Psychology and Economics[1]

14.13 Lecture 18: Gender, discrimination, and identity

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[1]This lecture uses materials from presentations by Marianne Bertrand, Heather Sarsons, and Linda Babcock. I would like to thank them, without implicating them in any way, for sharing their materials with me.

Some housekeeping

- Pset 4 due today (April 22) at 6 pm. Pset 5 will be posted soon.

- Five more lectures!
  - Lecture 19: Frames, Defaults, Nudges, and Mental Accounting
  - Lecture 20: Malleability and Inaccessibility of Preferences
  - Lecture 21: Poverty through the Lens of Psychology
  - Lecture 22: Happiness and Mental Health (special surprise guest lecturer!)
  - Lecture 23: Policy and Paternalism

Thanks for your feedback!

- Learning and teaching online is difficult.
  - Huge heterogeneity of impacts

- Social isolation and loneliness are challenging
  - People tend to underinvest in social connections. See more HERE.

- Challenges with online teaching and in general
  - Lectures were designed for in-person teaching. Tricky to fix this quickly.
  - Lectures don't include much math.
  - Psets are meant to help you think through models.
 - Limited discussions: please use online forum, office hours, etc. to interact more!

Agenda today: gender and identity

- Introduction and overview (Bertrand, 2010)

- Goldin (2014): the gender gap

- Goldin and Rouse (2000): technological solutions

- Sarsons (2019): beliefs

- Bertrand et al. (2015): gender identity norms

- Vesterlund et al. (2015): do women say 'no' often enough?

(Why) study gender differences (Bertrand, 2010)?

- Equity/fairness/justice
  - People should be rewarded equally for the same output.
  - There should be equality of opportunities.

- Efficiency
  - Overall productivity/welfare falls if women (and other groups) held back by discrimination and other distortions.
  - Substantial share of recent US growth explained by improved allocation of talent (Hsieh et al., 2019)

- Understand formation of preferences and personality
  - Risk and social preferences
  - Competitiveness (Niederle and Vesterlund, 2011), attitudes towards negotiation
  - Identity, aspirations, and over- or under-confidence

- Nature vs. nurture

# The gender gap (Goldin, 2014)

Part A. No controls
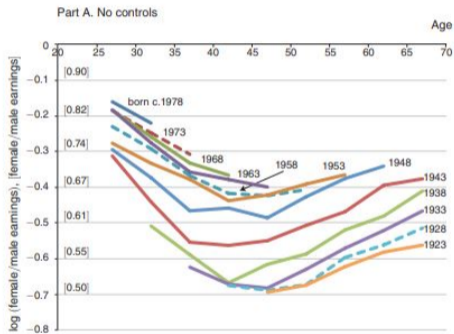
- Graph shows log difference in earnings (y-axis) by age (x-axis) for different cohorts (colors).

- Substantial female labor market gains over last half century but large gender gaps remains

- In 2010, ratio of (mean) annual earnings between male and female workers (full-time, full-year, 25 to 69 years) was 0.72 and that of the medians was 0.77.

- Figures control for work time and education!

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Substantial female labor market gains over last half century

- Reduced gender gap in labor force participation and earnings

- Main explanatory factors:
    - Reduction in the gender gap in education
    - Technological innovations (pill, dishwasher, etc..)
    - Labor demand shifts
    - Lower discrimination (stronger regulatory controls, increased market competitiveness)

- Goldin and Rouse (2000): example of a (simple) technological solution
   - Did blind auditions in orchestras increase gender ratios in orchestras?

Striking increase in female shares in top US orchestras

A

- Shockingly low female ratios even in the 1970s and 1980s in top orchestras
  - Lots of blatant sexism by renowned conductors (see Section I in paper).

