

Gender and Failures of Rationality in Economic Analysis

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Abstract:

While behavioral economics has awakened our discipline to the existence of non-rational aspects of human behavior, economists have rarely turned this insight on ourselves. This essay describes how failures of rationality—in particular, gender biases—have distorted economists’ own practices. First, a case study of economists’ research concerning gender “differences” in preferences is presented. Meta-analyses of this literature reveals how confirmation and publication bias have made the “findings” of this field unreliable. Next, examples are given of additional biases in research, followed by some examples of how biases affect policy recommendations. Lastly, examples are given of the way that gender bias distorts economists’ own actions, relative to scientific standards. This paper argues that were our discipline to remedy these failures of rationality in the area of gender biases, it would not only be less hostile towards women, but also more rigorous and reliable.

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Introduction

Economics has a problem with women. The recent study of the Economics Job Market Rumors (EJMR) on-line forum by student researcher Alice H. Wu (2017) finally brought this issue into the national news (Wolfers, 2017). She found that posts about women were far more likely to contain words about their personal and physical issues (including “hot,” “lesbian,” “cute,” and “raped”) than posts about men, which tended to focus more on academic and professional topics. The American Economic Association has since, and not unrelatedly, worked to develop an ethics code (Ad Hoc Committee to Consider a Code of Professional Conduct, 2018b, 2018a) as well as established a new AEA standing Committee on Equity, Diversity, and Professional Climate (American Economic Association, 2018).

As a woman who has been in the profession for over three decades, however, sexism in the profession is hardly news. Yet dismissive treat of women, and of issues that impact women more than men, comes not only from the sort of immature cowards who vent anonymously on EJMR, but even from men (and women) who probably don’t think of themselves as sexist. And biases against women are not just a question of personal, subjective values that have impact only in social and political realms. This essay discusses ways in which such biases *actually make our practice of economics less rational and scientific*.

I will begin with a detailed case study, and then go on to make some more general points.

Case Study: Economics Research on Gender and Risk

As economists, we like to think we are very sophisticated when it comes to research. But are still human beings, and so still subject to the cognitive biases that have explored by psychologists and, more recently, by behavioral economists. Thinking simplistically is one bias-creating cognitive shortcut. For example, we may think of groups as being either “the same” or “different” without paying attention to the *degree* of difference (Hyde, 2005). A second form of bias is “confirmation bias,” or the tendency to take more notice of evidence that confirms our pre-existing beliefs (Nickerson, 1998).

A few years ago, I became curious about claims such as “Women are more risk-averse than men”—or “are less competitive than men” or “are more altruistic than men”—that were popping up in the economics scholarly literature. Some articles claim that these differences are “fundamental.” They also often make allusions to stories about evolution, hormones, or genetics

as possible causes. Some draw the conclusion that men and women therefore need to be treated in categorically different ways in employment, investment advising, and so on. I decided to do a meta-analysis of the literature regarding risk. My results are described in Nelson (2014, 2015, 2016b, 2018).

I find that both simplistic thinking and confirmation bias are rife in the literature on gender and risk-aversion. Reexamining the data used in the economics and finance literature—drawn from survey questions, experiments such as lottery games, and actual investment portfolios—I find that the empirical results are actually quite mixed. Some studies find women to be the bigger, on average, risk-takers. Very many questions and experiments yield data in which a statistically significant difference cannot be found.

But even more importantly, I find that the best (that is, most precise) estimates of the *substantive size* of the difference between measures of men’s and women’s average risk aversion are quite small. It turns out that men differ from other men, and women differ from other women, to a far greater extent than the average man differs from the average women. In the stylized distributions shown below, Figure 1 approximates the distributions of male and female heights, where the means are about 2.60 standard deviations apart, and Figure 2 illustrates distributions whose means are .35 of a standard deviation apart. The “difference” in the risk distributions *is even smaller*. The most precise estimates suggest that the means are about .13 of a standard deviation apart (Nelson, 2014, Nelson, 2018). To put it another way, you can think of the men’s and women’s distributions having about a 95% overlap.

Figure 1

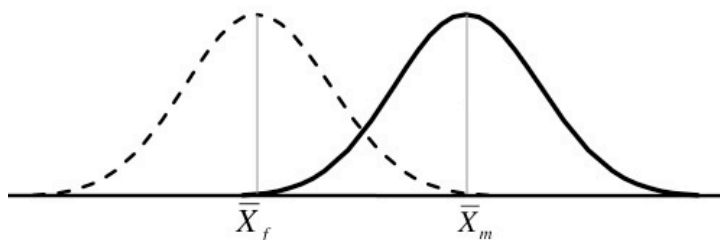
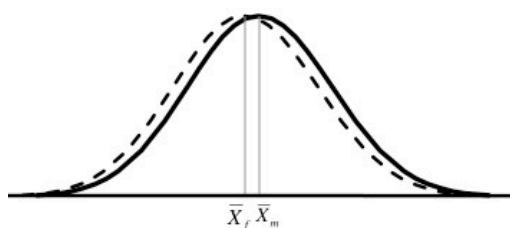


Figure 2



While this is not a finding of absolute “sameness,” it *is* a finding of far more similarity than difference. The sort of 0% overlap and 100% predictive, fundamental, categorical “difference” that is often extrapolated from the research studies is, in fact, soundly *refuted* by the empirical evidence. The case is not “Men are from Mars and Women are from Venus,” but rather, perhaps, “Men are from North Dakota and Women are from South Dakota.”

