OR-03 Competition, negotiation and promotion systems

The architectural design of couples, families, organizations, and societies fundamentally depends on how individuals organize, compete for resources, and negotiate their standing. Over the past two decades, an expansive body of empirical research spanning behavioral economics, psychology, and endocrinology has sought to understand whether and why men and women navigate these systems differently. In examining sex differences in preferences for competition, negotiation behavior, and self-promotion, the literature reveals a complex interplay of structural incentives, deeply ingrained cultural norms, and highly variable individual traits.

To provide an exhaustive foundation for understanding these dynamics, this report dissects the evidence across three distinct layers: the physiological (measurable biological markers), the behavioral (statistical outcomes and overlapping distributions), and the cultural (the variable impact of socialization and institutions). By evaluating how these individual-level traits interact with organizational designs—such as tournament pay, self-nomination, and up-or-out promotion tracks—it becomes possible to distinguish structural frictions from innate differences.

Furthermore, this review addresses the most rigorous methodological controversies in the field, particularly concerning econometric measurement error and the statistical dangers of conflating group averages with individual deterministic traits.

Layer 1: Physiology (Measurable)

The search for a biological substrate underlying sex differences in economic behavior has largely focused on endocrinology. The prevailing biological hypothesis posits that prenatal and circulating androgens, specifically testosterone, drive status-seeking behaviors, thereby explaining the higher average propensity of men to embrace competitive environments and financial risk. Because circulating hormones are highly measurable, this layer offers a strictly quantitative approach to assessing the biological roots of economic preferences.

Correlational Evidence and the Dual-Hormone Hypothesis

Early literature in neuroeconomics relied heavily on correlational studies linking endogenous hormone levels to behavior. In a widely cited paper by Apicella et al. (2008) in *Evolution and Human Behavior*, researchers observed a positive correlation between baseline salivary testosterone and financial risk-taking among men[1]. Subsequent research attempted to refine this relationship by introducing the "dual-hormone hypothesis," which suggests a more complex endocrine interaction. As articulated by researchers such as Mehta and Josephs (2010), testosterone's influence on status-seeking and competitive behavior is hypothesized to be moderated by the hypothalamic-pituitary-adrenal (HPA) axis hormone, cortisol[3].

According to this framework, testosterone promotes competitive behavior exclusively when basal cortisol levels are low. When cortisol—a biomarker of stress and social avoidance—is high, the competitive effects of testosterone are theorized to be inhibited[3]. An experimental manipulation by Knight et al. (2020) in *Psychoneuroendocrinology* involving a mixed-gender math competition with a sample size of 115 men provided partial support for this. The

researchers found that exogenous testosterone given to low-cortisol men evoked status-seeking (manifested as an increased tendency to compete against high-status males), whereas in high-cortisol men it evoked status-loss avoidance[3]. Similar correlational studies utilizing the second-to-fourth digit ratio (2D:4D) as a proxy for prenatal testosterone exposure have found that men with lower digit ratios (indicating higher prenatal testosterone) expend higher effort in conflict games[4].

Causal Evidence and Large-Scale Replications

Despite these nuanced correlational frameworks, the strongest causal evidence—derived from double-blind, placebo-controlled randomized controlled trials (RCTs) administering exogenous testosterone—has repeatedly failed to demonstrate robust, replicable effects on economic preferences. The physiological layer is currently defined by a severe replication crisis regarding the testosterone-competition link.

In an early highly rigorous study, Zethraeus et al. (2009) in the *Proceedings of the National Academy of Sciences (PNAS)* conducted a randomized trial with 200 postmenopausal women. They administered exogenous testosterone or a placebo and found no significant causal effect on risk aversion, altruism, or competitiveness[1]. Buser (2012) in *Economics and Human Biology* similarly found no causal relationship between natural hormonal fluctuations during the menstrual cycle (or the use of hormonal contraceptives) and competitive preferences[7].