- Striking increases over past few decades

- Similar improvements in gender ratios in other orchestras. See more HERE.
  - Still vast differences for conductors and music directors
  - Most musicians are (still) white.
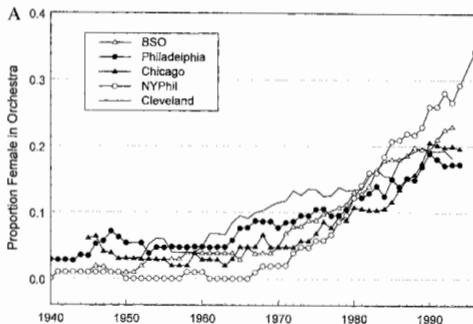
Courtesy of Claudia Goldin and Cecilia Rouse. Copyright American Economic Association; reproduced with permission of the *American Economic Review*.

Aside: women in economics
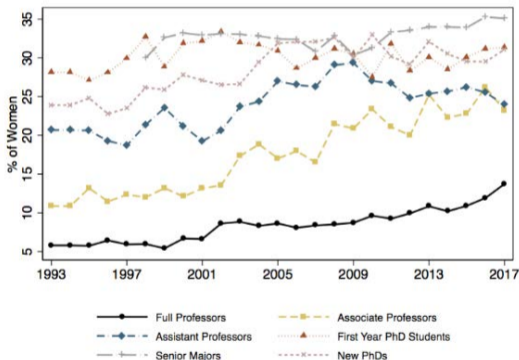
- Overall low fraction of women in economics

- Some progress but lots more to be done (Lundberg and Stearns, 2019)

- Profession is starting to understand and address the issue.
  - Example: CeMENT mentoring programs

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9

Many orchestras introduced blind auditions in the 1970s and 1980s.

TABLE 1—ORCHESTRA AUDITION PROCEDURE SUMMARY TABLE

Orchestra	Preliminaries	Semifinals	Finals
A	Blind since 1973	Blind (varies) since 1973	Not blind
B	Blind since at least 1967	Use of screen varies	Blind 1967–1969; since winter 1994
C	Blind since at least 1979 (definitely after 1972)	Not blind: 1991–present Blind: 1984–1987	Not blind
D	Blind since 1986	Blind since 1986; varies until 1993	1st part blind since 1993; 2nd part not blind
E	Use of screen varies until 1981	Use of screen varies	Not blind
F	Blind since at least 1972	Blind since at least 1972	Blind since at least 1972
G	Blind since 1986	Use of screen varies	Not blind
H	Blind since 1970	Not blind	Not blind
I	Blind since 1979	Blind since 1979	Blind since fall 1983
J	Blind since 1952	Blind since 1952	Not blind
K	Not blind	Not blind	Not blind

Notes: The 11 orchestras (A through K) are those in the roster sample described in the text. A subset of eight form the audition sample (also described in the text). All orchestras in the sample are major big-city U.S. symphony orchestras and include the "Big Five."

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10

Goldin and Rouse (2000): technological solutions can help.

- Many symphony orchestras introduced 'blind' auditions to conceal candidate's identity from the jury.

- Goldin and Rouse (2000) consider data from actual auditions (often using individual fixed effects).

- Overall, evidence suggests that the blind audition procedure fostered impartiality in hiring and increased the proportion of women in symphony orchestras.

- Caveat: Some of the estimates have large standard errors and there is one persistent effect in the opposite direction.

Dynamics of discrimination

- Potential reason why results are less clear-cut: several rounds, not all of which were blinded.

- If there is discrimination in one round but not in the next, expect the discriminated person who make it to the next round to do *better*.

- Example:
    - Suppose male and female workers get rated in a task.
    - Suppose women get rated systematically worse due to sexism (and no other reason).
    - For any given score, expect women to do better than men.

- Excellent paper by Bohren et al. (2019) considers this issue in detail.

Yet, substantial gender gaps remain.

- Substantially reduced gender gap in labor force participation and earnings

- But women's labor force participation has plateaued since early-mid 1990s.

- Among entering cohorts, women still earn significantly less than men (even conditional on work time and education).

- Remaining gender gaps led researchers to consider less traditional (within economics) factors.
    - Risk attitudes
    - Negotiation skills, taste for competition
    - Beliefs
    - Social norms and identity

Are Emily & Greg more employable than Lakisha & Jamal?

