GENDER DIFFERENCES IN BEHAVIORAL TRAITS AND LABOR MARKET OUTCOMES

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Abstract:

Despite a policy push toward equality, substantial gender gaps in earnings and vertical gender segregation persist in the labor market. Studies point to gender-specific occupational sorting as one of the primary explanatory factors. But why do men and women sort into different careers? In this chapter, we document the evidence that suggests that gender differences along four behavioral traits may offer a plausible explanation.. Specifically, the consensus in the literature is that women, on average, exhibit greater risk aversion, lower levels of competitiveness, and less desire to negotiate as compared to men. Gender differences in social preferences are less robust, but women appear to be more sensitive to social context and framing. Importantly, there is no conclusive evidence on whether these differences are inherent or societal for any of the individual traits, although most studies point to the latter.

Keywords: Gender, Experiments, Labor, Risk Preferences, Competitiveness, Negotiation, Social Preferences

I. Introduction

Despite a recent policy push toward equality, considerable gender gaps in earnings and representation in senior management persist. The infamous earnings gap of 77 cents on the dollar in the United States features prominently in political rhetoric and campaign platforms. Recent salary data from the company review site Glassdoor reveals that 54% of the U.S. gender pay gap can be attributed to differential selection into industries and jobs by men and women. Blau and Kahn (2016) also find that much of the difference can be explained by sorting into occupations and jobs. Furthermore, longitudinal studies by Bertrand, Goldin and Katz (2010) find that minimal wage gaps at the entry level into a given job in a given industry, such as law or finance, grow tremendously as one tracks individuals over time. This is largely due to the fact that relatively few women attain top executive positions. Indeed, women represented a mere 4% of CEOs of Fortune 500 companies in 2016 (*Catalyst* 2017), and only 14% of senior S&P 500 executives were female in 2015 (CNNMoney, 2015).

Why do men and women sort into different careers? And why does the share of women in a given occupation decrease with seniority? As human capital investments of men and women converged over time, the unexplained portion of the gender difference in labor market outcomes has increased (Goldin 2014). In her controversial book, Sheryl Sandberg (2013) suggests that women do not "lean in" enough: they prefer not to compete for the best job, shy away from taking risks, and abstain from negotiating for promotions. In this chapter, we address the validity of this argument by reviewing recent experimental studies on gender differences in preferences and their connection to labor market outcomes. Controlled experiments are particularly well-suited to studying these questions, because they allow the researcher to isolate the role of beliefs and preferences in explaining the gender wage gap. Experimental settings also avoid the confounding factors that inevitably result from endogenous selection into occupations and managerial roles. On the other hand, because lab experiments by necessity greatly simplify the environment, the applicability of their results to specific real-world situations can be somewhat diminished. To address this concern, we supplement our discussion of experimental findings with relevant results from complementary field experiments and observational studies.

We will first document the *prima facie* evidence of the existence of gender differences along four different traits we believe are particularly relevant to labor market outcomes: risk taking, competitiveness, the propensity to negotiate, and social attitudes. We then ask whether observed preference differences (if any) are universal, or whether subtle societal cues and specific contexts trigger gender differences. For each trait, we conclude by assessing the labor market implications of the evidence and ask whether markets can be designed to improve outcomes given what we have learned.

II. Gender Differences in Risk Preferences

The theory of compensating differentials implies that risk-taking will be rewarded in the marketplace; jobs that require exposure to physical or financial risks will have higher salaries to compensate for the additional risk, all else equal. In practice, these occupations also are likely to be dominated by men. This could be because women are more risk-averse than men, as suggested by a broad range of studies in economics and psychology, and only more risk-tolerant women select into these professions. Selection could be exacerbated by stereotypes about women: if women are seen as more risk-averse than men, they will be less welcome in risky professions. Indeed, occupations where risk-taking behavior is highly regarded often show the most substantial gender gaps in representation and earnings. For instance, women's representation in finance is very low, consisting of about 5% of the traders and as little as 1-2% of hedge fund managers (Coates, 2012; weforum.org, 2015). Women earn just 66 cents for every dollar earned by a man in this industry (Goldin, NYT 2014).[1]

In psychology, risk aversion is assessed using self-reported willingness to take risks across a variety of domains – recreational, social, health, and financial – and is likely to reflect aversion to danger or loss. Economists' notion of risk aversion arises from the convexity of the utility function; diminishing marginal utility implies that an agent will prefer the expected value of a gamble to the gamble itself. This view thus abstracts from physical risk or danger, focusing instead on variability of monetary payoffs. To elicit risk preferences, experiments use incentivized tasks – decisions with real monetary consequences – that are structured to reveal properties of the underlying utility functions of subjects. In this section we review the experimental evidence on risk preferences, and then discuss the consequences of gender differences in risk tolerance for wealth and earnings.

The experimental literature on gender differences in risk aversion is extensive and has been previously reviewed by Eckel and Grossman (2008b), Croson and Gneezy (2009), and more recently by Niederle (2016). Across environments and methods, the most common finding is that women are slightly more risk-averse than men. However, the existence and the magnitude of the gender difference may depend on the elicitation method and the details of the context and framing.

The vast majority of experimental studies that measure gender differences in risk preferences employ the methodology of choices (or valuations) over lotteries with known probabilities and outcomes. We consider three examples. The most widely used procedure, developed by Holt and Laury (2002), hereafter HL, asks subjects to make ten binary choices between a less-risky and a more-risky lottery. Payoffs are based on one randomly-selected decision. The authors examine both low and high stakes treatments, showing that, when stakes are low ($0.10-$3.85), women are slightly more risk-averse than men. However, the gender gap disappears in the higher payoff treatments ($2 - $77), because men behave more like women, becoming more risk-averse. Many subsequent studies using HL failed to find

[1] http://www.nytimes.com/2014/04/24/upshot/the-pay-gap-is-because-of-gender-not-jobs.html?_r=0

gender differences, spurring Filippin and Crosetto (2016) to perform a meta-analysis. They conclude that men are less risk-averse than women with HL, but that the difference is small in magnitude relative to other methods.

Two additional methods adopt a simpler set of decisions, involving only 50/50 gambles, which are easier for subjects to understand. Eckel and Grossman (2002; 2008a), hereafter EG, propose a method whereby subjects choose one out of five (or six in later versions) 50/50 lottery options, but with increasing variance and mean payoff. Charness and Gneezy (2012) employ a method originally introduced by Gneezy and Potters (1997). Here subjects receive a fixed sum of money, and can invest any part of it in a project with a 50/50 chance of a high return (typically 2.5 or 3 times the investment) or zero. Both of these methods tend to find strong gender differences.