The most definitive refutation of the testosterone-competition link comes from an exceptionally large-scale, pre-registered RCT by Bird et al. (2024) published in *PNAS*. With a sample size of 1,000 male participants—an order of magnitude larger than typical pharmacological studies, providing 80% statistical power to detect a highly modest Cohen's d effect size of 0.23—participants were randomly assigned to receive either 11 mg of intranasal testosterone or a placebo[1]. The study tested nine primary hypotheses encompassing competitiveness, social preferences, and risk-taking. The researchers found absolutely no evidence of a treatment effect for any outcome measure, concluding that short-term exogenous testosterone fluctuations do not shape men's economic preferences[1].

This massive failure to replicate is corroborated by a comprehensive meta-analysis by Dekkers et al. (2022) in *Neuroscience & Biobehavioral Reviews*, which examined 52 studies comprising 94 measurements ($N = 17,340$)[2]. The combined effect size for the correlation between testosterone and risk-taking was functionally zero (Pearson's $r = -0.0021$, 95% CI [-0.0431, 0.0389], $p = 0.919$), indicating a pure null effect[2].

Physiological Marker	Evaluated Mechanism	Quality of Evidence	Consensus Finding	Key Sources
Endogenous	Correlational link to risk and	Small-sample	Mixed/Weak. Positive	Apicella et al. (2008)[1]

Testosterone	competition.	lab studies.	correlations found in early literature, but highly context-dependent.	
Dual-Hormone (Testosterone x Cortisol)	Testosterone increases competition only if baseline cortisol is low.	Small-sample RCTs ($N \sim$).	Moderate but narrow. Requires highly specific laboratory conditions to manifest.	Knight et al. (2020)[3]
Exogenous Testosterone	Causal link between artificially raised testosterone and economic behavior.	Large-scale RCTs ($N =$) and Meta-Analyses ($N >$).	**Null.** Exogenous testosterone has zero replicable effect on economic preferences.	Bird et al. (2024); Dekkers et al. (2022)[1]

While physiological biomarkers are highly measurable, the strongest available RCTs and meta-analyses reject the hypothesis that biological endocrinology is a primary, deterministic driver of sex differences in economic competition, risk, or negotiation. The physiological layer does not provide a sufficient explanation for the behavioral disparities observed in organizations.

Layer 2: Behaviour (Statistical, Overlapping Distributions)

Moving from physiology to observed behavior, experimental economics has identified profound statistical differences in how men and women navigate competition, negotiation, and self-promotion. It is imperative to note that these are differences in group averages, characterized by heavily overlapping distributions rather than binary, biological categorizations.

Preferences for Competition

The seminal work identifying a behavioral gender gap in the willingness to compete was conducted by Muriel Niederle and Lise Vesterlund (2007), published in the *Quarterly Journal of Economics*[8]. In their foundational laboratory experiment ($N = 80$, 40 men and 40 women),

participants were tasked with adding sets of four two-digit numbers for three minutes[8]. Initially, participants performed under a non-competitive piece-rate scheme, followed by a competitive tournament scheme (where only the top performer in a group of four was paid). There were absolutely no gender differences in actual cognitive performance[8].

However, when participants were given the choice of which compensation scheme to apply to their next performance, a massive gender gap emerged: 73% of men selected the competitive tournament, compared to only 35% of women[8]. Niederle and Vesterlund demonstrated that this gap was not explained by performance differences. Instead, it was driven largely by men's severe overconfidence in their relative abilities, and a distinct, unobservable male preference for performing in competitive environments[8].

This finding has been replicated extensively, though with varying magnitudes. A meta-analysis by Dariel et al. (2017) encompassing 53 published papers confirmed the robust nature of this gap, showing an average tournament entry rate of 52% for men versus 34% for women across studies[11]. An updated, exhaustive meta-analysis by Markowsky and Beblo (2022) of 110 studies and 409 effect sizes found an overall unadjusted gap of 13 percentage points[12]. The meta-analysis noted that the effect is highly sensitive to the experimental design—specifically, the gap is largest (replicating the original N&V magnitude) when math-based tasks are used with university student subject pools, but is significantly attenuated when verbal tasks, different age demographics, or team-based competitions are utilized[12].