- Seminal study by Bertrand and Mullainathan (2004) randomized names in job applications

- Key result: callback rates for White-sounding names 50% higher than for African-American-sounding names
  - Numerous other studies show gender and racial biases

- Very important (and depressing) result; hard to distinguish statistical from taste-based discrimination (see more in recitation)
  - (1) Preferences: Do employers prefer white applicants (controlling for performance)?
  - (2) Beliefs: Do employers *think* African-American applicants will perform worse (even controlling for all other aspects of the resume)?

14

Sarsons (2019): Interpreting signals in the labor markets

- Does someone's gender influence the way we interpret information about him/her? His/her peers?

- Hiring, promotion, and wage decisions hinge on information about worker's ability

- Systematic differences in how information about men and women is interpreted might contribute to gender gap

Referrals from physicians to surgical specialists

- How do physicians change referrals to surgeons (and peers) after a patient outcome?

- Physicians refer patients needing surgery to a local surgeon.

- Referral choice reflects physician's belief about surgeon ability.

- To document whether reaction depends on surgeon gender:
    - Match on surgeon and patient characteristics, and on procedure
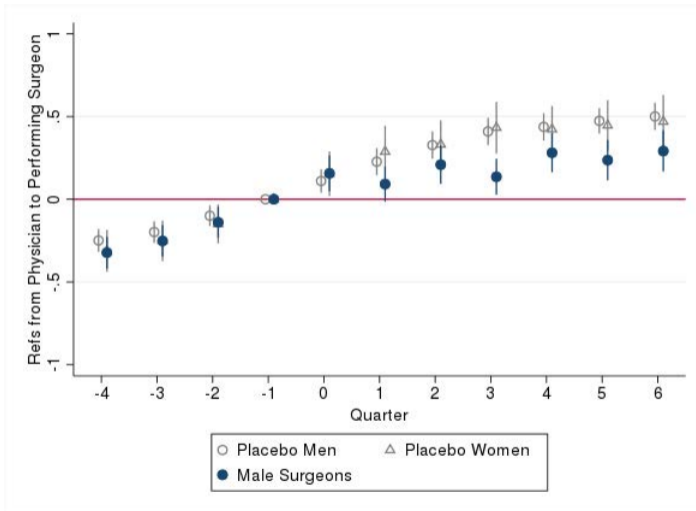   - Surgeons differ only by gender
    - Event study comparing how physician reacts to M/F surgeon

Referral path when there is no adverse event
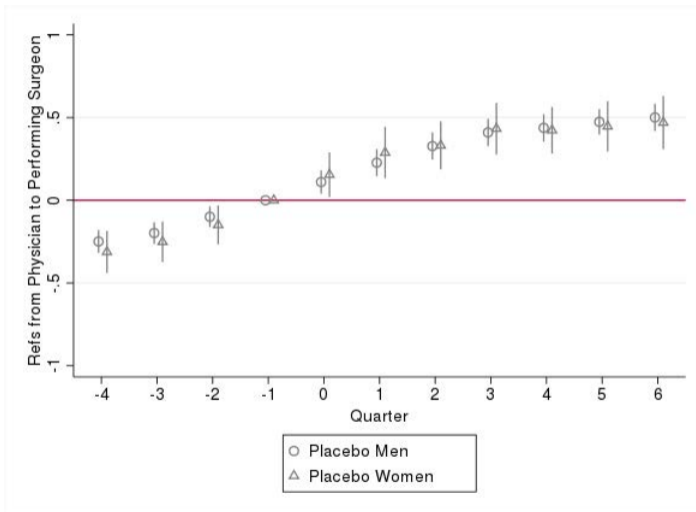
Courtesy of Heather Sarsons. Used with permission.

