Gender Imbalance Online

CIL Lab Meeting

March 22, 2017

Introduction

Women Contribute Online Less Than Men

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- Wikipedia entries about women are less likely to be complete
- Only 5% women contributors on StackOverflow
- Less than 5% women taking part in programming competitions (despite 30% in CS schools)

Implications for individuals, firms & society

Profit loss for online companies (e.g., Airbnb)

- ▶ Narrow participation
- ▶ Less diversity & creativity for innovation

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Cultural discrimination

- ▶ Platform content may reflect biased views

A theory of gender imbalance

Many factors to consider (see Lam et. al 2011)

We conjecture:

- **Gamification** & Incentives (e.g., competition, points, rankings)
- Gender differences in **preferences** (e.g., risk aversion, competitive inclination)

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Mechanisms under investigation

1. Perceived gender composition in a competitive environment.
2. Collaboration incentives under gender imbalance [next study]

The role of the perceived gender imbalance
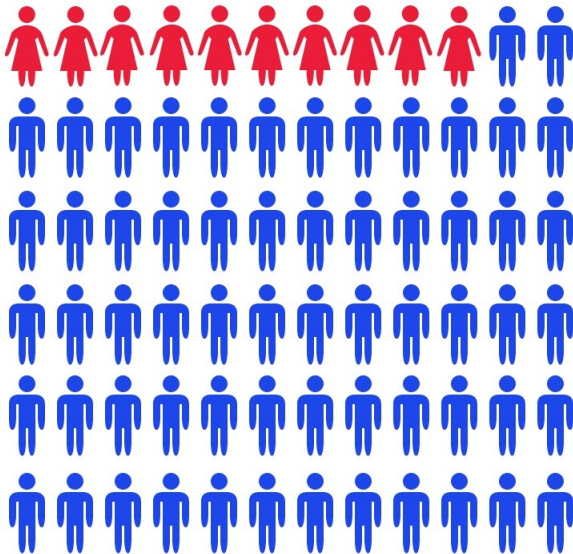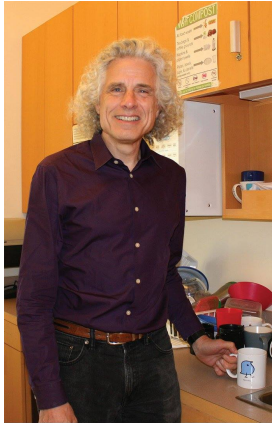
Bayesian updating

Figure 1: What are the odds of winning for gender XY?

Role model

Figure 2: do I want to be successful in this?

Role Models and Arguments for Affirmative Action

By Kim-Sau Chung*

The value of women faculty role models at the college or university level cannot be stressed too much. A substantial amount of talent that would otherwise flow into this profession is lost because, without the presence of women faculty, undergraduate women erroneously assume that economics is a profession for men only. An exclusively male department also lacks the abilities to correct these impressions, not least because men economists themselves overlook the difficulties subsumed under the cliche "economics is a man's field." *A woman economist can provide encouragement and proof that it is possible not only to survive but to accomplish,* even as a member of a tiny minority group. (American Economic Association Committee on the Status of Women in the Economics Profession, 1973 p. 1054; emphasis added)

those of their race or sex *can* become accepted, successful professionals. [...] [B]lack and women students do need role models, they do need concrete evidence that those of their race or sex can become accepted, successful, professionals— plainly, you won't try to become what you don't believe you can become. (Thomson, 1977 pp. 22–23; emphasis is original)

Yet what are role models? Anita L. Allen, an advocate of affirmative action, points out that academics have failed to clearly define the term during discussions. Allen (1995) finds that there are at least three different definitions of role models floating around, and argues that the ambiguity of the concept has undercut many role-model arguments for affirmative action.