Real-World Implications of the Competition Gap

The experimental measure of competitiveness has high external validity. Thomas Buser, Muriel Niederle, and Hessel Oosterbeek (2014) in the *Quarterly Journal of Economics* linked the laboratory competitiveness of 1,480 Dutch secondary school students (age 15) to their subsequent academic track choices[14]. In the Netherlands, students choose among four tracks that vary in prestige and math/science intensity. Buser et al. found that competitiveness was strongly correlated with choosing prestigious, math-heavy tracks. Crucially, the gender gap in experimental competitiveness accounted for up to 23% of the gender gap in actual career track choices, controlling for academic ability, risk preferences, and confidence[14].

Beyond educational tracking, performance *within* competitive environments also diverges statistically. Gneezy, Niederle, and Rustichini (2003) in the *Quarterly Journal of Economics* demonstrated that when the competitive pressure of an environment is increased, the average performance of men increases significantly, whereas the average performance of women does not[10]. This results in a significant gender gap in tournament performance that does not exist under piece-rate compensation[10].

The Measurement Error Controversy

The conclusion that men and women possess a fundamental, residual difference in a "preference for competition" is not without severe critics. The most prominent methodological critique comes from Ben Gillen, Erik Snowberg, and Leeat Yariv (2019) in *Econometrica*[18]. They argue that measurement error in experimental proxies for risk aversion and overconfidence is ubiquitous, accounting for 30–40% of the variance in elicited traits[18].

Because variables like risk aversion and confidence are measured with error, standard

regressions suffer from attenuation bias. The coefficient on the control variables (risk and confidence) shrinks toward zero, leaving residual variance that the regression erroneously attributes to the gender dummy variable—a phantom trait labeled "preference for competition"[18].
When Gillen et al. replicated Niederle and Vesterlund (2007) using the Caltech Cohort Study and applied instrumental variable (IV) techniques (utilizing duplicate elicitations to correct for measurement error), they found that the gender gap in competition entry was *entirely explained* by differences in risk attitudes and overconfidence[18]. According to this view, there is no distinct female "aversion to competition"; rather, women are, on average, more risk-averse and realistically confident than men, which downstream affects their tournament entry[18].
Furthermore, pure replications of the original N&V study have occasionally failed entirely. Price (2020) in the *Economics Bulletin* conducted a pure replication and found a null result, attributing the failure to unobserved heterogeneity in student confidence levels[21].

Negotiation Behavior and the Social Cost of Asking

Beyond competitive sorting, men and women differ in their propensity to initiate negotiations. As detailed by Linda Babcock and Sara Laschever in their foundational 2003 book *Women Don't Ask*, the failure to negotiate starting salaries contributes massively to the lifetime gender wage gap[22]. However, subsequent research demonstrates that this behavioral difference is less an innate female deficit in negotiation ability and more a highly rational response to asymmetric social incentives.
Hannah Riley Bowles, Linda Babcock, and Lei Lai (2007) in *Organizational Behavior and Human Decision Processes* conducted a series of four experiments to measure the "social cost" of initiating compensation negotiations[22]. Evaluators were presented with resumes, interview notes, and videos of candidates who either accepted a salary offer or initiated a negotiation for higher pay. The researchers found a significant backlash effect: evaluators penalized female candidates substantially more than male candidates for initiating negotiations[22]. The effect size was striking; for instance, the penalty for women initiating negotiations nearly tripled the penalty for men (e.g., $\eta^2 = 0.20$ vs $\eta^2 = 0.07$)[24].
In a subsequent experiment where participants adopted the candidate's perspective, women were significantly less inclined than men to negotiate when facing a male evaluator. Mediation analysis showed that anticipated negative social consequences, perceptions of "demandingness," and nervousness explained this reluctance[23]. Women are not inherently failing to ask; they are rationally avoiding a measurable social penalty for violating prescriptive gender norms that demand communal orientation over self-advocacy[22].

