A persistent problem

Gerlind Wallon
On the way to the top, 2 December 2013
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Women in Science

EMBO
excellence in life sciences
Who’s right: optimists or pessimists?
Demographic inertia revisited: An immodest proposal to achieve equitable gender representation among faculty in higher education.

R. Marschke, S. Laursen, J. M. Nielsen, P. Dunn-Rankin

“Change in occupational segregation is moving at a glacial speed”

Demographic constraints:

- faculty age structures
- gender composition among PhD earners
- faculty attrition/retention
- number of new faculty positions
Fig. 2. Graph of female percentage of faculty per differential equations model.
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**FIG. 2.** Graph of female percentage of faculty per differential equations model.
**Fig. 2.** Graph of female percentage of faculty per differential equations model.
Career transitions
Gender Differences at Critical Transitions in the Careers of Science, Engineering and Mathematics Faculty

Committee on Gender Differences in the Careers of Science, Engineering, and Mathematics Faculty; Committee on Women in Science, Engineering, and Medicine; National Research Council

TABLE S-2 Transitions from Ph.D. to tenure-track positions by field at the Research I Institutions Surveyed (%)

<table>
<thead>
<tr>
<th>Field</th>
<th>Doctoral Pool</th>
<th>Pools for Tenure-Track Positions</th>
<th>Pools for Tenure-Track Positions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>% women Ph.D.s (1999-2003)</td>
<td>Mean % of applicants who are women</td>
<td>Mean % of applicants invited to interview who are women</td>
</tr>
<tr>
<td>Biology</td>
<td>45</td>
<td>26</td>
<td>28</td>
</tr>
<tr>
<td>Chemistry</td>
<td>32</td>
<td>18</td>
<td>25</td>
</tr>
<tr>
<td>Civil Engineering</td>
<td>18</td>
<td>16</td>
<td>30</td>
</tr>
<tr>
<td>Electrical Engineering</td>
<td>12</td>
<td>11</td>
<td>19</td>
</tr>
<tr>
<td>Mathematics</td>
<td>25</td>
<td>20</td>
<td>28</td>
</tr>
<tr>
<td>Physics</td>
<td>14</td>
<td>12</td>
<td>19</td>
</tr>
</tbody>
</table>

SOURCE: Survey of departments; Ph.D. data is from NSF, WebCASPAR.
EMBO Programmes

- **EMBO LTF**
  - Awarded: 44.6%
  - Applicants: 49.3%

- **EMBO YIP**
  - Awarded: 23.5%
  - Applicants: 27.6%

- **EMBO members**
  - Awarded: 15.0%
  - Applicants: 27.6%
A persistent problem
Traditional gender roles hold back female scientists

Anna Ledin, Lutz Bornmann, Frank Gannon and Gerlind Wallon

Anna Ledin, PhD
EMBO Women in Science
Royal Academy of Sweden

Lutz Bornmann, PhD
Formerly ETH Zurich
Max Planck Gesellschaft

Prof. Frank Gannon
Former Executive Director of EMBO
Director Queensland Institute of Medical Research
Analysis

1. Gender-blinding
2. Bibliometry on application
3. Bibliometry since application
4. Survey
Analysis

1. Gender-blinding

The difference in success rate persisted
Analysis

1. Gender-blinding
   The difference in success rate persisted

2. Bibliometry on application
Results from bibliometric analysis
at application in 1998

- Awarded women publish as well as awarded men
- Women overall publish fewer papers, but of the same quality as men

eight years later in 2006

- the gap has increased
Analysis

1. Gender-blinding
   The difference in success rate persisted
2. Bibliometry on application
   Women overall publish fewer papers, but of the same quality as men
3. Bibliometry since application
   The gap has increased
4. Survey
Summary (EMBO Study)

The gender gap increases as time goes by because:

- Women more frequently
  - have a partner with an equivalent education
  - move due to their partners’ career
- Women work fewer hours then their partners
- Men generate a larger percentage of the family income
- Women accumulate career breaks due to children
- Women experience discrimination and less support
Where are all the women gone...?
Where Why are all the women gone...?
Women in Science

Understanding current causes of women’s underrepresentation in science

Stephen J. Ceci and Wendy M. Williams
Exhibit 4
Career breaks for women are mainly motivated by the need to spend more time with family