I suggest that, as a corrective, we researchers include measures of the *size* of a difference, as well as of similarity and overlap, in our studies, and remember to talk about them when addressing our colleagues and the media (Nelson, 2015, Nelson, 2017a, Nelson, 2018). We should also entertain alternative explanations. For example, while substantively larger degrees of “difference” are often found in studies of behaviors related to competition, the degree of overlap is still very substantial. And in a world where people tend to judge competitive behavior by women more harshly than the same behavior in men (Bowles, Babcock et al., 2007), acting less competitively may be largely a learned and defensive (as opposed to innately “preferred”) strategy.

What about the second type of bias I mentioned, confirmation bias? Sadly for the profession, I find ample evidence of risk-aversion researchers slanting the results in ways that confirm their own (stereotypical) beliefs (Nelson, 2014). For example, one article claims to find a “robust” “victory for gender difference” in spite of the fact that the authors find a statistically significant difference at the 5% level in only 1 out of the 12 measures examined (Beckmann and Menkhoff, 2008, discussed in Nelson, 2018). Another study merged the results from studies in which women on average took more risks than men with studies that leaned the other direction. The published article, as a result, failed to acknowledge the existence of most of this non-confirming data (Charness and Gneezy, 2012, discussed in Nelson, 2016b). Across the board, findings of “difference” are highlighted, much discussed, and often featured in the titles of articles. Meanwhile—driven by our profession’s fascination with *p*-values, as well as its gender bias—failures to find statistically significant gender differences are relegated to brief mentions and footnotes, at best, or else to the file drawer.

It’s long past time for our profession, which rightly aspires to do rigorous and scientific work, to wake up to its gender biases. Unfortunately, at least one study has suggested that the more people believe themselves to be rational and objective, the more likely we are to be fooled by our own prejudices (Uhlmann and Cohen, 2007).

Additional Biases in Research

At the broadest level, our discipline is gender biased in its definition, models, and methods. These favor realms of life and aspects of human behavior that are culturally associated with masculinity, and studiously ignore those traditionally associated with femininity. Presumably impersonal markets and rational choice form the core of the favored definitions, for example, to the exclusion of actual social and familial relations, emotions, and bodily needs. The economic agent is imagined as autonomous and rational; interdependence and emotion are denied. Competition is at the core of models; cooperation is sidelined. Quantitative methods and an attitude of detachment are favored, while qualitative methods are dismissed as “soft.” As a result, we tend, for example, to neglect such crucial phenomena as the role of emotional contagion in financial crises, or the role of cooperation (both positive and perverse) in the running of business firms. Having attached ourselves to a dogmatic “hammer” of particular models and methods, we end up treating everything as a “nail.” (Nelson, 1992, Nelson, 1995, Nelson, 1996).

Particularly damaging is the belief that our narrow set of habitual models and methods give us “objectivity.” We believe ourselves to be, like our “agents,” not only rational but able to accomplish our research as individuals, in an autonomous fashion. However, the current “crisis of replication” and “null hypothesis significance testing” controversies in psychology and biomedical research—just now gaining attention in economics—highlight the fact that science is in reality a *social* activity (Open Science Collaboration, 2015, Royal Statistical Society, 2015, The Academy of Medical Sciences, 2015, Christensen and Miguel, 2018). No one study, no matter how much a researcher attempts an attitude of distance and detachment, and no matter how mathematically sophisticated, has claim to truth. Considerable work in the philosophy of science (e.g., Kitcher, 2011), as well as critical work from feminist scholars (e.g., Keller, 1985), also emphasize that reliability in research requires both a fuller toolbox of methods and critique of the results from a diversity of viewpoints (Nelson, 1995, Nelson, 1996).

One can also identify bias in trends in the area of the study of gender and labor markets. While earlier studies explicitly looked into discrimination, the use of the term “discrimination” itself has steadily declined over time (Weichselbaumer and Winter-Ebmer, 2006). Economists prior belief, in general, seems to be that sexism doesn’t exist—or if it did, would be eliminated by competitive markets. Increasingly, confirming that belief has become the fashionable—and publishable—thing to do. Myriad economics studies now exist—especially in the higher-prestige

journals—that attempt to attempt to disprove or minimize the existence of sexist practices in labor markets. While it is certainly legitimate to control for some productivity-related factors in a wage regression, and select various populations to sample from, the use of specifications and data selection to try to explain *away* discrimination has become exaggerated to the point of becoming a campaign. Articles that can show no gap after, say, limiting the sample to only one profession or only entry-level positions, or include variables that themselves reflect sexism (e.g., “household responsibilities”), or include new “behavioral” variables, are considered interesting, have a chance of getting published in prestigious journals (Weichselbaumer and Winter–Ebmer, 2006), and make the news. Those that suggest that an unexplained wage gap could be due to discrimination, or that go beyond the wage gap to look at differences in opportunities, at harassment and other working conditions, or directly at the sexist attitudes and practices of the perpetrators of discrimination, have been generally less professionally acceptable.