Self-Promotion

A similar dynamic governs how individuals subjectively evaluate and promote their own achievements. Christine L. Exley and Judd B. Kessler (2022) in the *Quarterly Journal of Economics* conducted large-scale experiments involving over 4,000 online adults and over 10,000 school-aged youth[26]. Participants completed an incentivized math and science task and were then asked to subjectively describe their performance on a scale of 0 to 100[26].
Even when controlling strictly for actual performance, a massive gender gap in self-promotion

emerged. Women evaluated their performance 13 points lower than equally performing men, representing a gap equivalent to 24% of the mean performance evaluation[26]. When these self-evaluations were provided to potential employers, the gender gap in self-promotion caused equally qualified women to be hired significantly less often and offered lower pay than their male counterparts[26].

Strikingly, Exley and Kessler found this 13-point gap persisted even when the self-evaluations were strictly private (uninformed by employer presence), and the gap was present in children as young as the sixth grade[26]. This suggests that the self-promotion gap is not merely a strategic response to promotion incentives, but a deeply internalized difference in self-evaluation.

The Allocation of Non-Promotable Tasks

The distribution of daily workplace labor also exhibits stark behavioral differences. Organizations rely heavily on "non-promotable tasks" (NPTs)—work that is essential to the organization but yields low proximal and distal returns for the individual's career (e.g., organizing committees, mentoring, writing routine reports).

Linda Babcock, Maria P. Recalde, Lise Vesterlund, and Laurie Weingart (2017) in the *American Economic Review* investigated the allocation of these tasks using a laboratory volunteer's dilemma game[29]. In the game, a task was introduced that benefited the group globally but penalized the specific individual who volunteered to do it. They found that women volunteered for the task 50% more often than men[29]. Specifically, the baseline probability of a woman volunteering was roughly 20 percentage points higher than that of a man[32].

Crucially, this is not merely a supply-side phenomenon driven by innate female altruism. In treatments where a manager had to proactively ask someone to complete the task, managers (both male and female) were significantly more likely to ask women than men[30]. Women, in turn, were more likely to accept these requests[30]. The researchers attribute this to shared social expectations and beliefs: both men and women expect women to take on unrewarded work, and women accept these tasks to avoid the social punishment of violating peer expectations[30].

Distinguishing Averages from Individuals: The Danger of the Naturalistic Fallacy

A critical error in applying behavioral economics to organizational policy is conflating group averages with individual traits. Feminist economists, notably Julie A. Nelson (2015, 2016), have heavily criticized the literature for focusing exclusively on differences in means while ignoring the massive overlap in male and female distributions[33].

When researchers state that "men are more competitive than women," they are describing a statistically significant difference in means. However, the distributions of male and female competitiveness, risk aversion, and self-promotion overlap substantially. Using Cohen's d to calculate the Index of Similarity, Nelson demonstrates that for many economic preferences, the male and female distributions overlap by 80% to 90%[33]. Practically, this means that if you randomly select one man and one woman from a population, the woman will be more competitive or more risk-taking than the man up to 40% to 45% of the time.

Basing hiring or promotion decisions on statistical averages rather than individual merit is the

definition of statistical discrimination. A woman exhibiting highly competitive behavior or aggressive negotiation tactics is acting entirely within the normal human distribution, even if the peak of the female bell curve sits slightly lower than the male bell curve. Thus, while organizational architects must understand group averages to design fair choice architectures, managers must evaluate individuals based strictly on their specific, realized traits. Furthermore, succumbing to the naturalistic fallacy—assuming that because these differences are observed "naturally" in the data, they are good, inevitable, or optimal—shuts down the necessary work of structural reform.

Layer 3: Culture (Variable)

If the physiological layer is non-deterministic and the behavioral layer shows distinct statistical gaps driven by incentives, the cultural layer demonstrates the profound plasticity of these outcomes. Cross-cultural economics has provided the most compelling evidence that gender differences in competition and risk are deeply context-sensitive, shaped by historical institutions, lineage systems, and societal norms.