17

Note: Figure uses matched sample of surgeons who do not experience a bad event (e.g. patient death). Avg refs in $t = -1$ is 0.65.
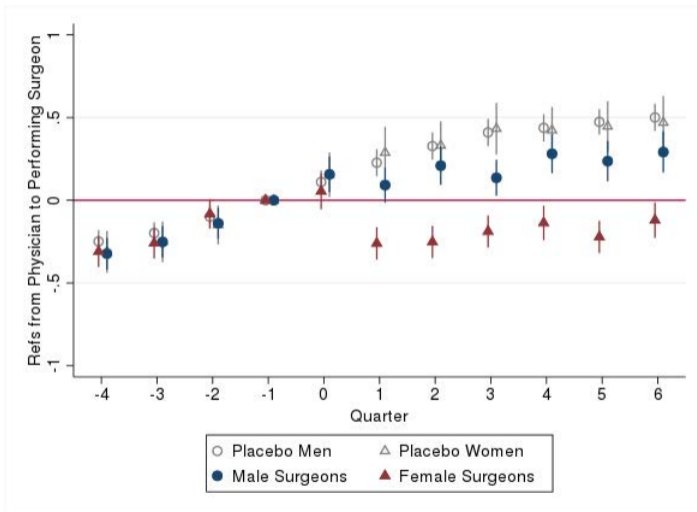
Referral path after a adverse event

Courtesy of Heather Sarsons. Used with permission.

Note: Figure adds male surgeons from matched sample of surgeons with a bad event (e.g. patient death). Avg refs in $t = -1$ is 0.65.
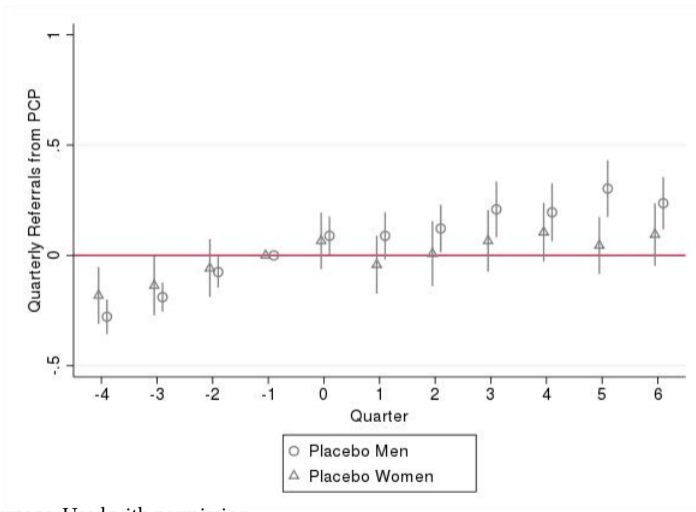
Referral path after a adverse event

Courtesy of Heather Sarsons. Used with permission.

Note: Figure adds female surgeons from matched sample of surgeons with a bad event. Avg refs in $t = -1$ is 0.65.
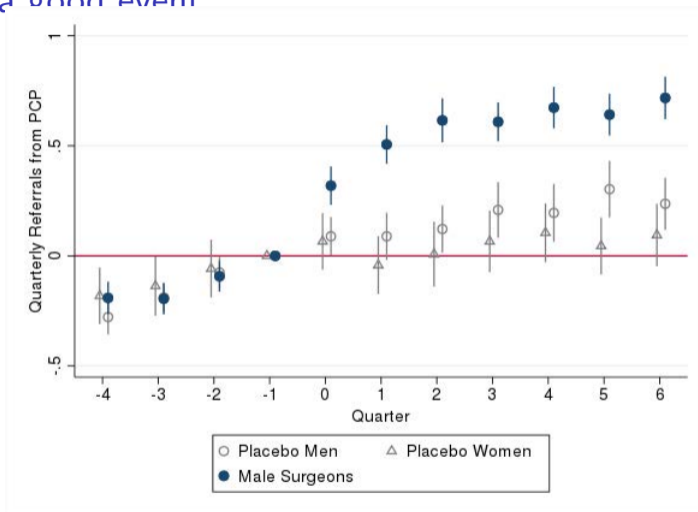
Referral path in absence of good event

Courtesy of Heather Sarsons. Used with permission.

