Transmitting Gender Rights
Experimental Evidence from Pakistan

Sultan Mehmood\textsuperscript{1}, Shaheen Naseer\textsuperscript{2}, Daniel Chen\textsuperscript{3}

Social Norms & Gender Equality

9th South Asia Economic Policy and Network Conference, 2022

\textsuperscript{1}Russian School of Economics
\textsuperscript{2}Lahore School of Economics
\textsuperscript{3}Toulouse School of Economics
Motivation

- The last century witnessed an extraordinary extension of civil rights and freedoms
  - Particularly impressive progress was achieved on women’s rights
The Research Questions

1. How are rights revolutions transmitted in societies?

2. How can progressive attitudes be fostered?

3. Can these attitudes transmit and spillover to others?

4. Can progressive gender norms influence student achievement? If yes, how?
The Context

- Primary School Teachers in Government Schools of Pakistan
  - Civil servants: public school teachers
  - These teachers teach 5 to 12 year-olds

- We conduct a randomized control trial in collaboration with the Progressive Education Network (PEN)
  - PEN is one of the largest network of public schools in South Asia with about 300 schools operating across Pakistan
This Paper - I

- **Study Design:**
  - We randomly assign teachers to a Visual Narrative-a live screening of the movie “Bol” emphasizing gender rights + a self-reflection workshop on themes of the movie.
  - We reinforce the Visual Narrative with a semester-long gender studies curriculum that the teachers taught to students “Self-Persuasion Treatment”

- Treated teachers become more supportive of equitable gender rights
  - Gender attitudes transmit to students

- Effects are heightened, when the Visual Narrative is combined with the curriculum

- Bottomline: Greater recognition of gender rights can be fostered
Gender gap in mathematics student achievement reduces by 20%

- We cross-randomize teachers to form mixed-gender versus same-gender study groups
- We observe large gains in student achievement for the randomly assigned mixed-gender study groups
- No impact of our treatments for the same-gender study group
- Effective Cooperation boys and girls appear to drive these results, battle of the sexes do not.
Related Literature and Contributions

- **Transmission of Social Norms**
  - Theory on formation of attitudes says social norms are transmitted through vertical, horizontal or slanting transmission (Bursztyn and Jensen, 2015; Fujiwara et al., 2019; Bisin and Verdier, 2021; Giuliano, 2022; Dhar et al., 2022)
    - We contribute to this literature by providing experimental evidence for slanting transmission of attitudes

- **Transmission of Non-Cognitive Skills**
  - Non-cognitive skills are considered important early contributors to economic and health outcomes (Heckman et al., 2006; Elango et al., 2015; Cappelen et al., 2020).
    - We contribute to this literature by providing evidence that norms transmitted early in the childhood can impact student achievement.
Roadmap

1. Background
2. Data
3. Empirical Specification
4. Results
5. Experimental Demand
6. Conclusion
7. Appendix: Additional Robustness Checks
Context and Sample

- We collaborate with the Progressive Education Network (PEN) and embed a field experiment within their regular teacher training.
- PEN works to improve the quality of education via a public-private partnership, similar to charter schools in the US.
- These schools are managed using public funds by the private actors in a public-private partnership.
- Sample is all PEN schools in Punjab: 607 teachers, 15000 students.
Visual Narrative Treatment

- **Bol Movie as the Visual Narrative Treatment**
  - We arranged a live screening of the movie about gender rights
  - The screening of the movie followed an hour-long discussion about recognition of gender rights

- The movie features a strong female lead on death row telling the story of why she found it necessary to murder her father

- The movie is critically acclaimed and one of the highest-grossing Pakistani films of all time
The Visual Narrative

The Movie Bol
Visual Narrative + Self-Persuasion Treatment

- Visual narrative augmented with self-persuasion
  - Self-Persuasion: Gender studies curriculum
Gender studies curriculum

- Teachers and students self-reflect together:
  - Draw all the work that your father does.
  - Draw all the work that your mother does.
  - Which of these are the same? Which are different?
  - **Why is that?**
  - Would you want the job of your mother or your father when you grow up?
  - **Why is that?**
Gender Studies Curriculum
A Typical Lesson Log Entry

<table>
<thead>
<tr>
<th>Subject/Date</th>
<th>Topic/Page#</th>
<th>No. of Periods</th>
</tr>
</thead>
<tbody>
<tr>
<td>SLOs / ELOs</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Students will be able to tell whose job would they prefer opting for in future.

