Harvard President Summers on Why There are So Few Women in Science at Elite Institutions

These are excerpts from remarks by Lawrence H. Summers, then President of Harvard University, at a Conference on Diversifying the Science & Engineering Workforce, January 14, 2005. Several women scientists walked out in protest of these remarks, which quite rightly caused a storm of controversy. Summers is now (June, 2009) the head of President Obama's Council of Economic Advisors. Summers remarks are included here as an example of how I Q tests have been used to try to justify gender inequality.

I asked Richard, when he invited me to come here and speak, whether he wanted an institutional talk about Harvard's policies toward diversity or whether he wanted some questions asked and some attempts at provocation, because I was willing to do the second and didn't feel like doing the first. And so we have agreed that I am speaking unofficially and not using this as an occasion to lay out the many things we're doing at Harvard to promote the crucial objective of diversity. There are many aspects of the problems you're discussing and it seems to me they're all very important from a national point of view. I'm going to confine myself to addressing one portion of the problem, or of the challenge we're discussing, which is the issue of women's representation in tenured positions in science and engineering at top universities and research institutions, not because that's necessarily the most important problem or the most interesting problem, but because it's the only one of these problems that I've made an effort to think in a very serious way about. ....

There are three broad hypotheses about the sources of the very substantial disparities that this conference's papers document and have been documented before with respect to the presence of women in high-end scientific professions. One is what I would call the-I'll explain each of these in a few moments and comment on how important I think they are-the first is what I call the high-powered job hypothesis. The second is what I would call different availability of aptitude at the high end, and the third is what I would call different socialization and patterns of discrimination in a search. And in my own view, their importance probably ranks in exactly the order that I just described. ...

The second thing that I think one has to recognize is present is what I would call the combination of, and here, I'm focusing on something that would seek to answer the question of why is the pattern different in science and engineering, and why is the representation even lower and more problematic in science and engineering than it is in other fields. And here, you can get a fair distance, it seems to me, looking at a relatively simple hypothesis. It does appear that on many, many different human attributes-height, weight, propensity for criminality, overall IQ, mathematical ability, scientific ability-there is relatively clear evidence that whatever the difference in means-which can be debated-there is a difference in the standard deviation, and variability of a male and a female population. And that is true with respect to attributes that are and are not plausibly, culturally determined. If one supposes, as I think is reasonable, that if one is talking about physicists at a top twenty-five research university, one is not talking about people who are two standard deviations above the mean. And perhaps it's not even talking about somebody who is three standard deviations above the mean. But it's talking about people who are three and a half, four standard deviations above the mean in the one in 5,000, one in 10,000 class. Even small differences in the standard deviation

will translate into very large differences in the available pool substantially out. I did a very crude calculation, which I'm sure was wrong and certainly was unsubtle, twenty different ways. I looked at the Xie and Shauman paper-looked at the book, rather-looked at the evidence on the sex ratios in the top 5% of twelfth graders. If you look at those-they're all over the map, depends on which test, whether it's math, or science, and so forth-but 50% women, one woman for every two men, would be a high-end estimate from their estimates. From that, you can back out a difference in the implied standard deviations that works out to be about 20%. And from that, you can work out the difference out several standard deviations. If you do that calculation-and I have no reason to think that it couldn't be refined in a hundred ways-you get five to one, at the high end. Now, it's pointed out by one of the papers at this conference that these tests are not a very good measure and are not highly predictive with respect to people's ability to do that. And that's absolutely right. But I don't think that resolves the issue at all. Because if my reading of the data is right-it's something people can argue about-that there are some systematic differences in variability in different populations, then whatever the set of attributes are that are precisely defined to correlate with being an aeronautical engineer at MIT or being a chemist at Berkeley, those are probably different in their standard deviations as well. So my sense is that the unfortunate truth-I would far prefer to believe something else, because it would be easier to address what is surely a serious social problem if something else were true-is that the combination of the high-powered job hypothesis and the differing variances probably explains a fair amount of this problem.

There may also be elements, by the way, of differing, there is some, particularly in some attributes, that bear on engineering, there is reasonably strong evidence of taste differences between little girls and little boys that are not easy to attribute to socialization. ... And so, the human mind has a tendency to grab to the socialization hypothesis when you can see it, and it often turns out not to be true. The second empirical problem is that girls are persisting longer and longer. When there were no girls majoring in chemistry, when there were no girls majoring in biology, it was much easier to blame parental socialization. Then, as we are increasingly finding today, the problem is what's happening when people are twenty, or when people are twenty-five, in terms of their patterns, with which they drop out. Again, to the extent it can be addressed, it's a terrific thing to address.

