Double blinding peer review
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Blinding in science
- Reduce bias

Purpose of blinding in peer review
- Prevention of bias by reviewers
- Improve the quality of the review
- Improve the quality of the articles (increased citations)
Types of blinding

- None - open review - author knows who reviewer is and reviewers know who the authors are
- Single blind
  - Reviewers know authors but the authors do not know the reviewer
  - Vice versa
- Double blind
  - Reviewers don’t know authors and authors don’t know reviewers

Double blinding

- Need to remove the author’s identity
  - Remove names from the paper
  - Remove acknowledgements
  - Remove references to institution
  - Remove references to country (manufacturers and suppliers)
  - Remove/alter self referencing

How successful is blinding?

<table>
<thead>
<tr>
<th>Journal</th>
<th>No. of journals included</th>
<th>Total no. of articles</th>
<th>H-index of journal</th>
<th>Success rate of blinding</th>
</tr>
</thead>
<tbody>
<tr>
<td>BMJ</td>
<td>10</td>
<td>50</td>
<td>6</td>
<td>80%</td>
</tr>
<tr>
<td>JAMA</td>
<td>20</td>
<td>100</td>
<td>10</td>
<td>40%</td>
</tr>
<tr>
<td>Lancet</td>
<td>25</td>
<td>150</td>
<td>15</td>
<td>60%</td>
</tr>
<tr>
<td>Nature</td>
<td>20</td>
<td>100</td>
<td>15</td>
<td>60%</td>
</tr>
<tr>
<td>Science</td>
<td>15</td>
<td>75</td>
<td>10</td>
<td>40%</td>
</tr>
<tr>
<td>Lancet Infect. Dis</td>
<td>10</td>
<td>50</td>
<td>8</td>
<td>80%</td>
</tr>
<tr>
<td>J Infect Dis</td>
<td>15</td>
<td>75</td>
<td>12</td>
<td>60%</td>
</tr>
</tbody>
</table>

Total 100 journals, 500 articles, H-index total 100, 40% success rate.
How successful is blinding?

- Depends on
  - Reviewer’s knowledge of the field and whether they attend scientific meetings (abstract presentations)
  - Curiosity
  - Electronic traces
  - Characteristics of the work
  - Language

Effect of blinding on reviews

- Three studies show no effect
- One study showed that it improved the review

(Chen et al. 1998; Justice et al. 1998; McNeil et al. 1990)
Author and reviewer preferences
• In a survey of authors and reviewers of the Journal of Medical Education
• 68% preferred blinding of reviewers to author's identity
• 72% preferred blinding of authors to reviewer's identity

Double blinding issues
• Fairness to unknown authors or institutions
• Published articles (12) from prestigious departments resubmitted 18-32 months later from fictitious authors and institutions
• 3 detected as resubmissions
• 8 rejected (serious methodological errors)

   Peters & Ceci, 1982

Double blinding issues
• Fairness to Prolific authors
• Concern that these authors get better reviews than the work deserves
• Evidence conflicting

   Snodgrass 2006
Double blinding issues

- Gender equity
- Some evidence for lower acceptance rates in various disciplines for articles by women

Snodgrass 2006

Double blinding issues

- Honesty
  - The reviewer can provide a review that is their true opinion of the work without worrying about the effect that opinion might have on them or the authors

Double blinding issues

- Size of Journal and reviewer base
  - Studies so far done in larger journals - do they apply to smaller journals?
  - Reduce the likelihood for 'retaliatory' behavior