Q: Would you want the job of your mother or your father, when you grow up?
Part 1: Ask the class on what their mothers’ & fathers’ do.
Part 2: Ask the class, what they would choose to become, from what their parents do?
Part 3: Show them the following pictures.
Part 4: Initiate an open discussion on what the children choose from the above picture as their job & why?
The Data

- The PEN Administrative Data
- Surveys
- Mathematics Test Scores from PEN School Data
OLS Estimation

\[ Y_i = \theta + \alpha_1 \text{Visual Narrative}_i + \alpha_2 \text{Visual Narrative & Self Persuasion}_i + W'_i \psi + \epsilon_i \]  

(1)

- Subscript \( i \) is an individual teacher or student
- \( Y \) represents the respective outcome
- \( W \) is a vector of controls
- Standard errors are clustered at the teacher level
- \( \alpha \)'s give the causal impact of visual narrative and joint treatments
Summary of Experimental Design

- Teachers are randomly assigned to a Visual Narrative
  - They watch the movie “Bol” (3 hours)
  - The movie, Bol (literally, to speak up), is a Pakistani Urdu-language social drama with a strong female lead on death row
  - She tells her story of why she found it necessary to murder her father as her “right to exist as a woman” was subverted
  - Engage in a structured discussion of gender-related themes of the movie (1 hour)

- Teachers are randomly assigned to Visual Narrative and Self-Persuasion
  - The visual narrative treatment is augmented with gender studies curriculum which teachers teach for 4 months.
  - Teachers and students self-reflect and envision equal rights
  - Recent research suggests teaching concepts can be a instrument of self-persuasion
**Balance**

**Panel A: Teacher Characteristics**

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<th>(5)</th>
<th>(6)</th>
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<td>0.0173</td>
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<td>0.130</td>
<td>-1.409</td>
<td>0.481</td>
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<td>-0.0125</td>
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<td>Boi Movie Watched</td>
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<td>[0.0687]</td>
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<td>[2.757]</td>
<td>[0.407]</td>
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<td>[0.0674]</td>
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<td>[2.708]</td>
<td>[0.400]</td>
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<td>[0.0589]</td>
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<tr>
<td>Av. Class Size</td>
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<td>0.0265</td>
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<td>Teaching Experience</td>
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<td>[0.0682]</td>
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<td>[2.737]</td>
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<td>[0.209]</td>
<td>[0.0596]</td>
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</tbody>
</table>

**School Fixed Effects**

- Yes
- Yes
- Yes
- Yes
- Yes
- Yes
- Yes
- Yes

**Observations**

- 607
- 607
- 607
- 607
- 607
- 607
- 607
- 607

**R-squared**

- 0.067
- 0.075
- 0.078
- 0.063
- 0.088
- 0.075
- 0.057
- 0.085

**F Statistics (Joint Significance)**

- 0.814
- 0.697
- 0.431
- 0.681
- 0.905
- 0.547
- 0.736
- 0.697

**Mean of dependent var**

- 0.647
- 0.475
- 0.516
- 30.13
- 26.35
- 4.500
- 12.672
- 0.270
## Effect on Gender Attitudes

<table>
<thead>
<tr>
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<td><strong>Gender Recognition Index</strong></td>
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<td>0.566***</td>
<td>0.512***</td>
<td>0.348**</td>
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<td>[0.0510]</td>
<td>[0.143]</td>
<td>[0.146]</td>
<td>[0.162]</td>
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<td><strong>Visual Narrative &amp; Self-Persuasion</strong></td>
<td>0.140***</td>
<td>0.362***</td>
<td>0.349**</td>
<td>0.247*</td>
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<tr>
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<td>[0.130]</td>
<td>[0.140]</td>
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<td><strong>M</strong></td>
<td>0.0897*</td>
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<td>[0.109]</td>
<td>[0.0603]</td>
<td>[0.123]</td>
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- **Individual Controls**: Yes
- **School Fixed Effects**: Yes
- **Observations**: 607, 607, 607, 527
- **R-squared**: 0.138, 0.140, 0.200, 0.131
Effect on Gender Attitudes - II

![Graph showing point estimates with 95% CIs for Bol Movie and Curriculum on Women's Rights Overall, Women's Economic Rights, Women's Political Rights, Women's Social Rights, and Women's Legal Rights.]