Crosetto and Filippin (2016) compare these three elicitation methods, as well as a fourth, "bomb" or balloon task, and find systematic differences across measures. Among the three we discuss, only HL fails to find a gender difference in their sample.[2] Dave et al (2010), Charness et al (2013), and Charness et al (2016) report evidence that more complex methods, such as HL, may mask gender differences.[3]

The evidence supporting a small but significant gender difference with men being more likely to take risks is widespread, but a few studies find the reverse effect. In their survey, Eckel and Grossman (2008b) argue that explicit framing or context variations can eliminate or reverse the usual gender difference. For example, Schubert et al (1999) compare abstract gamble choices with decisions framed as "investment" or "insurance." The framed decisions (unlike the abstract ones) produce no significant gender differences. Wiedland et al (2014) show that the gender differences in risk attitudes are most pronounced when the task is framed as a gamble. Pondorfer et al (2017) argue that culture-specific stereotypes may be more important that preferences in driving gender differences. . These studies find that under the right circumstances, women may be willing to take greater risks than men.

Whether risk preferences are stable across a broad range of situations remains an open question. Economists tend to think of individuals as having a domain-general utility function with a risk aversion parameter that applies across all environments. This leads to the belief that a lab-elicited risk parameter using monetary incentives should predict behavior in a variety of contexts. In contrast, psychologists' methods recognize that risk-taking may vary across environments. Weber et al (2002) assess risk-taking across different domains, including financial decisions (investing and gambling), health/safety, recreational, ethical, and social decisions. Subjects complete a set of questions that ask how risky an activity is, and how likely they are to engage in that activity. Women are more likely to avoid risky activities in all except the social domain. However, most of this difference is absorbed by the

[2] The bomb task also shows no gender difference, perhaps due to the additional context in this task.

[3] The HL task is an example of an elicitation procedure known as a multiple price list or MPL. Charness et al (2013) argue that MPL elicitations are less likely to detect gender differences in preferences because of their inherent overly complex structure. Gillen et al (2015) show that risk attitudes of men and women are statistically indistinguishable when considering MPLs, even though all other measures show that women are more risk-averse.

answers to the first set of questions – how risky an activity is perceived to be. Women perceive many actions as riskier than men.

Because incentivized methods are costly, other researchers have sought survey questions that can serve as a low-cost substitute for incentivized tasks. Dohmen et al (2011) consider data from a simple question first used on the 2004 German Socio Economic Panel (SOEP) survey that asks a representative sample of the German population, "How do you see yourself: are you generally a person who is fully prepared to take risks or do you try to avoid taking risks?" Using this question and other risk-related questions, the authors find that women self-report significantly lower willingness to take risks across domains (financial, health, career).[4]

An additional question, which most studies fail to address, is whether incentivized measures predict behavior better than surveys. While a number of studies show correlations with self-reported risky behaviors for both incentivized and survey measures, the jury is still out on which might be the most externally valid measure of risk aversion (see Galizzi et al (2016) for a recent comprehensive test).

IIB. Explaining Gender Differences in Risk Attitudes: Loss Aversion, Subjective Probabilities, and Ambiguity Aversion

The measurement of risk aversion in laboratory experiments assumes perfect knowledge of probabilities and outcomes, and lab experiments present decisions that are consistent with these requirements. However, preferences over lotteries between men and women can arise for reasons other than differences in risk preferences. Women may have greater aversion to losses, or may have different subjective valuations of probabilities, as in prospect theory (Tversky and Kahneman 1992). Indeed, experimental studies confirm greater loss aversion by women (Schmidt and Traub 2002; Gachter et al 2007; Rieger et al 2011; Rau 2014), and there is some evidence that women exhibit stronger probability weighting (Fehr-Duda et al 2006).[5]

Uncertainty about probabilities or payoffs may also play a role. Real-life choices often are made under such ambiguity, but evidence on its effect is mixed, with some lab studies finding greater ambiguity aversion in at least some domains (Schubert et al 2000) and others the reverse effect (Fehr-Duda et al 2006). In the field, Carpenter and Cardenas (2013) simultaneously test for gender differences in risk attitudes in four different domains: gains,

[4] Crosetto and Filippin (2016) show that answers to survey questions correlate strongly with EG, weakly with HL, and insignificantly with GP. However, the investment and gamble subscales of Weber et al (2002) correlate strongly with EG and GP and insignificantly with HL. Falk et al (2016) analyze this question further in a later wave of SOEP that includes additional hypothetical choice questions.

[5] Some evidence suggests that gender difference in risk aversion, loss aversion or probability weighting may be related to mathematical ability or financial knowledge. See, e.g. Tanaka et al (2010) Dwyer et al (2002), Andersson et al (2016).

losses, ambiguity, and risk-pooling, and find that women are significantly more risk-averse than men in all four domains.[6]

IIC. Do Gender Differences in Risk Attitudes Correlate with Economic Outcomes?

The important question for us is whether and how differences in risk preferences affect the economic outcomes for women, including education, wealth, and occupational choice. In this section we review the literature available to answer this question.

Education

Risk preferences might affect educational outcomes in two respects. First, risk preferences might partly determine educational choices, with women less likely to choose technical fields where they feel success is a risky prospect. Risk aversion may also affect test-taking strategies, affecting educational attainment through a different channel.

First, do risk attitudes affect student's educational choices? Buser et al (2014) measure risk attitudes of 400 children in four schools in the Netherlands. They use EG along with the survey question from SOEP mentioned above. The authors find that risk attitudes significantly predict competitiveness, which in turn is strongly positively correlated with choosing more "prestigious" academic tracks (math and science), even conditional on academic ability (see Section III for further discussion of gender differences in the willingness to compete). Aversion to risk appears to play a role in whether women choose STEM fields of study, which carry higher earnings.

Second, do risk attitudes affect test performance? Baldiga (2013) explores whether women are less willing than men to guess (a risky decision) on the SAT (a multiple-choice test which is essential for college admissions in the U.S. and is predictive of college grades). The experiment consists of 20 practice questions from the (then) SATII history subject test.[7] Women are significantly less likely than men to guess, even after controlling for knowledge and beliefs about knowledge. Furthermore, this gender gap in guessing results in lower overall scores for women as compared to men with the same level of knowledge. In her study, greater risk aversion explains about one-third of the gender gap in the propensity to guess. Tannenbaum (2012) analyzes data from the 2001 mathematics SAT and confirms that about 40% of the gender gap in test scores (about 30 points or 6%) can be attributed to gender differences in risk aversion.