Biases in Policy Recommendations

Sexist biases and stereotypes also creep into many economists’ policy recommendations, in both subtle and not-so-subtle ways. Recommendations regarding labor markets that (based on the research mentioned above) downplay any need for any policy action, or put the onus for combatting wage differentials and occupational segregation only on women (e.g., prescribing activities to change women’s “preferences” regarding competitiveness or skills in negotiation), reflect only one viewpoint: that of privileged persons who have not experienced sexism themselves.

As another example, consider articles about how to get Chief Executive Officers (who are mostly men) to act in the interest of others (shareholders). These prescribe incentivizing them with generous bonuses and stock options (Jensen and Meckling, 1976). Articles about how to make sure that nurses (mostly women) have the interest of others at heart suggest, on the other hand, keeping the pay *low*. They reason that then the job will only appeal to true altruists (Heyes, 2005, Brekke and Nyborg, 2010). Few seem to notice that such stereotyped reasoning might be relevant to discussing the gender wage gap.

As another example, I was, not long ago, at a conference at which two well-known (male) economists discussed the problem of widening income inequality, offering progressive taxation and an extension of opportunities for higher education as possible solutions. Afterwards, I suggested to another male economist that public support of high quality subsidized childcare and

early education should also be considered a possible remedy for inequality. Well-designed policies could reduce inequality by supporting low-income working parents (especially, given current patterns, mothers) as well make crucial investments—arguably more important, for many, than higher education—in the next generation. His reply was, “Oh, but that panel wasn’t about life course issues.”

A third example comes from a book I reviewed for the *JEL*. The book’s author claims that statistical discrimination against women is fair and allowable, because it treats women fairly *as a group* even if it disadvantages some *individual* women. Affirmative action for women, that attempts to even out the advantages historically enjoyed by men *as a group*, however, is considered by the author to be unfair, because it could disadvantage *individual* men. (Eswaran, 2014, discussed in Nelson, 2016a). It seems that only men deserve treatment as individuals?

Biases in Actions

Lastly, there is evidence that economists also tend to let sexist biases inform our actions. A recent study by two economists and two psychologists (Ceci, Ginther et al., 2014) takes a comprehensive view of women’s progress in academic science from early schooling through senior faculty status. Economics stands out among the mathematically-intensive fields (including engineering, physics, computer science, geoscience, and chemistry), and not in a good way. Looking at advancement from tenure-track into tenured status, the study reports that “Economics is an outlier, with a persistent sex gap in promotion that cannot be readily explained by productivity differences” (see also Nelson, 2009, Ceci, Ginther et al., 2014, p. 116).

Another recent study of a sample of faculty from biology, engineering, economics, and psychology found that economists were unique in *not* favoring action to promote gender diversity (Williams and Ceci, 2015). Faculty were asked to rank narrative summaries describing applicants for a tenure-track position that varied only in the gender of the pronoun used to describe the candidate. Overall, the 363 faculty surveyed preferred the female candidate to the male by a highly statistically significant 2:1 margin. Since women are still in the minority among science, technology, engineering and math faculty (Ceci, Ginther et al., 2014, pp. 77, 80-83), a likely explanation for these findings is that the “norms and values associated with gender diversity have become internalized in the population of US faculty” (Williams and Ceci, 2015, p. 5364). Except, that is, for economics faculty, who “rated identically qualified male and female candidates as equally hireable” (Williams and Ceci, 2015, p. 5362).

While economists consider ourselves “scientific,” a comparison of economists to those in other scientific fields, in regard to our behavior in and study of labor markets, suggests otherwise. It seems that, if we want to make economics a *science*—similar to engineering, physics, computer science, geoscience, chemistry, biology, and psychology—current gender biases are standing in the way.

Conclusion

Many are puzzled about why more women are not attracted to our field. This essay suggests that when a discipline treats women as members of a category rather than as individuals, dismisses many women’s experiences of prejudice and harassment, and systematically disdains topics and methods that do not conform to a macho norm, this result is perhaps not at all surprising. While this negative treatment, in some cases, arises from conscious hostility and a deliberate campaign to maintain male power, this essay suggests that a great deal of it can be attributed to unconscious biases and stereotyped habits of thought. A more rigorous and reliable discipline, as well as a more productive and diverse one, would result if these failures of rationality were recognized and addressed.

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