<table>
<thead>
<tr>
<th>Factors behind career break decisions</th>
<th>Main factors behind career break decisions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proportion of US graduates*</td>
<td>Need more time for the children</td>
</tr>
<tr>
<td>who interrupt their careers</td>
<td>Sufficient household income</td>
</tr>
<tr>
<td></td>
<td>Lack of job satisfaction</td>
</tr>
<tr>
<td></td>
<td>Need more time for other family members</td>
</tr>
<tr>
<td></td>
<td>Feeling of being “stuck in a rut”</td>
</tr>
<tr>
<td></td>
<td>professionally</td>
</tr>
<tr>
<td>Men</td>
<td>24%</td>
</tr>
<tr>
<td>Women</td>
<td>37%</td>
</tr>
<tr>
<td></td>
<td>45%</td>
</tr>
<tr>
<td></td>
<td>32%</td>
</tr>
<tr>
<td></td>
<td>29%</td>
</tr>
<tr>
<td></td>
<td>24%</td>
</tr>
<tr>
<td></td>
<td>23%</td>
</tr>
</tbody>
</table>

* Survey of 2,443 women and 653 men in the US, ages 26 to 55, who obtained a college degree with honours or a graduate degree
Source: Harvard Business Review 2005
Exhibit 3
European women devote on average twice as much time as men to domestic tasks

Domestic tasks (including childcare and preparing meals)

<table>
<thead>
<tr>
<th>Country</th>
<th>Women</th>
<th>Men</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sweden</td>
<td>3:42</td>
<td>2:29</td>
<td>+73</td>
</tr>
<tr>
<td>Norway</td>
<td>3:47</td>
<td>2:22</td>
<td>+155</td>
</tr>
<tr>
<td>Germany</td>
<td>4:11</td>
<td>2:21</td>
<td>+110</td>
</tr>
<tr>
<td>Belgium</td>
<td>4:32</td>
<td>2:36</td>
<td>+114</td>
</tr>
<tr>
<td>UK</td>
<td>4:15</td>
<td>2:18</td>
<td>+117</td>
</tr>
<tr>
<td>France</td>
<td>4:45</td>
<td>2:22</td>
<td>+128</td>
</tr>
<tr>
<td>Poland</td>
<td>4:55</td>
<td>2:22</td>
<td>+143</td>
</tr>
<tr>
<td>Spain</td>
<td>5:20</td>
<td>1:37</td>
<td>+198</td>
</tr>
<tr>
<td>Italy</td>
<td></td>
<td>1:35</td>
<td>+225</td>
</tr>
<tr>
<td>EU 15* average</td>
<td>4:29</td>
<td>2:18</td>
<td>+131</td>
</tr>
</tbody>
</table>

* Sweden, Norway, Finland, Germany, Belgium, UK, Latvia, France, Estonia, Hungary, Slovenia, Lithuania, Poland, Spain, Italy
Source: Eurostat

Women Matter
Discrimination and unconscious bias
Science faculty’s subtle gender biases favor male students

Corinne A. Moss-Racusin, John F. Dovidio, Victoria L. Brescollc, Mark J. Graham, and Jo Handelsman.

PNAS, 109, 16474-16479 (2012)
Women in Science

Discrimination and stereotype threat

Delusions of Gender
The Real Science Behind Sex Differences

EMBO
efficiency in life sciences
Summary

- Laissez-faire will not work

- Main factors hindering progression of women:
  - Babies
  - Biases
Questions:
1. At what level of career does gender bias become evident?
   a) Self-selection for subject area
   b) After first degree?

   How can the environment help?
   a) Address biases…
   b) Make it clear that the organization takes gender and family into account…
EMBO policy:

**Post docs:**
- Dependent’s allowance (for children under the age of 18)
- Three months parental leave
- Option to work part-time
- Crèche support for Fellows with children under the age of six.

**Young Investigators:**
- Extension of the eligibility period by one year per child for female candidates.
- Extension of programme membership by one year for each child born during current tenure.

**Courses and Workshops:**
- Organizers of EMBO Courses and Workshops are instructed to ensure that at least 25 – 30% of speakers are female.
EMBO policy:

EMBO Lab Management Courses:

• “Female leaders in science”

• Incorporate in general lab management course programme
Questions:
3. Does having more women in relevant positions help other women?
   a) As realistic role models: likely
   b) In the selection/decision making process: likely but not sufficient…
EMBO policy:

**General:**
30% of our committee members are female
Questions:

4. Effects of blind refereeing/unconscious bias in appointments and letters of reference?
   a) In our experiment we did not find evidence for this.
   b) Another study did:
      Exploring the Color of Glass: Letters of Recommendation for Female and Male Medical Faculty
      *Trix and Penska*
      *Discourse & Society* March 2003
Women in Science

Questions:
4. Effects of blind refereeing/unconscious bias in appointments and letters of reference?

“OBSERVATIONS ON GENDER EQUALITY IN A SELECTION OF THE SWEDISH RESEARCH COUNCIL’S EVALUATION PANELS”