Note: Figure uses matched sample of surgeons who do not experience a good outcome (patient readmitted or dies).
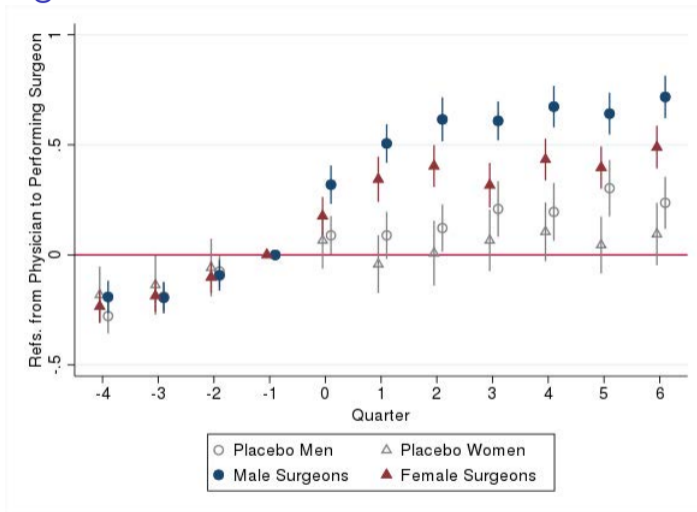
Referrals after a good event

Courtesy of Heather Sarsons. Used with permission.

Note: Figure adds male surgeons from matched sample of male/female surgeons who have a good patient outcome.

Referrals after a good event

Courtesy of Heather Sarsons. Used with permission.

Note: Figure adds female surgeons from matched sample of surgeons who have a good patient outcome.

Sarsons (2019): summary of main results

- After a bad outcome (patient death)
  - 34% decrease in referrals to female surgeon
  - Stagnation in referrals to male surgeon
  - Physician less likely to refer to other female surgeons

- After a good outcome (unanticipated survival)
  - Doubling of referrals to male surgeon
  - 70% increase in referrals to female surgeon
  - No spillovers to other female surgeons

Discussion: Why do asymmetries matter?

- Women have fewer chances to make mistakes
    - Lower skill accumulation
    - Dropping out

- Wage gap measured conditional on skills, industry, position
    - Differences in evaluations $\rightarrow$ skills and position in workplace

- Stop receiving signals from women
    - When women underrepresented, employer sees fewer outcomes
    - Updates more after bad outcomes, updates about all women
    - Quicker to let woman go and less likely to hire more women
    - Employer stops updating about women earlier than about men

Will algorithms, machine learning, etc. help overcome such biases?

- Algorithms can be biased too! Why?

- They are trained based on human decisions.

- But they might be easier to be fixed!
    - Can build equity concerns into the objective function of an algorithm

- Fascinating talk on discrimination by algorithm and people by Sendhil Mullainathan HERE.

Bertrand et al. (2015): gender identity norms

- Identity considerations imported from social psychology into economics in multiple papers by Akerlof and Kranton (2000).
  - Gender identity norms as an important example/application.
  - Two social categories: "Men" and "Women."

- Gender identity changes 'payoffs' from different actions as dictated by prescriptive norms.
  - "Men should not do women's work in the home."
  - "Men should earn more than their wives."

Does gender identity cause 'distortions'?

- Husband may lose identity (and experience lower utility) in circumstances in which these prescriptions are violated:
  - When he does housework
  - When his wife earns more than half the household income

- Bertrand et al. (2015) focus on the prescription that "men should earn more than their wives."
  - This particular gender identity norm would not matter in a world where a woman could never earn more than her (actual or potential) husband.
  - As women make gains in labor market, slow-moving gender identity norms become an increasingly relevant constraint.

- How could we study this question empirically?

Distribution of relative income - US admin data

- Survey of Income and Program Participation (SIPP)
  - Series of representative national panels
  - Data are linked to administrative data on income from the Social Security Administration and Internal Revenue Service.

- 73,654 couple-level observations from 1990 to 2004.
  - Include all married couples with both husband and wife earning positive income and are 18 to 65 years old
  - Consider only first year of each couple in the panel.
  - Income measure: annual total labor income and self-employment income
  - Compute shares of couples earning different fractions of total income (20 bins).

