly about intellectual property rights and public disclosure with industry partners. Ironically, these are the qualities that constitute the female stereotype. The quality of competitiveness at the heart of the male stereotype no doubt has its place also, along with personal drive and ambition. There are great scientists who evidently function best in this way, as for example the MIT scientist who recently expressed his dissatisfaction at having a competing laboratory within the Institute.[22]

Unfortunately, the present evaluation system at most universities focuses on independent research achievement and does not value sufficiently contributions to collaborative research. Teaching is judged either subjectively from colleague assessments or student evaluations. Research achievement is measured by the number of one's publications in refereed journals, the number of times one's articles are cited by others, the number of one's review articles, books, and monographs, the number and dollar amount of one's research and training grants, and the number of times one has been invited to be a keynote speaker or give a seminar. The evaluation system gives preferential credit to such things as first authorship, status of PI on the project, projects based at the home institution, and most importantly, strong independent research programs rather than collaborations outside the campus. Another problem is that the system relies heavily on numbers and does not consider sufficiently such things as the significance of the project, the challenges it presents. the difficulties encountered during the investigations, the availability of grants and the publication rate normal to the field; the goal of the probationary scientist, therefore, often becomes the production of an adequate number of publications. I have heard senior faculty members advise probationary faculty to carry out a "safe" project rather than follow an interesting but difficult lead because it will result in easy publications. This advice is given in good faith to avoid jeopardizing the tenure of the candidate. The consequence of this system, however, is that merely competent scientists who have learned to manage the system will be rewarded, whereas creative scientists working in a challenging field who take longer to get papers published are put at a disadvantage. This reliance on numbers may also be unfair to women, who, assert former National Science Foundation Fellows in interviews with Dr. Sonnert of Harvard University, tend to publish fewer but more comprehensive papers than men.[23] Sonnert confirmed these assertions in a small study of biology faculty, where he found that women's articles received significantly more citations than men's articles.[24]

What is needed now is an evaluation system that judges the quality of the science, taking into account the present day challenges and opportunities in research and teaching. We need to broaden our interpretation of what makes a good scientist. We must accept that many scientists today are engaged in team projects rather than independent research; the projects are such that no one can master all the technologies and fields needed to tackle many research questions, and there is therefore sharing of investigative responsibilities. We should acclaim the involvement of a faculty member in collaborative efforts and judge the creativity of the partnerships forged. We should look at ways to credit those who specialize in teaching at the university level. We should attach importance to proposals that serve not only the research agenda of the scientist but also the learning of the students. We should assess how well the scientist manages to keep up with the burgeoning literature in the field. We should weigh how well the scientist functions in the research team, assess the import of his contributions, and judge the productivity of the team. These should all be matters for consideration when personnel evaluations are made for merit and promotion.

The introduction of flexibility in the timeline to tenure would be a major improvement in personnel policies; adjustments for both men and women should be made in response to both the varying legitimate demands of personal lives and also eccentricities of research progress. At the moment, a faculty member is out of a job if she has not published enough in the first six years of her appointment. Obviously, the mechanism for achieving flexibility would require much discussion among the scientific community. One possibility might be to undertake regular reviews during the pre-tenure years in order to determine the status of the faculty member with options for example to terminate a contract, to approve a change in responsibilities, to reset the date of the tenure decision year. The advantage to the university would be that when a faculty member did come up for tenure, she would be judged at her full potential and expectations would be high. The rigidity of the present system serves neither faculty members struggling to achieve nor the university striving to identify and retain excellent scientists.

A flexible time frame is essential for women in their childbearing and child-rearing years when emotional involvement with family concerns often occupies them at the expense of their progress in science. Women and the science community at large would be better served if the system respected their need to find alternate ways to travel the career path and measured the quality of their contributions *en route*. Flexibility would also benefit other young scientists. We all know that some projects require more time than others to reach publication stage. We need to give our younger scientists the opportunity to follow unexpected leads in their research, to make mistakes and learn from them, to adjust midstream if they have miscalculated. The present arrangement endorses the rapid production of insignificant work. It may be that work in progress needs more time before its significance can be adequately assessed. Universities would benefit by nurturing potentially excellent scientists whose research has the promise to be substantive but is progressing more slowly than the standard time frame allows.

Without the strictures of time and the necessity of developing a fully independent research program, women's full potential for scientific achievement will more readily be achieved. Meanwhile, it is important to continue efforts that will improve the work environment for women. In the future, when women hold a reasonable percentage of positions at all levels of the academic hierarchy, the social networks currently available to men will also be there for women. Women, like men, will have confidence and make progress because they will be working in a supportive and friendly environment, where they are accepted as members of the club. But until that time comes, women need institutional support to preserve equity in resource allocation, to improve mentoring, to provide access to social and industrial networks and to promote opportunities for interaction with the decision-makers in science. Unless such support is forthcoming, women will have a very difficult time keeping up with their male counterparts, who in general do not face these challenges.