Finance and Investing

We consider two aspects of finance and investing: investment portfolios and the labor market for finance professionals. Most of this evidence is from field (observational) data, but some experimental evidence is also available that offers insights into the mechanisms behind the results.

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[6] In the laboratory, Shurchkov and van Geen (2017) find significant gender differences in risk aversion in the domains of gains and losses, but not in ambiguity aversion in their sample. A similar result is found in Borhans et al 2009.

[7] The questions were retrieved from the online test bank in 2010.

Field data reveal that women investors exhibit greater degrees of risk-aversion in financial decision making, on average: they tend to trade less actively than men (Barber and O'Dean 2013), hold less risky retirement investment portfolios (Jianakoplos and Bernasek 1998; Barber and O'Dean 2001), invest more readily in risk-free assets (Hariharan et al 2000), and hold less of their portfolio in equities (Clark et al 2017). Investment in stocks carries a substantially higher return than bonds, and so has a strong effect on wealth holdings. Risk preferences are shown to play a role in male/female differences in investment portfolios in several studies using different samples of adult investors (van Rooij et al 2011 in the Netherlands; Halko et al 2012 in Finland; Almenberg and Dreber 2015 in Sweden). Lusardi and Mitchell (2014) focus primarily on the role of financial literacy, but their results also show risk aversion to be a significant determinant of behavior in a representative sample in the US. Thus overall women's greater risk aversion appears to substantially affect investment portfolios and wealth.

However, it is also the case that risk-taking and aggressive investment behavior can backfire, leading to lower returns. Barber and O'Dean (2001) use account data for over 35,000 households from day traders in a large discount brokerage to show that men trade 45% more than women, which leads to a significant reduction in men's net returns relative to their female counterparts.

Focusing on financial industry professionals offers a comparison between individuals whose knowledge and risk preferences might be more comparable. Because risk-taking behavior tends to be expected and rewarded in industries such as finance, risk tolerance is one of the important traits upon which women select into careers within those industries. Several studies address this question. While Atkinson et al (2003) find no gender differences in risk-taking in their sample of U.S. mutual fund managers, Niessen and Ruenzi (2007) observe that female fund managers are more risk-averse, follow less extreme and more consistent investment styles, and trade less than male managers, though they do not differ in average performance. Others report that female fund managers hold more conservative portfolios, preferring bonds over equities and passive over active management (Beckmann and Menkhoff 2008; Rothstein Kass Institute 2013). While women financial advisors do not exhibit inferior performance, stereotypes about women's risk preferences nevertheless may impact their success. Atkinson et al (2003) find that flow of investment moneys to female-managed funds is lower, and Madden (2012) shows that, although performance is no different, female brokers receive lower-quality account referrals.

A laboratory experiment by Eckel and Fullbrunn (2015) provides an opportunity to observe trading patterns by men and women without the selection effects seen in the financial sector. They utilize a controlled setting that mimics the fundamental characteristics of a real-world asset market. Because the experimenters know the fundamental value of the assets, determined by dividend streams specified in the market, they are able to detect "bubbles" – that is, when the price rises above fundamental value. At the aggregate level, all-male asset markets are more volatile, producing significantly higher bubbles and crashes than all-female markets. Greater risk aversion of female traders in the experiment seems to play some role in explaining the results: In sessions with more risk-averse subjects, bubbles tend to be smaller

and of shorter duration. However, a substantial portion of the gender difference in bubble formation remains unexplained and warrants further investigation. The experiment provides an intriguing glimpse into what financial markets might be like if they were not dominated by men.

Choice of occupation

If women are more risk-averse, this is likely to affect their choice of profession, and since riskier professions have in general higher earnings, this can affect the gender gap in earnings. Bonin et al (2007) address this question using data from the German SOEP. They correlate a survey measure of risk aversion with the variability of earnings across occupations (controlling for other characteristics) and find that greater risk aversion is associated with a choice of profession with lower earnings risk. Le et al (2011) use data from the Australian Twins Study to show that a survey measure of risk tolerance explains about 9 percent of the gender gap in earnings; risk attitudes matter, but they have a relatively small impact on the gender gap. In a related lab experiment, Jung et al (2016) present male and female subjects with two job opportunities, one with higher risk, and show that women are more likely to select the less-risky alternative, producing a gap in earnings of about 13%.

IID. Summary of Gender Differences in Risk Attitudes

In summary, the majority of the evidence suggests that women are indeed more risk-averse than men, although the magnitude of this difference depends on context and framing. Women are also more loss-averse. Differences in risk preferences and their impact on economic outcomes can be affected by a variety of societal and psychological factors, such as gender stereotypes and gender differences in overconfidence, optimism, perceptions of subjective probabilities, and ambiguity attitudes. Greater risk aversion is likely to have an impact on major decisions such as investment portfolio choice and choice of occupation, and this can affect individual economic well-being. However, even in finance – a male-dominated field that has historically rewarded risk-taking – the evidence does not support the idea that higher risk tolerance necessarily leads to superior economic outcomes, either at the individual or at the aggregate level.

III. Gender Differences in Competitiveness

The "competitiveness" of an individual is subjective and therefore difficult to measure, even in the laboratory. The literature on gender differences in competitiveness, surveyed by Croson and Gneezy (2009), Niederle and Vesterlund (2011), and more recently Niederle (2016), describes two related notions: one's willingness to enter a tournament (which can be thought of as a revealed "preference for competition") and the "competitiveness trait" *per se.* The former is observable: it is the choice between non-competitive and competitive compensation schemes. The latter is unobservable, but may be imputed by eliminating other competing explanations for the choice to enter a competition. Successful career progression in most occupations, especially in top management, requires workers to enter and win

competitions, and it may also require them to be "competitive" in a broader sense. This chapter will focus on (observable) gender differences in entry (and performance) in tournaments. Furthermore, most of the experimental literature has focused on gender differences in entry and performance in high-pressure mixed-gender tournaments that involve tasks that stereotypically favor men, reflecting professions where competitiveness is most likely to be desirable and observed. Barring a few notable exceptions, most studies conclude that, conditional on ability and other relevant characteristics, women are significantly less willing to enter such tournaments. Women also often underperform relative to men in tournaments, especially when under pressure or when the task is stereotyped to be male-oriented. However, studies that explore environments where women are less likely to experience various pressures have demonstrated that the gender gap in competitiveness is highly context-dependent.