Matrilineal vs. Patriarchal Societies

The definitive evidence on cultural variability comes from artefactual field experiments comparing societies with diametrically opposed gender norms. Uri Gneezy, Kenneth Leonard, and John A. List (2009) in *Econometrica* investigated competition preferences in two distinct traditional societies: the patriarchal Maasai of Tanzania and the matrilineal Khasi of Meghalaya, India[11]. The Maasai represent a highly patriarchal structure where women have minimal property rights and economic independence. The Khasi are a matrilineal society where inheritance and clan membership pass through the female line, and the youngest daughter receives the family wealth[36].

Using a ball-tossing task with piece-rate versus tournament incentives, the results were staggering. Among the patriarchal Maasai, 50% of men chose to compete compared to only 26% of women. However, in the matrilineal Khasi society, this pattern entirely reversed: 54% of women chose to compete compared to only 39% of men[11]. The Khasi women were more competitive than both Khasi men and Maasai men.

This fundamental finding was reinforced by Binglin Gong and Chun-Lei Yang (2012, 2015), who studied two neighboring ethnic minorities in China's Yunnan province: the matrilineal Mosuo and the patriarchal Yi[37]. In a dictator game designed to measure pro-sociality and generosity, Eckel and Grossman (1998) famously found that Western women are generally more generous than men. Gong and Yang (2015) in *Experimental Economics* replicated this among the patriarchal Yi, finding no gender difference or slight female generosity. However, among the matrilineal Mosuo, the pattern reversed: Mosuo men were significantly more generous than Mosuo women[37]. Similarly, Mosuo girls initially exhibited higher risk-taking and competitiveness than Mosuo boys[40].

Fascinatingly, Gong and Yang documented the precise mechanism of acculturation. When Mosuo children entered schools and mixed with the patriarchal Han majority, the Mosuo girls gradually became more risk-averse over time. By age 11, after prolonged exposure to the dominant cultural institutions, Mosuo girls had adopted the patriarchal norm and became more

risk-averse than Mosuo boys, powerfully illustrating the socializing force of dominant cultures[40].

Epidemiological Evidence on Ancestry

The impact of cultural norms persists even when formal institutions are held constant across a modern population. Karen Evelyn Hauge and Andreas Kotsadam (2023) in the *Economic Journal* applied an epidemiological approach to study the willingness to compete among 1,943 Norwegians whose parents were born in 59 different countries[11].

Because all participants were raised in Norway, they were subject to the exact same formal egalitarian institutions, schools, and labor markets. The researchers found that individuals whose parents hailed from highly gender-equal countries exhibited a significantly smaller gender gap in competition[11]. This convergence was bidirectional: men from gender-equal ancestries were less likely to compete, while women from gender-equal ancestries were more likely to compete[11].

Cultural Context	Dominant Social Structure	Observed Gender Gap in Competition	Key Source
Maasai (Tanzania)	Highly Patriarchal	Massive standard gap (Men 50% vs Women 26%).	Gneezy, Leonard, & List (2009)[11]
Khasi (India)	Matrilineal	**Reversed gap** (Women 54% vs Men 39%).	Gneezy, Leonard, & List (2009)[36]
Mosuo (China)	Matrilineal	**Reversed gap** in early childhood risk/generosity; normalizes to patriarchal standards via school acculturation by age 11.	Gong, Yan, & Yang (2015)[37]
Norwegian Immigrants	Egalitarian (variable ancestry)	Gap narrows bidirectionally based on the gender equality index of the parents' ancestral country.	Hauge & Kotsadam (2023)[11]

The cultural layer conclusively demonstrates that the gender gap in competitiveness, risk-taking, and negotiation is not an immutable human universal. When women possess structural economic power and are socialized without prescriptive norms of submissiveness, they exhibit competitive and self-promoting behaviors equal to or exceeding those of men.

Interactions with Organizational Design and Alternative Architectures

The physiological, behavioral, and cultural layers converge in the modern workplace. Traditional organizational designs often inadvertently weaponize the behavioral differences described above, utilizing mechanisms that systematically disadvantage women. However, experimental economics also provides blueprints for alternative architectures that neutralize these frictions.

The Pathology of Traditional Designs

Many modern organizations rely on **self-nomination** for promotions, **tournament pay** (winner-take-all bonuses), **up-or-out systems**, and **unstructured salary negotiations**.