The most controversial in a way, question, and the most difficult question to judge, is what is the role of discrimination? To what extent is there overt discrimination? Surely there is some. Much more tellingly, to what extent are there pervasive patterns of passive discrimination and stereotyping in which people like to choose people like themselves, and the people in the previous group are disproportionately white male, and so they choose people who are like themselves, who are disproportionately white male. 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 it is something that happens, and it is something that absolutely, vigorously needs to be combated. On the other hand, I think before regarding it as pervasive, and as the dominant explanation of the patterns we observe, there are two points that should make one hesitate. The first is the fallacy of composition. No doubt it is true that if any one institution makes a major effort to focus on reducing stereotyping, on achieving diversity, on hiring more people, no doubt it can succeed in hiring more. But each person it hires will come from a different institution, and so everyone observes that when an institution works very hard at this, to some extent they are able to produce better results. If I stand up at a football game and everybody else is sitting down, I can see much better, but if everybody stands up, the views may get a little better,

but they don't get a lot better. And there's a real question as to how plausible it is to believe that there is anything like half as many people who are qualified to be scientists at top ten schools and who are now not at top ten schools, and that's the argument that one has to make in thinking about this as a national problem rather than an individual institutional problem. The second problem is the one that Gary Becker very powerfully pointed out in addressing racial discrimination many years ago. If it was really the case that everybody was discriminating, there would be very substantial opportunities for a limited number of people who were not prepared to discriminate to assemble remarkable departments of high quality people at relatively limited cost simply by the act of their not discriminating, because of what it would mean for the pool that was available. And there are certainly examples of institutions that have focused on increasing their diversity to their substantial benefit, but if there was really a pervasive pattern of discrimination that was leaving an extraordinary number of high-quality potential candidates behind, one suspects that in the highly competitive academic marketplace, there would be more examples of institutions that succeeded substantially by working to fill the gap. And I think one sees relatively little evidence of that. So my best guess, to provoke you, of what's behind all of this is that 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, that in the special case of science and engineering, there are issues of intrinsic aptitude, and particularly of the variability of aptitude, and that those considerations are reinforced by what are in fact lesser factors involving socialization and continuing discrimination. I would like nothing better than to be proved wrong, because I would like nothing better than for these problems to be addressable simply by everybody understanding what they are, and working very hard to address them.

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Let me just conclude by saying that I've given you my best guesses after a fair amount of reading the literature and a lot of talking to people. They may be all wrong. I will have served my purpose if I have provoked thought on this question and provoked the marshalling of evidence to contradict what I have said. But I think we all need to be thinking very hard about how to do better on these issues and that they are too important to sentimentalize rather than to think about in as rigorous and careful ways as we can. That's why I think conferences like this are very, very valuable. Thank you.

Questions and Answers

Q: Secondly, you make a point, which I very much agree with, that this is a wonderful opportunity for other universities to hire women and minorities, and you said you didn't have an example of an instance in which that is being done. The chemistry department at Rutgers is doing that, and they are bragging about it and they are saying, "Any woman who is having problems in her home department, send me your resume." They are now at twenty-five percent women, which is double the national average-among the top fifty universities-so I agree with you on that. I think it is a wonderful opportunity and I hope others follow that example. One thing that I do sort of disagree with is the use of identical twins that have been separated and their environment followed. I think that the environments that a lot of women and minorities experience would not be something that would be-that a twin would be subjected to if the person knows that their environment is being watched. Because a lot of the things that are done to women and minorities are simply illegal, and so they'll never experience that.

LHS: I don't think that. I don't actually think that's the point at all. My point was a very different one. My point was simply that the field of behavioral genetics had a revolution in the last fifteen years, and the principal thrust of that revolution was the discovery that a large number of things that people

thought were due to socialization weren't, and were in fact due to more intrinsic human nature, and that set of discoveries, it seemed to me, ought to influence the way one thought about other areas where there was a perception of the importance of socialization. I wasn't at all trying to connect those studies to the particular experiences of women and minorities who were thinking about academic careers.

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Q: What about the rest of the world. Are we keeping up? Physics, France, very high powered women in science in top positions. Same nature, same hormones, same ambitions we have to assume. Different cultural, given.

LHS: Good question. Good question. I don't know much about it. My guess is that you'll find that in most of those places, the pressure to be high powered, to work eighty hours a week, is not the same as it is in the United States. And therefore it is easier to balance on both sides. But I thought about that, and I think that you'll find that's probably at least part of the explanation.