IIIA. Evidence of Gender Differences in Competitiveness in Stereotypically Male Tasks

In the laboratory, the most widely adopted measure of attitudes toward competition was introduced by Niederle and Vesterlund (2007), hereafter NV, who extend an earlier design by Gneezy et al (2003), hereafter GNR. Subjects are randomly assigned to groups of four -- two men and two women -- and can observe who is in their group (gender is not primed in any other way). Subjects perform a simple task requiring effort (a "real-effort" task) in treatments that vary the incentive scheme. NV and many others ask subjects to add up sets of five two-digit numbers within a certain time interval. The structure of the experiment is as follows:

- Treatment 1 (piece-rate): each subject receives a certain fixed sum for every correct submission. This treatment detects any baseline gender differences in ability. Most studies, including NV and GNR, choose tasks that do not produce such differences.[8]
- Treatment 2 (winner-take-all tournament): the winner (with the greatest number of correct submissions) receives 4 times the profit relative to piece-rate, while the others receive no payment. This treatment establishes whether competition alone produces gender differences in performance.
- Treatment 3: subjects choose between a piece rate (applied to their upcoming performance) or a tournament (but competing against the other group members' performance from Treatment 2). This design rules out the possibility that one might shy away from competing purely based on other-regarding considerations: Winning cannot lower others' earnings, in contrast to a standard tournament.[9]
- Treatment 4: subjects decide which payment scheme (piece-rate or tournament) to apply to their performance in Treatment 1. Because no actual performance takes place after choice in this treatment, any gender differences can be attributed to differences in beliefs,

[8] If a task favors men, women may be less likely to enter because they (rightly) expect to lose. More importantly, while there may not be a gender difference in ability, subjects still may incorrectly believe so (Shurchkov 2012).
[9] Studies that explicitly control for these preferences generally find that they do not explain the competitiveness gap (see Niederle 2016 for a list of studies and exceptions).

risk aversion or feedback aversion rather than preferences for competition. This control treatment isolates a preference for competition relative to other possible influences on tournament entry.

NV find that men are about twice as willing to compete as women. In fact, men have a significantly higher propensity to enter the tournament for any performance level. They also conclude that the difference in tournament entry can be explained by a significant gender gap in overconfidence.[10] Against their best interest, low-ability men enter the tournament too often, while high-ability women do not enter it enough. NV's Treatment 4 rules out that gender differences in beliefs, feedback, or risk aversion explain the gender gap in tournament entry.

Numerous studies replicate the result that women shy away from competing in individual tournaments using this task.[11] Similar gender gaps in selection into competitions have been found under a variety of different designs with stereotypically male-favoring tasks.[12] In a recent laboratory experiment on incentive provision, Shurchkov and van Geen (2017) find that women prefer non-competitive incentive schemes not only when applied to their own performance, but also to the performance of others: Female decision-makers are significantly less likely than comparable men to select competitive incentives for their team. Price (2012) finds that male managers are less likely to assign competition to female workers. In the field, Flory, Leibbrandt, and List (2014) randomly vary the competitiveness of incentive schemes offered to job applicants and find that women are less likely to apply for a job with a competitive payment scheme. It must be noted, however, that, like risk preferences, the gender gap in competitiveness may be sensitive to the context of the competition. Using the NV design, Apicella et al (2017) find that women and men are equally likely to enter a tournament where the competition is against one's own past performance.[13]

Outside of the NV design, a separate strand of the experimental literature on the determinants of individual bidding behavior in auctions finds that women overbid substantially more than men, which suggests *more* competitive behavior once in a competition, although the effect typically disappears with experience (Chen et al 2013; Ham and Kagel 2006; Casari et al 2007; Charness and Levin 2009).[14] Importantly, for inexperienced subjects, the gender gap is obtained even after controlling for obvious confounding factors such as ability and college major (Casari et al 2007). Although there is no confirmed explanation for the gender difference, one conjecture is that women's lack of

[10] Overconfidence is the subject's belief about relative within-group rank, elicited in Treatments 1 and 2 in an incentive-compatible manner, compared to their actual rank. Gillen et al (2015) argue that differences in risk aversion, rather than overconfidence, account for the gender gap in their study.

[11] See Niederle (2016) who cites many such papers. Saccardo et al. (2017) estimate the size of the competitiveness gap more precisely with a continuous NV measure.

[12] Gneezy et al (2009), Vandegrift and Yavas (2009), Ertac and Szentes (2010), Dohmen and Falk (2011), Booth and Nolen (2012), Kamas and Preston (2012), Mayr et al (2012), Shurchkov (2012), Gupta et al (2013), and Andersen et al (2013)

[13] Whether one interprets such a payment scheme as "competitive" is debated in the literature. Shurchkov and van Geen (2017) emphasize the self-improvement aspect of winning such a "tournament."

[14] Chen et al (2015) find that women bid higher than men only when bidding against other women. See Section IIIB for more on competitiveness in single-sex settings.

experience in strategic interactions may lead to their aggressive bidding strategies (Casari, Ham and Kagel 2007).

IIIB. Explaining the Gender Differences in Competitiveness

In this section, we explore whether the observed gender differences in competitiveness are universal, or whether other factors can explain these differences. In addition to overconfidence and social preferences, mentioned above, we consider biological differences, risk preferences, personality, stereotyping and subject-pool differences as possible causes.

Women may be less competitive than men due to their biology – differences in baseline hormone levels or brain structure.[15] Because tournaments are stressful, a number of studies have focused on the role of stress in responses to competition. Apicella et al (2011) find no significant correlation between baseline levels of the stress hormone cortisol and competitiveness, and Buser et al (2015) find that gender differences in stress responses (measured with salivary cortisol and self-assessment) cannot explain the gender gap in willingness to compete. Halko et al (2015) and Buckert et al (2015) use heart rates to proxy for stress and find that variation in heart rate does not explain the gender gap in competitiveness. Goette et al (2015) manipulate stress randomly and find differential effects on confidence, though not by gender.

Studies that investigate the role of sex hormones as a possible cause find mixed results: Hoffman and Gneezy (2010) argue that traits linked to higher levels of testosterone correlate with competitiveness. Buser (2012) finds that spikes in estrogen and progesterone decrease competitiveness in single-sex groups of women; while Wozniak et al (2014) find the opposite result in mixed-gender groups. Thus, we cannot definitively conclude that men and women differ in their willingness to compete purely due to their biological differences.