Departments should institute formal procedures to ensure that resources such as space and equipment are intelligently and fairly allocated. Informality in that process encourages cronyism. It should not always be the forward, self-assured and pushy who get the extra space, the extra research assistant and the reduced teaching load. Steps should also be taken to make certain that service responsibilities within the department are equally shared and that the women faculty members are neither given token committee appointments nor asked to serve on an excessive number of committees that are looking for female representation. This latter will become less of a problem as the number of women faculty increase, but in the meantime junior women and minorities need protection from this particular kind of work sink.

Institutions should put together processes whereby secretarial and support services, such as purchasing, plumbing, and carpentry, respond as quickly and attentively to requests from women faculty as from men. There should be no possibility of lockerroom deals by which men get preferential treatment for lab maintenance work. Labs must function as well for female as for male scientists.

Women, like men, need to develop a network of contacts both within and beyond the department; they need friendly, experienced senior colleagues interested in counseling them in professional and personal matters relating to their work. The dearth of senior women in most science departments makes it difficult for junior women to find senior mentors with personal experiences similar to their own. Departments should formalize a mentoring program and supplement their own resources through such organizations as Mentornet,[25] an e-mentoring network. Senior women from across the science departments might work together to cultivate a community spirit for the junior women faculty. Departments might put together a small advisory committee for each new faculty member, consisting perhaps of a junior and a senior faculty member, whose function would be to act as a sounding board on career matters and to advocate for the faculty member as need arises. This would be particularly helpful to women who are trying to function in a male culture.

Women often need help to make network connections outside their institution. The Department can help by to inviting female as well as male seminar speakers and providing opportunities for women as well as men to meet with reviewers and site visitors from Washington and other universities. At the national level also, more effort should be made to involve a significant percentage of women on study sections, task forces, and policy committees of federal agencies. Not only does participation in these groups provide networking opportunities at an influential level for women committee members, but the women members in turn will be able to network for their junior colleagues. In a recent article in Nature,[26] Barres cites gender blind studies showing an unintended selection bias in national competitions for funding and awards. He writes that an increase in the number of female judges in the prestigious National Institute of Health (NIH) Pioneer award competition resulted in an increase of female winners from zero to 50 percent; originally the selection committee had been 94 percent male.

It is also critical that universities assist women faculty to enlarge their contacts with industry, which will, among other things, lead to appointments on Science Advisory Boards. That such help is needed is attested to by a recent study showing that over a thirty-year period women faculty have sought patents at 40 percent of the rate of men faculty members.[27] Although this gender gap has decreased within the last ten years, it is still large. Interviews with women and men faculty members suggest that this difference is largely due to the lack of industry/academic connections available to women and the concern expressed by women that the effort to patent would be another time-consuming element in the struggle to balance teaching and research, and would not yield university rewards.

Institutions should take advantage of federal and regional funding to recruit and retain women scientists. For example, NSF through its ADVANCE program seeks to increase the participation and advancement of women in academic science and engineering careers.[28] Such a grant to the University of Washington[29] supports professional development workshops for women faculty and graduate students and provides regular networking opportunities and professional consultants as required for women faculty; the grant provides transitional support to faculty in science departments who are undergoing significant transitions such as the birth or adoption of a child, personal medical needs, family illness, caring for an elderly parent, or who require assistance in balancing personal life and career goals. As part of the grant program the University is also exploring policy transformations, such as part-time tenure track options, best practices for facilitating dual career opportunities and best practices for family leave

The moment when women seek to re-enter science after a hiatus for childrearing is particularly challenging. Even when the women are well-qualified, their science and working skills have been in limbo for several years and they are out of touch with the theories and practice of their discipline. They need help to enable their return to the mainstream of science now that they are ready to give it their full attention. Federal, state, and university programs to support such women for two years in a lab would reap great benefits — a budget might provide for supplies to the host laboratory, travel to conferences, a small stipend, books and other professional costs associated with re-entry into the community of scientists. Institutions might also encourage their own productive research faculty to support and mentor a returning scientist by providing a limited amount of research support. I found my two years as a senior post-doc invaluable precisely because they provided me with science experience, an excellent mentor, and a network for future support.

In sum the gender gap that exists in the senior ranks of the hard scientists is due in part to women scientists retreating from the high pressured atmosphere of academic science in response to the difficulties of balancing their personal and professional lives, and in part to the non-supportive environment of the male culture in the science establishment. Changes in personnel procedures and improved strategies by universities and federal agencies to retain women scientists could reduce this gender gap, especially as modern science requires many of the psychological characteristics associated with the female stereotype. It may have been unwise for Larry Somers to raise the issue of women's innate aptitude for science at the NBER Conference but I am grateful that he did. As he intended, his remarks have engendered much needed discussion of the obstacles facing women who wish to claim their right to the full experience of a science career. The solutions are not going to be easy but the problems cannot be ignored.

Notes

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