- Women's Rights Overall: 0.219
- Women's Economic Rights: 0.277
- Women's Political Rights: 0.265
- Women's Social Rights: 0.046
- Women's Legal Rights: 0.403

Point Estimates with 95% CIs (Bol Movie and Curriculum)
Effect on Gender Attitudes

Distributions
## Transmission of Attitudes to Students

<table>
<thead>
<tr>
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<tr>
<td></td>
<td>Overall</td>
<td>Girls</td>
<td>Boys</td>
<td>Gender Gap</td>
</tr>
<tr>
<td><strong>Visual Narrative &amp; Self-Persuasion</strong></td>
<td>0.243***</td>
<td>0.400***</td>
<td>0.112*</td>
<td>0.425***</td>
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<td>0.266***</td>
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<tr>
<td>Individual Controls</td>
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<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
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<tr>
<td>School Fixed Effects</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
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<tr>
<td>Observations</td>
<td>13,911</td>
<td>6,804</td>
<td>7,107</td>
<td>8,936</td>
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<tr>
<td>R-squared</td>
<td>0.043</td>
<td>0.062</td>
<td>0.041</td>
<td>0.192</td>
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### Effect on Students’ Gender Attitudes and Achievement

<table>
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<tr>
<th></th>
<th>(1) Student Attitudinal Survey</th>
<th>(2)</th>
<th>(3) Maths</th>
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<tbody>
<tr>
<td><strong>U</strong></td>
<td>0.0713</td>
<td>0.0723</td>
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<td>0.00171</td>
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<td>[0.0621]</td>
<td>[0.0250]</td>
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<td><strong>Visual narrative (movie)</strong></td>
<td>0.145***</td>
<td>0.137***</td>
<td>-0.00811</td>
<td>-0.00482</td>
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<td>[0.0521]</td>
<td>[0.0527]</td>
<td>[0.0614]</td>
<td>[0.0244]</td>
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<tr>
<td><strong>Joint Movie-Curriculum</strong></td>
<td>0.254***</td>
<td>0.245***</td>
<td>0.160***</td>
<td>0.119***</td>
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<tr>
<td></td>
<td>[0.0494]</td>
<td>[0.0501]</td>
<td>[0.0590]</td>
<td>[0.0254]</td>
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<tr>
<td><strong>Individual controls</strong></td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td><strong>School Fixed Effects</strong></td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
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<tr>
<td><strong>Observations</strong></td>
<td>13,911</td>
<td>13,911</td>
<td>13,911</td>
<td>13,911</td>
</tr>
<tr>
<td><strong>R-squared</strong></td>
<td>0.038</td>
<td>0.043</td>
<td>0.090</td>
<td>0.596</td>
</tr>
</tbody>
</table>

#### Why would the Math Test Scores Increase?

- Sultan Mehmood, Shaheen Naseer, Daniel Chen (NES)
## Effect on Math Achievement

### By Student Gender

<table>
<thead>
<tr>
<th></th>
<th>(1) Boys</th>
<th>(2) Girls</th>
</tr>
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<tbody>
<tr>
<td><strong>Math Test Scores</strong></td>
<td><strong>Boys</strong></td>
<td><strong>Girls</strong></td>
</tr>
<tr>
<td>$U$</td>
<td>0.0322</td>
<td>0.0323</td>
</tr>
<tr>
<td></td>
<td>[0.0337]</td>
<td>[0.0327]</td>
</tr>
<tr>
<td>$M$</td>
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<tr>
<td></td>
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<tr>
<td><em>Visual narrative (movie)</em></td>
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<td></td>
<td>[0.0317]</td>
<td>[0.0315]</td>
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<tr>
<td><em>Joint Movie-Curriculum</em></td>
<td>0.159***</td>
<td>0.104***</td>
</tr>
<tr>
<td></td>
<td>[0.0309]</td>
<td>[0.0322]</td>
</tr>
</tbody>
</table>

- Observations: 6,973 (Boys), 6,959 (Girls)

- Both boys and girls are impacted but larger effect on boys
  - Girls: typical B+ student becomes a A- Math student
  - Boys: typical B- student becomes A- Math Student
Study Group Re-Randomization
Mixed Gender Study Group
Study Group Re-Randomization

Same Gender Study Group
Effect of Treatment by Study Group
Mixed Gender Study Group

![Bar chart showing the effect of treatment by study group](image)

- Placebo: 67.56
- Bol Movie and Curriculum: 73.24
Effect of Treatment by Study Group

Same Gender Study Group

![Maths Scores (Raw)](chart)

- Placebo: 66.48
- Bol Movie and Curriculum: 65.99
Conclusion

- We find that progressive gender norms can be cultivated:
  - These norms spillover from teachers to students
  - Even visual narrative on teachers can impact norms of their young students
- When visual narrative is augmented with curriculum, not only gender norms but also student achievement is impacted
Thank You for Your Attention

Email: ranashaheen133@gmail.com