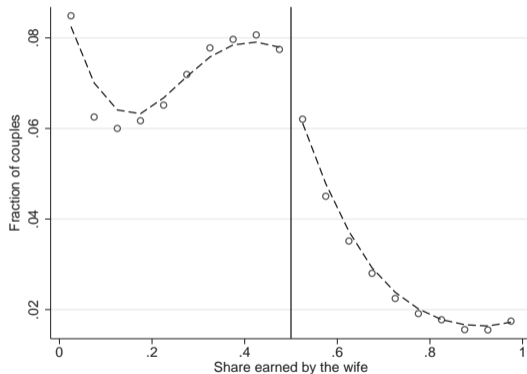# Bertrand et al. (2015): Gender identity norms at work

FIGURE I

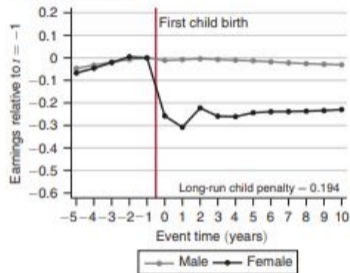Distribution of Relative Income (SIPP Administrative Data)

- "Cliff" to the right of .5 in the distribution of relative earnings across couples.

- Implication of prescription that "men should earn more than their wives".

- What are the mechanisms for this 'missing mass'?

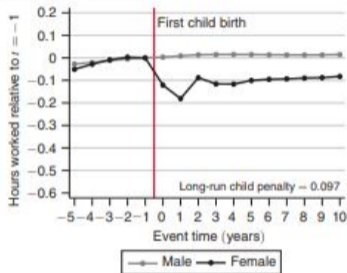# Multiple channels cause missing mass in relative earnings distribution

(1) 'Missing couples' did not form in the first place.

(2) Such couples are less happy and stable, more likely to end in divorce.

(3) Wives with higher potential income than husbands work less outside of the household, and are held back by non-market and child care work.

Arrival of children and the gender gap (Kleven et al., 2019)

Panel A. Earnings — Panel B. Hours worked. Event time (years) relative to first child birth, comparing Male and Female. Long-run child penalty = 0.194 (earnings); Long-run child penalty = 0.097 (hours worked).

- Arrival of child creates a long-run gender gap in earning of around 20 percent driven by hours worked, participation, and wage rates in Denmark.
- Child penalties are transmitted through generations, from parents to daughters, suggesting an influence of child environment on gender identity.

Who benefits from gender-neutral family policies? (Antecol et al., 2018)

- Gender-neutral tenure clock stopping policies adopted by majority of research-intensive universities in the US in recent decades.

- What do such policies do?
    - Intended to involve men more in childcare
    - But no enforcement and thus potentially enhancing gender inequality

- Gender-neutral policies do not level the playing field in terms of tenure outcomes if men are able to use the extra time more productively or strategically than women

- Introduction of policy at top-50 economics departments substantially *reduced* female tenure rates while increasing male tenure rates.

'Acting Wife': Marriage market incentives and labor market investments

- Bursztyn et al. (2017): Do women avoid career-enhancing actions because these actions signal undesirable traits, like ambition, to the marriage market?

- While married and unmarried female MBA students perform similarly when their performance is unobserved by classmates (on exams and problem sets), unmarried women have lower participation grades.

- Field experiment with MBAs:
  - Single female students reported lower desired salaries and willingness to travel and work long hours on a real-stakes placement questionnaire when they expected their classmates to see their preferences.
  - Other groups' responses were unaffected by peer observability.
  - Second experiment indicates effects are driven by observability by single male peers.

Vesterlund et al. (2015): do women say 'no' often enough?

- Female faculty spent 7.5 fewer hours per week on research and 4.6 more hours per week on university service committees than male faculty (Misra et al. 2011).

- Female faculty more likely to have positions on university-wide committees (Porter 2007)

- Female faculty advised more undergraduate students and participated in more department and college level committees than male faculty (Heslie 2013).