The three definitions Allen identifies are:

Figure 3: American Economic Review, 2000

Context and Data

The sex ratio is:

- **2 men registrants** for a woman (33 percent women)
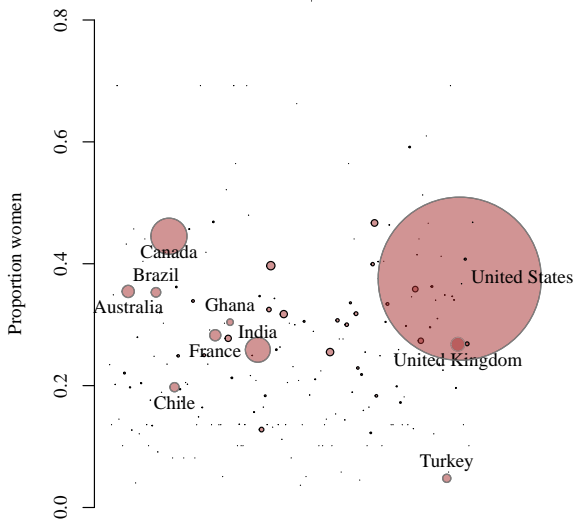- **2.8 men contributors** for a women (26 percent women)

Figure 4: Proportion of women by country

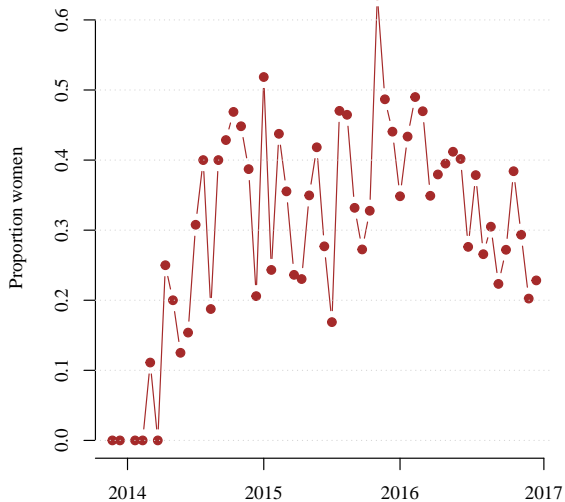Figure 5: Proportion of women over time

How to influence the perceived gender composition?

Solicitation via email featuring 2-3 member profiles.

- experience + bio + profile picture
- ADD regression controls for past experience on platform

Example

Dear XXXX,

[Some call to action] Join the other members of our platform and work on the newest challenges on our site

Here are some of our HeroX heros who have already done it

Steven LaJolla   Josh Nickerson   Melissa Tiel

[follows brief description of contributions for Steven, Josh and Melissa.]

Figure 6: Solicitation email

Treatment

- Vary gender composition
- Vary "success" composition

	Var1	Var2
1	3 women	1 man role model
2	1 man 2 women	1 man role model
3	2 men 1 woman	1 man role model
4	3 men	1 man role model
5	3 women	1 woman role model
6	1 man 2 women	1 woman role model
7	2 men 1 woman	1 woman role model
8	3 men	1 woman role model

Table 1: Treatment combinations

Validation of profiles

Goal: comparable profiles

Use demographics + AMT ratings of 20-30 profiles

- ▶ Physical attractiveness (based on user profile picture)
- ▶ Role model (bio description + picture)
- ▶ Skills

Timing of the experiment

1. Preliminary survey (calibrate perceived gender composition)
2. Solicitation (email sent 1-2 times)
3. Ex-post survey (detect possible changes on perceived gender composition)

▶ Outcome variables: participation, effort, team formation, etc.

Next steps

- Experiment on teaming on the platform
- Wikipedia collaboration

Example teaming

Hello XXXX,

[Standard solicitation] You're invited to take part in a brand new challenge "Name of the Challenge."

[Treatment] **You will be awarded additional $25 in cash if you form a team and make a submission of quality above the median.**

Click here if you want to be added to a list of potential teammates for this challenge.

Good Luck!

HeroX Team

Figure 7: Teaming experiment

Treatments

1. Male-female rich environment (how many teams?)
2. Splitting the pie rules (how many teams?)
3. Confidence

TODOS

- Ask HeroX about winners
- Ask Facebook ads
- Tokenism

Interesting paper:

https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2804265