Because tournament entry is risky, attitudes toward risk have been often considered as a possible determinant of the gender gap in competitiveness. Niederle (2016) surveys a number of these studies and concludes that risk measures (directly or indirectly elicited) do not have a large impact on the gender gap in tournament entry (see her study for references). Shurchkov and van Geen (2017) confirm this conclusion, simultaneously controlling for risk, loss, and ambiguity aversion. However, Balafoutas et al (2011) and Gillen et al (2015) find that the gender gap in tournament entry can be eliminated by controlling for factors such as distributional preferences, past performance, or a variety of different risk preference measures.

The evidence is mixed on whether other personality traits, known in psychology as the "Big Five," contribute to the gender gap in the willingness to compete. While Müller and Schwieren (2012) find that a greater degree of neuroticism among women can partly explain the gender gap in tournament entry with the NV task, Almås et al (2014) do not find a significant effect of any of the "Big Five" traits on tournament entry.

[15] Research in neuroscience based on MRI scans had found substantial differences between male and female brains (see for example Gur et al 1999). No one has explored the link to competitiveness.

Gender stereotypes associated with the task itself may drive beliefs about relative performance and therefore the gap in the willingness to compete. Studies that implement the NV design with tasks that are perceived to favor women have almost universally found no gender differences in tournament entry (see for example Kamas and Preston 2009; Shurchkov 2012; Grosse, et al 2014; Dreber, et al 2014; Apicella and Dreber 2015). Only Wozniak et al (2014) find that the task has no significant impact on tournament entry.

Demographics specific to typical subject pools of students, like age, socio-economic status, and family background offer another possible explanation for the gender gap. Using a non-student population, Charness and Villeval (2009) fail to find a consistent gender gap. Almås et al (2014) show that, for children of wealthy families, but not low-income families, girls are significantly less likely to enter tournaments than boys. Furthermore, while the gender gap is well-established with subjects from developed economies (see Mayr et al 2012 for a representative U.S. sample; Sutter and Glätzle-Rützler (2014) among children in Austria), there is no evidence of systematic gender gaps in developing country populations (Cardenas et al 2012; Zhang 2013; Khachatryan et al 2015). Gneezy et al (2009) show that women from a matrilineal tribe in Tanzania are actually more likely to compete as compared to men, while women from an otherwise similar patrilineal tribe shy away from competition. Therefore, culture and societal norms may play an important role in explaining the gender gap in competitiveness.

IIIC. Competitiveness and Economic Outcomes

In this section we explore whether increasing women's willingness to compete would improve their outcomes.

Buser et al (2014) find that higher willingness to compete correlates to the choice of more math- and science-oriented and prestigious high school tracks in the Netherlands. Reuben et al (2015) show that gender differences in overconfidence and competitiveness explain 18% of the gender gap in earnings expectations (but they have no data on actual earnings). Oppedal Berge et al (2015) find that willingness to compete is positively correlated with investment decisions of Tanzanian entrepreneurs, and find suggestive evidence of an association with labor market success.

In a longitudinal study, Reuben et al (2015) measure the competitiveness of a sample of high-ability MBA graduates using the NV design. Nine years later they find individuals who were more competitive in the game are more likely to work in high-paying industries and earn 9% more than their less competitive counterparts. Gender differences in competitiveness explain 10% of the gender gap in earnings.

IIID. Factors that Reduce the Gender Gap in Competitiveness and Improve Women's Performance when Competing

Labor market success often requires women and men to be competitive. However, changing women's preferences is not likely to be attainable or even desirable as a policy goal.

Furthermore, studies show that forcing women to compete in tasks that are perceived to be male-oriented may cause them to underperform relative to men (GNR, and Shurchkov 2012, in lab experiments; Ors et al 2013, Amore and Garofalo 2014, and Morin 2015 in field experiments).[16] Furthermore, in some cases it may be rational for women (and men) to avoid being overly competitive. For example, NV point out that men compete too much based on their ability, thereby sacrificing earnings. Chen et al (2005) find that, by bidding too aggressively in auctions, inexperienced women succumb to the "winner's curse" and therefore tend to earn lower profits than men. However, women also learn faster than men to be less aggressive, so that these differences disappear over time (Casari et al 2007).

In light of the above cautions, a worthy policy goal may be to modify the existing institutions in the direction of alleviating the hurdles and pressures associated with women entering competitions. For example, Shurchkov (2012) shows that reduced time pressure in a competitive setting increases selection into and performance in both math and verbal tournaments.

GNR find that women's performance suffers relative to men's in a mixed gender competitive setting, but women do significantly better in single-sex tournaments. This finding suggests that women may be more willing to enter tournaments against female competitors. The evidence from the literature is mixed, however. Sutter and Glätzle-Rützler (2014) find that gender composition does not significantly impact the decision to compete among children. Similarly, Gupta et al (2013) find that opponent's gender does not significantly impact tournament entry. On the other hand, Booth and Nolen (2012) find that girls are more willing to compete in single-sex groups as compared to group that contain at least one boy. Using a natural experiment, Eisenkopf et al (2015) find that female students randomly assigned to single-sex classes increase performance in mathematics relative to female students assigned to coeducational classes. Outside of the educational setting, Delfgaauw et al (2013) introduce short-term team sales competitions to a randomly selected sample of stores and find that competition improves sales, but only in stores where the store's manager and a sufficiently large fraction of the employees have the same gender.

Healy and Pate (2011) show that, independent of the sex of one's partner, female subjects prefer to compete in teams, whereas male subjects prefer to compete as individuals. The availability of team competition reduces the gender gap by two-thirds. Dargnies (2012) also shows that team competitions eliminate the gender gap, as men choose to compete significantly less often when they have to compete in a team rather than alone. Kuhn and Villeval (2015) confirm that women choose team-based pay equally or more frequently than men.

[16] Whether men outperform women in tournaments depends on the experimental design and subject pool. NV and many replications find no significant baseline gender differences in tournament performance (Treatment 2), with some notable exceptions (Grosse et al 2014, for example). Cotton et al (2013) use data from multiple-period math competitions and show that boys outperform girls of similar ability in the first round, but not in subsequent rounds of competition. Gneezy and Rustichini (2004) find that boys outrun the girls in tournaments, but Dreber et al (2011) cannot replicate this finding in their sample. Iriberri and Rey-Biel (2013) use a mental rotation task where men outperform women under both incentive schemes.