- In mid-level jobs, men, more than women, evaluate their individual task assignments as challenging and this is partially attributed to differential task assignments by supervisors (De Pater et al. 2010).

(Why) do women spend their time at work differently?

- **Demand:** Are there sex differences in the types of tasks that women and men are asked to do at work? Are women more likely than men to be asked to do 'non-promotable tasks'? Why?

- **Supply:** Are there sex differences in the willingness to agree to perform non-promotable tasks when asked? Are women more likely than men to say yes to non-promotable tasks? Why?

Why do we care?

(1) Individual decision-making perspective

- People may make sub-optimal decisions about how to allocate their time at work.
- Understand the underlying reasons and potential interventions to improve decision-making

(2) Managerial/Social planner perspective

- Organizations may not be using their resources most efficiently.
- Could increase overall efficiency by reallocating tasks.

(3) Public policy perspective

- Sex difference in allocation of time may help explain vertical sex segregation (occupational segregation).
- Might be able to identify interventions to improve equity.

Types of tasks

- Promotable tasks (doing research)

- Non-promotable tasks (e.g. sitting on the IRB committee)
    - Discretionary
    - Many people could do the task.
    - Everyone wants the task to be done, yet prefers that someone else do it.

Field study

- 3,271 faculty at a large public university were sent email from Chair of the Faculty Senate

- Request to volunteer to join one of several university-wide Faculty Senate committees

- Women are much more likely to volunteer when asked.

Lab experiment: Threshold public goods game

- A small group needs to find a volunteer for a task
  - Participants anonymously matched into groups of three
  - Randomly re-matched for each of 10 rounds

- Everyone prefers that the task be undertaken by someone other than themselves
  - Two minutes to decide whether to invest
  - Only one person can invest; round ends when someone invests.
  - If no one invests, group members all earn $1.
  - If a person invests, that person earns $1.25 & the remaining group members each $2.
  - The clock ticks down until one person invests or no investment is made in 2 minutes.

Women are significantly more likely to invest.

Figure 1: Probability of investing (Exp 1)
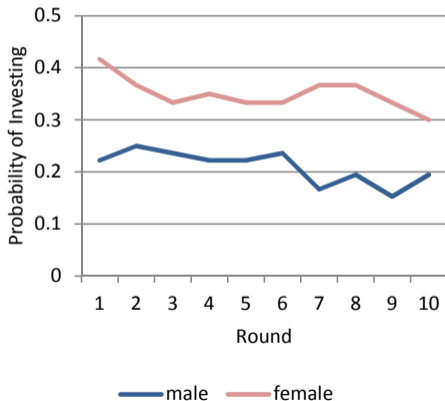
Figure 2: Distribution of total investment (Exp 1)
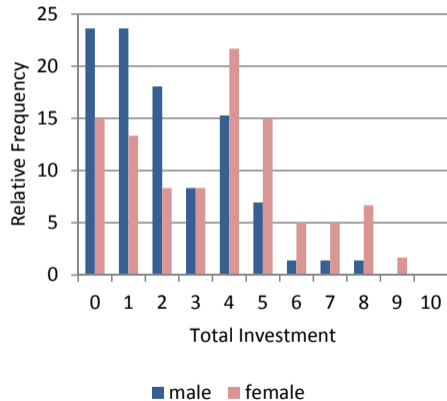
Why are women more likely to invest?

- What if women believe that their cooperation is necessary for an optimal group decision but men believe that their cooperation isn't required?

