Gender Differences in Competition and Task Choice

Muriel Niederle
Stanford University and NBER

Universities, Careers and Women
Columbia, Sept. 19, 2008
Gender differences in Competition

Can economic gender differences be (also) driven by gender differences in attitudes towards competition?
Do Women perform less well in competition?
Do Women shy away from competition?
Is it especially competition against men?
Can institutional changes affect gender differences (and at what cost)?
Do general gender differences emerge that have effects in other dimensions?


Performance in competitive environments: Gender differences
with Uri Gneezy and Aldo Rustichini, QJE 2003

Are gender differences in performance increased in competitions?
Observe Women and Men in a competitive and noncompetitive environments.
Piece rate scheme: Noncompetitive

3 women and 3 men solve mazes for 15 minutes receive ~ 50 cents for each solved maze.

Participants do not know others’ earnings. In each treatment we have: 30 men and 30 women.
Non competitive: Piece Rate

Average Male: 11.23   Female: 9.73.  (p= 0.2023)
Competitive Pay: Tournament

- 3 Women and 3 Men solve mazes for 15 minutes.
- The person that solves the most mazes receives ~3 dollars for each maze solved.
- Others receive nothing
- Winners are not announced
Competitive Pay / Tournament

Tournament: Men: 15, Women: 10.8 (p = < .01)
Piece Rate: M: 11.23 (p < .01)   W: 9.73: (p = 0.62).
Explanations for the gender gap in tournament performance

- Women can’t perform higher
- Women do not like to compete at all
- Women do not like to compete against men
- Women do not like to perform when payment is uncertain
Single sex tournaments

6 Women, or 6 men solve mazes for 15 min. The person that solves the most mazes receives ~ $3 for each maze solved. Others receive nothing.

Women compete and perform highly, they are not different from men who compete in single sex tournaments
• Women do not compete against men.
• Women competing against women respond to competition as much as men do.

How does performance in competitions translate to a preference to perform in competitions?
“Do Women Shy Away from Competition? Do Men Compete too Much?” with Lise Vesterlund, QJE 2007

Want to observe selection into competitive environments: Prefer a task with little gender difference in performance.

Add up 5 two-digit numbers for 5 min.

2 women and 2 men per group from U. of Pittsburgh. Overall 40 women and 40 men.

| 21 | 35 | 28 | 79 | 83 |
Groups: 2 Women and 2 Men

Task 1- Piece Rate:
50 cents per correctly solved problem.

Task 2 - Tournament:
The highest performing participant receives $2 per correct problem.
Other participants receive no payment.
Participants receive no feedback.

Task 3 - Choice
Choose Piece Rate: 50 cents for each correctly solved problem
Choose Tournament: Performance is compared to task-2 tournament performance of the other participants. If the participant has the highest performance she or he receives $2 for each correct answer, otherwise no payment.
Does (past) performance predict entry?

Proportion of participants that enter the tournament for each performance quartile

Performance does not predict entry for Women, weakly for Men

Significant gender difference in entry
Parallels between GNR 2003 and NV 2007

Decision: provide sustained effort, perform highly in tournaments

Decision: Enter competitions compared to a piece rate

Women do not perform well in tournaments against men

Women do not enter tournaments against men

Women do perform well against other women

Can affirmative action measures entice women to enter tournaments?

Can we change the institution to induce more high performing women to enter tournaments? At what cost?

Groups of 3 Women and 3 Men
Standard Tournament: 2 Best people win.
Affirmative Action Tournament: For every male winner, there has to be at least one female winner.

The 2 winners of a group of 3 men and 3 women:
1. Best woman wins
2. Best performer among remaining participants wins.
Effects of AA on participant pool

Composition of Entrants:
- Choice Women 13 Men 31
- AA Choice Women 35 Men 19

We will compare
- Performance of Entrants
- Expected costs of affirmative action (hiring at least one woman for every man)
- Actual costs of affirmative action as the participant pool changes through self-selection.
Performance of entrants

For each performance level the number of entrants with at least that performance
Performance of entrants

For each performance the proportion of participants with at least that performance

No large overall differences in number of entrants that should have entered the original tournament
Much larger proportion of women among high performing entrants in the AA tournament. Already hints that affirmative action may not be that costly.
Number of men with superior performance who do not qualify under AA when AA is not announced (CH w AA) and when it is announced (AA w AA)
Parallels between GNR 2003 and NV ‘07, NSV ‘07

Decision: provide sustained effort, perform highly in tournaments

Women do not perform well in tournaments against men

Women do perform well against other women

Decision: Enter competitions compared to a piece rate

Women do not enter tournaments against men

Affirmative action (quota) can entice women to enter tournaments
Gender Differences in Seeking Challenges: The Role of Institutions
with Alex Yestrumskas, WP 2008

How do women and men decide which task to choose?
Do we find gender differences similar to those in tournaments?
Which institutional changes affect choices?

We have an easy and hard task, such that women and men who are among the top 40% in the easy task make more money performing in the hard task, while others from performing in the easy task.

This task and incentive scheme calibration provides money-maximizing choices for any participant that can be predicted by their performance in a first easy task.
Choosing the hard task

Participants first perform in the easy task, know their absolute performance. They are informed of the calibration: the top 40% performers on average have higher earnings from hard task, other from the easy task. They choose for 2 tasks, one of which is paid. We do not find significant ex ante differences in beliefs about relative ability.
Proportion of “Hard” Choices

Hard task: More profitable for 11+ performers, else easy task is more profitable.
Ability cannot account for the gender difference in choice.
Why do Women Shy Away from Hard Tasks?

Women choose the hard task when:

• **Provide feedback** (tell them what the payoff maximizing choice is): that is it is not a pure task preferences

• **Reduced Commitment** (where they decide about the task difficulty for the 3rd and last task only after they performed in the 2nd), not pure feedback aversion.

Gender differences: Can be risk aversion, beliefs of women that good performance in easy task may not translate in good performance in hard task.
Conclusion

We (and others) find gender differences in preferences for Competition and challenges (see a developing literature on gender differences in field data)

Affirmative Action can have positive effects on the decision of women to enter competitive environments.

Positive effects of Affirmative Action in an environment in which there is no discrimination.

Studying and understanding gender differences can lead to institutional design changes that can reduce those differences.