1. **Tournament Pay:** Because women on average shy away from tournament incentives (Niederle & Vesterlund, 2007) and perform worse under ambiguity (Gneezy, Niederle & Rustichini, 2003), compensation schemes based on relative ranking rather than absolute output actively deter highly qualified women from applying to or staying in those roles[8].
2. **Self-Nomination and Negotiation:** Upward mobility often requires employees to advocate for themselves. Given the 13-point gender gap in self-promotion identified by Exley & Kessler (2022) and the severe social backlash women face for negotiating (Bowles, Babcock & Lai, 2007), self-nomination systems heavily filter out competent women while actively promoting overconfident men[22].
3. **Credit Attribution in Teams:** Collaborative work introduces ambiguity regarding individual contributions. Research into academic tenure shows that when men and women co-author, men receive a disproportionate share of the career credit. For example, an additional coauthored paper is correlated with an 8.2% increase in tenure probability for men but only a 5.6% increase for women, a discrepancy that explains roughly 60% of the unconditional gender gap in tenure rates[43].

Evidence on Alternative Designs

To mitigate these structural frictions, organizations can alter choice architectures to align with equitable outcomes. Instead of demanding that women "fix" themselves to operate within a flawed system, organizations can fix the system.

1. **Opt-Out Defaults:** Flory, Leibbrandt, and List (2015) in *Management Science* tested tournament entry mechanisms in a field experiment with 7,000 job seekers. When the tournament was framed as an "opt-in" choice, it yielded a massive 25% gender gap (72.5% of men entered vs 46.7% of women). However, when the exact same competition was framed as an "opt-out" default (candidates were automatically entered but could leave), the gender gap was completely eliminated (76.4% men vs 75.3% women)[44].
2. **Affirmative Action and Quotas:** Niederle, Segal, and Vesterlund (2013) in *Management Science* found that introducing a gender quota (guaranteeing equal representation among

winners) increased female entry into tournaments dramatically. Because it pulled in highly competent women who previously abstained out of risk aversion, the quota achieved diversity *without* lowering the actual performance threshold required to win[46].

3. **Informing Advisors:** Exley and Kessler (2022) found that the female self-promotion deficit usually results in women receiving less ambitious career advice. However, simply informing advisors that women systematically self-promote less completely eliminated the 12-percentage-point gender gap in ambitious career advice given to female workers[48].
4. **Transparent Pay and Task Rotation:** Organizations can limit the reliance on unstructured negotiations by implementing transparent pay bands, which entirely eliminates the backlash penalty women face when initiating negotiations[22]. Furthermore, restructuring the allocation of Non-Promotable Tasks (NPTs)—by moving from a volunteer/ask system to a randomized or rotating schedule—prevents the invisible labor burden from falling disproportionately on female employees[30].

Summary of Robust Findings

1. Large-scale randomized controlled trials ($N = 1,000$) definitively show that short-term exogenous testosterone has zero causal effect on male economic preferences, risk-taking, or competition.
2. In laboratory settings, men self-select into competitive tournament environments at significantly higher rates than women, even when actual performance is identical.
3. This experimental gender gap in competitiveness has strong external validity, predicting real-world outcomes and explaining roughly 20% of the gender gap in prestigious academic track selection.
4. Correcting for econometric measurement error in risk aversion and overconfidence via instrumental variables heavily attenuates, and sometimes eliminates, the residual "preference for competition."
5. Women face a significantly higher social and professional backlash penalty for initiating salary negotiations than men, driving a highly rational reluctance to ask for higher pay.
6. Even when controlling for actual performance, women subjectively evaluate and self-promote their abilities 20% to 25% lower than men, a phenomenon that persists from childhood through adulthood.
7. Women volunteer for, are explicitly asked to do, and accept non-promotable organizational tasks significantly more often than men, driven by shared peer expectations.
8. In matrilineal societies (e.g., Khasi, Mosuo), women are as competitive, risk-taking, and self-promoting as men, proving these economic traits are highly malleable and socialized.
9. Changing organizational competition entry systems from a traditional "opt-in" choice to an "opt-out" default entirely eliminates the gender gap in tournament application rates.
10. Male and female statistical distributions for economic preferences overlap by 80% to 90%, making it mathematically invalid to assume an individual lacks competitiveness based solely on their gender.