The magnitude of the tournament prize can also play a role in closing the gender gap. Petrie and Segal (2015) show that if the rewards to competition are sufficiently large, women are willing to compete as much as men and win as many contests as men. In a sample of high-school students, Azmat et al (2016) exploit natural variation in the stakes of tests to find that female students outperform male students in all tests—but to a relatively larger degree when the stakes are low. Attali et al (2011) also show that males exhibit a larger difference in performance between the high and low stakes GRE tests than females, attributing this effect to the lower level of effort exerted by men in the low stakes test.

Even if some competitions may occur in "female-friendly" contexts, it is not realistic to assume that real-world environments can or should be changed to incorporate the features we discuss. Instead, conditional on a given setting and individual preferences of women, policymakers can fine-tune the setting to improve women's outcomes. One concrete example of such a policy is affirmative action. Niederle et al (2013) show that affirmative action, in the form of guaranteeing women equal representation among winners, increases their entry relative to men. The authors find that the effect is partially driven by women being more willing to compete against other women. Balafoutas and Sutter (2012) confirm that quotas and other forms of affirmative action policies encourage women to enter competitions. Both studies find that the effect is achieved with at most a modest efficiency loss because of the increased entry of high-performing women. Affirmative action changes the applicant pool.

Access to information may also improve women's willingness to compete, although the effect depends on the nature of information. Wozniak et al (2014) show that providing feedback on relative performance can eliminate the gender gap in competition. Brandts et al (2014) show that advice by experienced and better-informed subjects significantly increases confidence and tournament entry of high-performing women and reduces entry of low-performing men. Finally, Cadsby et al (2013) prime subjects with "professionalism" by asking questions about their expected salary or GMAT scores. They find that professional priming significantly impacts women's beliefs and reduces the gender gap in tournament entry.

IIIE. Summary of Gender Differences in Competitiveness

There is a large and growing body of experimental and field evidence that indicates that women are less willing to compete in individual tournaments where the task is perceived to favor men, regardless of whether this perception is correct or incorrect. The mechanisms behind this gender gap in competitiveness are less well-understood. Evidence is mixed on the importance of individual characteristics, including biological factors, such as stress and hormone levels, risk aversion, overconfidence, the "Big Five" personality traits, and other-regarding preferences. Age and socioeconomic status have been found to have a significant effect, but the evidence is not conclusive. Activation of gender stereotypes when the task is perceived to be male-oriented seems to offer a more robust channel to explain the gender gap in tournament entry. Furthermore, culture and institutions may play an important role in driving gender differences in competitiveness. Although recent field studies highlight the importance of competitiveness for labor market outcomes, further research is required to

pinpoint settings where gender differences in competitiveness translate into the largest gaps in outcomes, and how to improve institutions in the most efficient manner in order to close these gaps.

IV. Gender Differences in the Propensity to Negotiate

We now consider the third part of the "Lean In" argument put forth to explain gender gaps in labor market outcomes: that women are less able or less willing to negotiate. In economics, negotiation can be modeled as bargaining, where parties exchange offers in order to reach an agreement, while also maximizing own outcome (Nash 1950; Rubenstein 1982; see Roth 1995 for a review of experimental tests of these and other models). The commonly held belief that women shy away from negotiations and perform relatively poorly when forced to negotiate has been confirmed by studies that use observational data (Card et al, forthcoming), laboratory experiments (Dittrich et al 2014; Exley et al 2016), and field experiments (Leibbrandt and List 2015).[17]

IVA. Explaining Gender Differences in the Willingness to Bargain and Bargaining Outcomes

While differences in risk aversion do not seem to explain the gender gap in the propensity to negotiate (Garcıa-Gallego et al 2012; Exley et al 2016), a variety of other factors have been shown to play an important role. Bowles et al (2007) find that gender differences in the propensity to initiate negotiations may be explained by nervousness and fear of backlash associated with the knowledge that they would be evaluated by a male. Amanatullah and Morris (2010) confirm that the anticipation of backlash mediates gender differences in assertive negotiations, but only when the subjects must negotiate on their own behalf. When advocating on behalf of others, women achieve better outcomes. Bowles et al (2005) also find that negotiating for the welfare of another person increases female performance relative to negotiating for self. The fear of backlash hypothesis is consistent with the findings by Kray et al (2001) who attribute the gender gap in negotiation performance to the threat of negative stereotype confirmation.[18] When representing themselves, women anticipate that assertiveness will lead to subsequent backlash, because such behavior does not conform to the female gender stereotype. On the other hand, in when representing others, assertiveness is more congruent with the female gender norm. Culture plays a role in defining these norms: Andersen et al (2015) find the opposite result in a matrilineal society, where women outperform the men in bargaining.

[17] See also surveys of previous literature in Babcock and Laschever (2003); Eckel et al (2008); Bowles (2013); Mazei et al (2015); Exley et al (2016).

[18] Studies in psychology have found that commanding or authoritative leadership style can work against female leaders, for example (Eagly et al 1992).

During a negotiation, the representation role of the negotiators may trigger gender stereotypes, and, in turn, exacerbate the gender gap.[19] Therefore, the gender of the bargaining partner has been found to matter for the willingness of women to negotiate. (See for example, Eckel and Grossman (2001) and Solnick (2001) in ultimatum games, Huang and Low (2016) in Battle of the Sexes games, Sutter et al (2009) in a power-to-take game, and Hernandez-Arenaz and Iriberri (2015) in the data from a TV show.)

The framing of the situation may also impact the gender gap in the propensity to negotiate. For example, Small et al (2007) show that framing a situation as an opportunity for asking, rather than for negotiation, is less intimidating to women, increasing their willingness to initiate a negotiation. Once again, this evidence is consistent with the desire to avoid negative gender stereotype activation. Furthermore, Leibbrandt and List (2015) find that uncertainty about what is expected may matter. Without explicit statements that wages are negotiable, men are more likely to negotiate their salary than women. However, this difference vanishes when the possibility to negotiate wages is explicitly mentioned. These results suggest that labor market outcomes can be improved with relatively simple interventions that increase transparency in the negotiation process.