- Re-ran the experiment using single sex sessions
  - 3 all female ($n = 66$)
  - 3 all male ($n = 51$)

No gender differences in same-sex sessions
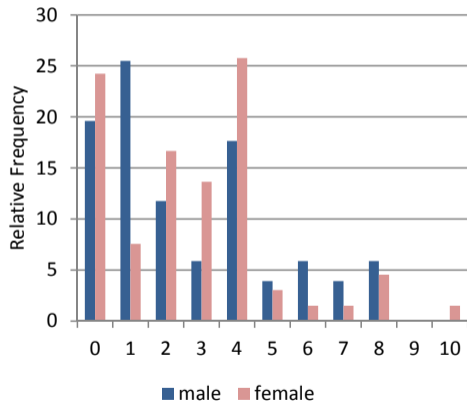
Figure 3: Probability of investing (Exp. 2)
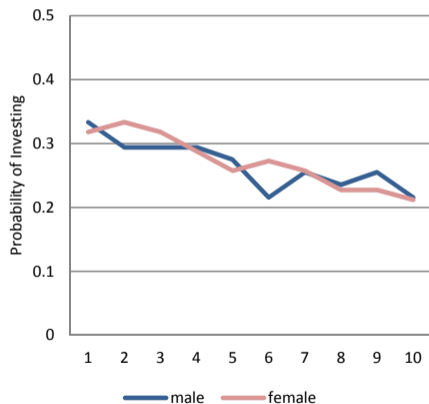
Figure 4: Distribution of total investment (Exp. 2)

No gender differences in same-sex sessions

- Experiment 1: Mixed Sex
    - Women are more likely to invest.

- Experiment 2: Single Sex
    - Women and men are equally likely to invest.

- Are difference in contributions due not to differences in preferences for investing but due to differences in beliefs that women will invest?

Experiment 3

- If you benefit from getting a task done, whom would you ask?

- Photo Ask
    - 4 people per group
    - 3 people can invest (incentives as before); green players
    - 1 person unable to invest, asks one of the three to invest (request is not binding on receiver); red player
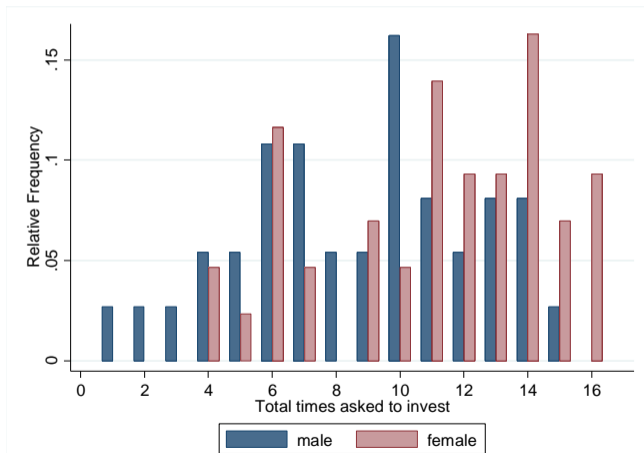
Whom would you ask?

Courtesy of Lise Vesterlund, Linda Babcock, Maria Recalde, and Laurie Weingart. Used with permission.

Women are more likely to be asked.

Figure 7: Distribution of requests received in a session: strategy method (Exp. 3)

Is it better to ask a woman?

- Absent a request, investment rate does not differ by gender.

- But when asked to invest, women are more likely to do so.
  - When women are asked to invest, 76% invest, compared to 14% when not asked.
  - When men are asked to invest, 51% invest, compared to 14% when not asked.
  - Suggests marginal increase of being asked is higher for women than for men.

- Since women are expected to be more likely to say yes, they are also asked more.
  - Gender differences get amplified by increased demand for women to contribute

Gender, discrimination, identity: Summary

- Large gender wage and earnings gaps

- Substantial progress made due to technological advances and other improvements but persistent gender differences

- Biased beliefs and identity concerns play a major role.

- Feedback mechanisms: Demand and supply of non-promotable tasks matter.

- Better understanding these issue can help us mitigate the gender gap

What's next?

- Lecture 19 (Monday, April 27): Frames, defaults, nudges, and mental accounting
  - Please read Madrian and Shea (2001)

- Lecture 20 (Wednesday, April 29): Malleability and inaccessibility of preferences
  - Please read Ariely et al. (2003)

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Vesterlund, Lise, Linda Babcock, and Laurie Weingart, "Breaking the Glass Ceiling with "No": Gender Differences in Declining Requests for Non-Promotable Tasks," *mimeo*, 2015.

14.13: Psychology and Economics
Spring 2020