Contested or Open Questions

- **The Nature of the Competition Gap:** Does a distinct, innate "preference for competition" actually exist, or is it merely a statistical artifact of measurement error in risk aversion and overconfidence, as rigorously argued by Gillen, Snowberg, and Yariv (2019)?
- **The Dual-Hormone Hypothesis:** Do complex endocrine interactions between baseline cortisol, social status cues, and testosterone reliably predict behavior outside of highly specific, small-sample laboratory contexts?
- **Group vs. Individual Competition:** Do women shy away from competition entirely, or only when competing as isolated individuals? Open questions remain on how women compete when representing teams, or when rewards accrue to subordinates and protégés rather than just themselves.
- **Long-term Effects of Quotas:** While affirmative action clearly increases female entry into competitions, its long-term effects on peer review dynamics, workplace sabotage, and the perceived legitimacy of female leaders remain heavily contested in the empirical literature.

5 to 10 Most Important Sources to Read in Full

1. **Niederle, M., & Vesterlund, L. (2007).** "Do Women Shy Away From Competition? Do Men Compete Too Much?" *Quarterly Journal of Economics*, 122(3): 1067-1101. (The seminal paper establishing the tournament-entry gap).
2. **Bowles, H. R., Babcock, L., & Lai, L. (2007).** "Social incentives for gender differences in the propensity to initiate negotiations: Sometimes it does hurt to ask." *Organizational Behavior and Human Decision Processes*, 103(1): 84-103. (Details the backlash effect against female negotiators).
3. **Exley, C. L., & Kessler, J. B. (2022).** "The Gender Gap in Self-Promotion." *Quarterly Journal of Economics*, 137(3): 1345-1381. (Comprehensive experimental evidence on the 13-point self-promotion gap).
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5. **Gneezy, U., Leonard, K. L., & List, J. A. (2009).** "Gender Differences in Competition: Evidence From a Matrilineal and a Patriarchal Society." *Econometrica*, 77(5): 1637-1664. (The foundational Khasi vs Maasai cultural baseline study).
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Implications for Living Together

Note: The following analysis strictly avoids the naturalistic fallacy; the observation that certain behaviors manifest "naturally" under specific evolutionary or cultural conditions does not render those behaviors morally good, inevitable, or socially optimal.

For couples, families, small groups, organizations, and societies, the empirical evidence clearly demonstrates that structural environments and choice architectures dictate behavioral outcomes. If a couple or family relies on unstated expectations to allocate household labor, the cultural default will reliably saddle women with the equivalent of "non-promotable tasks." Because both men and women share internalized expectations that women will volunteer for unrewarded labor to avoid social friction, implicit systems fail. To live together equitably, families and small groups must replace implicit volunteering with explicitly negotiated, transparent chore rotations that bypass the psychological pressure to conform to gendered altruism.

For organizations and societies, relying on "opt-in" competition, self-nomination for promotions, and aggressive, unstructured salary negotiations will invariably generate gender inequality. This occurs not because women are biologically less capable or fundamentally less ambitious, but because the highly rational response to the social penalties, credit-attribution biases, and confidence gaps embedded in our culture is to opt out. Organizations must shift the burden of equitable selection away from the individual and onto the architecture of the system itself. Implementing "opt-out" defaults for tournament and promotion tracks, standardizing transparent pay bands, actively auditing who is assigned invisible labor, and informing management about the statistical reality of the self-promotion gap are highly effective, evidence-based interventions. Societies that structure their institutions to mitigate these behavioral frictions—much like matrilineal societies structure their inheritance and cultural norms—can successfully neutralize these gaps. By doing so, we ensure that resources, compensation, and leadership are allocated based on actual, realized talent rather than an artificially constrained willingness to compete.

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