The gender gap in negotiation outcomes may also depend on the negotiators' communication strategies (Bowles 2013) and their ability to signal experience or initial valuation (Busse et al 2012; Castillo et al 2013). In a recent paper, Huang and Low (2016) use Battle of the Sexes games to show that communication is associated with a greater likelihood of men exhibiting 'benevolent sexism' when playing against women. This type of sexism stems from prejudice, but tends to elicit altruistic behavior (Glick and Fiske 1996). Specifically, when aware of the fact that they face a female partner, men are less willing to use tough strategies to achieve a preferred outcome. While the mechanisms behind the result remain are unclear, the finding suggests that women sometimes may be able to exploit social norms to their advantage in bargaining.

IVB. Gender Differences in the Willingness to Negotiate and Economic Outcomes

There is an overarching conclusion from observational studies that women's dislike of negotiations comes at a price. Babcock and Laschever (2003) document that female business school graduates negotiate salary 7% of the time, compared with men's 57%. The reluctance to negotiate implies that women leave money on the table, as graduates who negotiate gained an average of 7.4% over the initial compensation. However, these results ignore the potential effect of occupational selection in explaining these differences in outcomes. Exley et al (2016) conduct a laboratory experiment that disentangles the effect of selection into bargaining from performance in bargaining. In particular, they randomize subjects into two treatments: a forced wage negotiation treatment and a treatment where workers can choose to avoid a negotiation. This design rules out the explanations for the gender gap related to fear of discrimination or backlash, under-confidence, or ambiguity aversion. The authors

[19] In a survey of lab experiments, Eckel et al (2008) argue that stereotype-based expectations about gender differences in negotiation style or ability have a stronger impact on negotiation outcomes than any underlying gender differences.

confirm the previously established result that women are significantly less likely than men to enter negotiations (11%, on average). However, they also observe that forcing women to negotiate results in an increase in losses and no additional gains. This means that high-ability women choose to bargain, while low-ability women optimally opt out of bargaining, improving their own outcomes.

IVC. Summary of Gender Differences in Propensity to Negotiate

Research in psychology and more recently in behavioral economics has uncovered a substantial gap in the willingness and ability of men and women to negotiate, at least in societies where assertiveness goes against the female gender stereotype. While reluctance to negotiate, conditional on ability, could result in lost opportunities in the labor market for some women, recent experimental results caution against universal advice to "lean in." Further reservations arise when one considers the additional hurdles that women face when deciding whether to engage in negotiations, such as the possibility of discrimination and backlash.

V. Gender Differences in Social Preferences

The fourth and final trait that we explore in this chapter relates to interpersonal skills workers must possess in order to succeed in the labor market. In psychology and sociology, the predominant view has been that women are more nurturing and cooperative than men, and in political science surveys, women are shown to support higher levels of income redistribution than men (Alesina et al 2011). In behavioral economics, we attribute these behaviors to social preferences, which may be either innate or developed over time through various social interactions. Social preferences can be modelled theoretically as pure or impure altruism (e.g., Becker 1974; Andreoni 1989), aversion to inequality (e.g., Fehr and Schmidt 1999; Bolton and Ockenfels 2000), reciprocity and "gift-exchange" (Rabin 1993; Charness and Rabin 2002; Falk and Fischbacher 2009), or social norms (Andreoni and Bernheim 2009).

Croson and Gneezy (2009) offer a survey of the psychology and economics literature on whether women have been found to be more cooperative than men. They conclude that the existence and the direction of the gender difference are dependent on the environment and framing, largely because women are significantly more sensitive to the experimental context and framing. However, Niederle (2016) discusses several studies where men seem to be more sensitive to context. Eckel and Grossman (2008c) argue specifically that when there is no risk in the situation, as in dictator games or donations, women are more generous than men; but when there is a risk of a low payoff, as in public goods or ultimatum games, no systematic gender difference is found. Eckel et al (2008) argue that gender differences are more likely to emerge in settings where gender is salient, such as single-gender groups, or where attention is called to the gender of one's counterpart.

VA. Gender Differences in Social Preferences in Simple Games and Relevance to Labor Market Outcomes

Experimentally, social preferences can be directly measured based on other-regarding behavior in three types of simple games: allocation games such as the dictator game; two-person bargaining games such as the ultimatum game; and social dilemmas such as prisoner's dilemma or public goods games. In dictator games, where the proposer unilaterally decides on the allocation of a fixed amount between themselves and another player, women seem to be, on average, more generous (e.g., Eckel and Grossman 1998) and more inequality averse (e.g., Andreoni and Vesterlund 2001) than men. However, gender differences are significantly impacted by social context. For example, women give more than men, on average, when the recipient is framed as a charity (Kamas et al 2008; Grossman and Eckel 2015 for lab experiments; Mesch et al 2011 in field data). However, some studies find women give less to other women (Ben-Ner et al 2004). Furthermore, men are more responsive to the price of giving than women, and more likely to choose efficiency over equality (Andreoni and Vesterlund 2001; Fisman et al 2014; Cappelen et al 2015).

In ultimatum games, where the recipient of the transfer has the option of rejecting the proposer's offer, studies find no gender differences in the transfer amount (Eckel and Grossman 2001; Solnick 2001). However, female recipients are more willing to accept lower offers in face-to-face interactions (Eckel and Grossman 2001), though not when the subjects cannot see one another (Solnick 2001). Furthermore, women's rejection rates are often sensitive to the gender of their counterpart, while men's rejection rates are not. For example, Eckel and Grossman (2001) find some evidence of "solidarity" among women, as women paired with other women almost never fail to reach an agreement. Eckel et al (2008) find that unconscious biases and gender stereotypes about women being more cooperative and less able negotiators than men significantly impact outcomes.

The evidence of gender differences in other-regarding behavior in social dilemmas is mixed. Frank et al (1993) find that women are, on average, significantly more cooperative in one-shot prisoner's dilemmas, but Ortmann and Tichy (1999) show that female cooperation is strongest in mixed-group settings and less pronounced in female-only groups. It may be that women's greater generosity is offset by their aversion to the risk of a low payoff in these settings, and the outcome depends on the specific parameters of the study (Eckel and Grossman 2008c)

Whether the simple games above relate to labor market outcomes is an empirical question, as the external validity of a specific stylized and controlled laboratory environment can always be questioned (Croson and Gneezy 2009). If one infers that women are likely to behave similarly outside of the laboratory, a number of findings become relevant. For instance, a greater willingness to accept low offers in the ultimatum game is consistent with the observation that women negotiate lower salaries and generally obtain worse negotiation outcomes compared to men.

Gender differences in social preferences may also have a significant effect on the choice of profession, with consequences for earnings. Individuals with higher levels of altruistic preferences are more likely to choose public sector work, reflecting their desire to "do good" (Banuri and Keefer 2016; Tonin and Vlassopoulos 2015). Employment in the public sector is associated with lower wages and greater job security. In addition, workers who enter occupations involving the direct care of others, which are dominated by women, pay a substantial penalty in reduced earnings; "care workers" have some of the lowest compensation in the economy (BLS 2016-17).

VB. Gender Differences in Trust and Trustworthiness

Another element of social preferences that may be relevant for labor markets is that of trust and trustworthiness. Experimental evidence arises from two types of games: the investment or trust game (Berg et al 1995),[20] and the gift-exchange game (Fehr and Falk 1999).[21] In both one player sends money to a second, in an act of trust, and the second mover makes a decision that reciprocates that trust. Johnson and Mislin (2011) survey the trust-game literature, and Fehr and Falk (1999) document the evidence in support of the gift-exchange model.

Rau (2012) focuses on the experimental evidence on gender differences in trust and gift-exchange games. Women's level of trust is found to be less than or equal to men's, and these results may occur because of women's greater risk aversion (Croson and Gneezy 2009). On the other hand, there is evidence to suggest that women's reciprocity is at least as great, and often greater than men's.[22] Gender differences are amplified when the task involves real effort (Heinz et al 2012). Furthermore, consistent with the behavior in the dictator game, Buchan, Croson and Solnick (2008) show that males reciprocate equally regardless of the gender of the sender, while women return significantly less to female senders than they do to males.

The experimental literature on gender differences in a gift-exchange setting is relatively nascent. Chaudhuri and Sbai (2011) find no gender differences in wage-setting by first-mover principals ("employers"). However, female "workers" are more likely to shirk in their experiment, although the gender difference diminishes over repeated rounds. While Chaudhuri and Sbai (2011) do not reveal the gender of the other players, Schwieren (2012) informs both employers and workers about the gender composition of the two groups. Because female workers receive lower wages (the commonly observed "gender wage gap"), women, unsurprisingly, also exert lower effort. When Benndorf and Rau (2012) reverse the order of actions in a modified gift-exchange game where the employer can observe workers'

[20] In the trust game, two players are endowed with a monetary amount. The first mover can send any part of her endowment to her counterpart, and that amount is tripled by the experimenter. The second mover decides how much, if any, to return. The former is a measure of "trust", and the latter is "trustworthiness".

[21] In the gift-exchange game, an employer pays a "gift" of a wage to an employee, indicating a degree of trust. The employee then chooses a costly effort level, which lowers his own payoff but increases both efficiency and the employer's payoff. A high effort level reciprocates the employer's trust.

[22] The second stage of the trust game is essentially a dictator game, so this pattern is consistent with the dictator-game evidence discussed above.

effort before choosing the wage, the results are in line with previous findings: female employers exhibit a greater degree of reciprocity by paying higher wages than male employers.

VC. Summary of Gender Differences in Social Preferences

The large body of experimental literature on gender differences in social preferences has produced somewhat mixed results. There is some evidence that women may trade off social-preference concerns for wages in their choice of profession, and that women may suffer in negotiations due to social preferences or stereotypes about social preferences. In environments that are most relevant to labor market outcomes, such as trust or gift-exchange settings, women have been shown to exhibit higher levels of reciprocity. However, in some cases, women appear to be more sensitive to the social context or framing of the experiment compared to men. Indeed several studies have shown that women act disproportionately *less* altruistic toward other women in some environments including principal-agent settings that we believe are most relevant to labor market outcomes. These observations have some relevance for understanding the gender wage gap. Finally, further investigation is necessary to determine whether social preferences interact with other behavioral traits to explain gender differences in labor market outcomes.

VI. Conclusion

Despite considerable progress over the last thirty years, a gender wage gap remains persistent and substantial, especially at the top of the wage distribution (Blau and Kahn 2016). Traditional explanations that rely on gender differences in human capital accumulation have become relatively less important, while sorting into occupations and women's work force interruptions have remained an important part of the discussion (Goldin 2014). Studies based on observational data suggest that gender gaps in individual traits and preferences reviewed in this chapter explain a smaller portion of the gender gap than occupation and industry effects (Blau and Kahn 2016). However, occupational selection in the job market may itself be driven by gender differences in preferences (although demand-side explanations due to discrimination should also not be discounted).

There is a broad consensus in the experimental literature that women, on average, exhibit greater risk aversion, lower levels of competitiveness, and less desire to negotiate as compared to men. Women may also exhibit stronger social preferences, especially when the environment does not carry the risk of a low payoff. Furthermore, there is no conclusive evidence on whether these differences are inherent or societal for any of the individual traits, although most studies point to at least some role for the latter. Finally, and most importantly, further research is necessary to establish a clear link between existing and new experimental results with the effects that would exist in the infinitely more complex outside world.

Taking at face value the gender differences in preferences, it is important to consider possible policy interventions by government or business that might lessen gender differences in outcomes. Women may exhibit greater aversion to risk-taking, competition, and negotiation, and higher levels of cooperativeness, but it is also true that women are treated differently by others based on stereotypes about preferences. Sandberg (2013) argues that the solution to the gender gap is to encourage women to "lean in" – taking on more risk, engaging to a greater extent in competition, and getting over their aversion to negotiation. But "fixing women" is not the only policy option.

Bohnet (2016) brings considerable research in behavioral economics to bear on the alternative approach of institutional design. She argues that "de-biasing" institutions can address the gender gap more effectively than policies that are designed to change the way women behave. For example, in March 2016, the College Board changed the SAT so that guessing is no longer penalized (College Board 2016). This takes the risk out of guessing and should encourage more risk-averse test takers to guess, improving their scores and potentially eliminating the male advantage. Bohnet (2016) also notes that it can be relatively easy to remove triggers that activate performance-inhibiting stereotypes in classroom and work settings. Another area where improvements can be made is personnel practices. Personnel policies, such as blind auditions, can be implemented to limit the role of biases in evaluations of others. The considerable variance across countries in gender differences in performance suggests that there are some important cultural influences at play.

Uncoupling the connection between gender-linked preferences and economic success can go a long ways toward lessening the gender wage gap. The research in this chapter suggests this could be achieved with two possible approaches. The first would be some combination of workshops and counseling for women on effective competition and negotiation. The second involves thoughtful redesign of institutions informed by research in behavioral economics and psychology.

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