

## Alternate peer review system

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## Traditional peer review

- Virtually all submissions sent for external review
- Editor selects reviewers
- Reviewers advise editor

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## Minor variations

- In-house triage – used by most large journals
- Asking authors to suggest reviewers
- Decentralised system (many editors) (eg PLOS)
- Publishing reviewer comments / article history
  - increased transparency (eg BMC, EMBO)

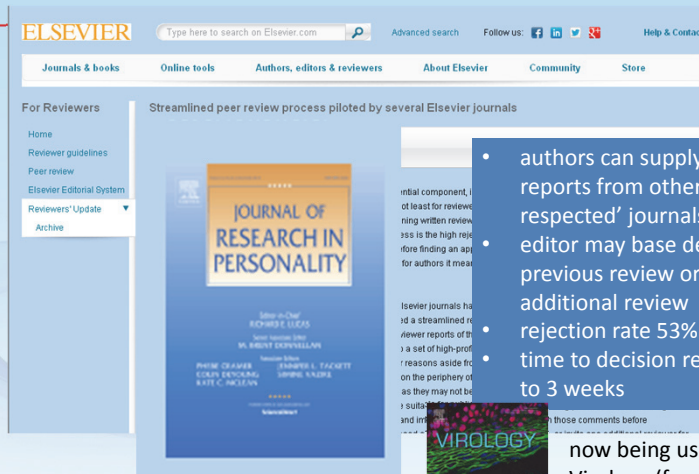


## Increasing efficiency

- Sharing reviewer comments
- Journal consortia / cascades
- Allowing generic format submissions (format after acceptance)



## 'Streamlined peer review'



- authors can supply reviewer reports from other 'well-respected' journals
- editor may base decision on previous review or invite one additional review
- rejection rate 53% cf 77%
- time to decision reduced from 8 to 3 weeks

now being used by Virology (for articles reviewed by journals with IF >8)



## Journal consortia

- If rejected by 1<sup>st</sup> target journal, author can select 2<sup>nd</sup> journal from within NPRC and reviews are passed on
- Currently has 41 member journals



## Publisher cascades

### BMJ Group

- Authors can select up to 2 alternative BMJ Journals (on submission)
- If rejected by 1<sup>st</sup> choice, MS is automatically transferred to 2<sup>nd</sup>, then 3<sup>rd</sup> choice journals



## Formatting after acceptance

- ‘Forget those pesky style guidelines – for now’
- Elsevier ‘Your Paper, Your Way’
- Launched 2011 for some journals
- Extended to all Elsevier journals, July 2013



## Radical variations

- Independent peer review (ie outside journal)
  - Peerage of science
  - Rubriq
- Pre-publication review
  - Public review
- Post-publication review



- Commercial service (free to authors)
- Used by some biology journals
- Author sets deadline for review
- Can choose open or blinded review (reviewers choose whether to sign or not)
- Qualified peers choose which papers to review
- All 'peers' can view MS
- Reviewers provide a 1000 word 'Peerage Essay' (standard format)
- Reviews are then peer reviewed
- Authors revise submission
- Journals may then offer to publish



## Rubriq

- Commercial peer review
- \$600/MS
- Biology & Medicine
- Review in 2 weeks by 3 reviewers
- (includes plagiarism check)
- Reviewers are paid
- Author then submits MS with review to journal
- Plan to establish network of journals (in future)



## Public review

- Experiment tried by
  - *Medical Journal of Australia*
  - *Nature*
- Not successful
- Few comments
- Low quality comments
- Authors did not want to take part



## Post-publication review: F1000 Research

- Article published immediately (<7 days)
- Status 'awaiting peer review'
- Must be supported by full dataset
- Invited reviews (signed, not blinded)
- Reviewers not paid but get discount on APC
- Reviewer comments published
- All articles that 'pass' peer review indexed in PMC and other indexes
- Other papers 'Not Approved' by 2/3 reviewers no longer shows up on searches / not indexed but is published (cannot be submitted to another journal) – authors encouraged to revise paper



## Post-publication commentary: F1000 Prime

- Previously 'Faculty of 1000'
- Actually 5000 experts in biology & medicine
- Experts select and rate published articles
- Individuals subscribe to personalised literature service
- Cost \$9.95/month (individuals)
- Institutional licenses available

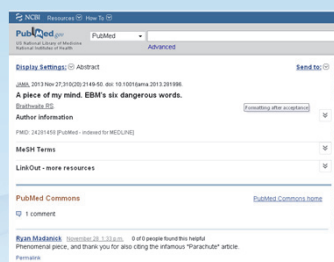


## Post-publication comments: PubMed Commons

- Launched October 2013
- Comments must be signed and in English
- Up to 8000 characters long but can include links
- Initial pilot restricted to PubMed authors
- As of 20 Dec 2013, there were 435 comments



## Variable usefulness of comments



"Phenomenal piece, and thank you for also citing the infamous 'Parachute' article."

"The study had a small sample size (about 15/condition), and the analysis did not correct for multiple tests, meaning that it is not clear whether training led to any reliable improvements on the outcome measures.

The paper also did not control for expectations in the training and control group, meaning that any differential improvements upon re-testing could be due to differential placebo effects.

I have posted an extensive post-publication review of the paper here:

<http://blog.dansimons.com/2013/09/19-questions-about-video-games.html>"



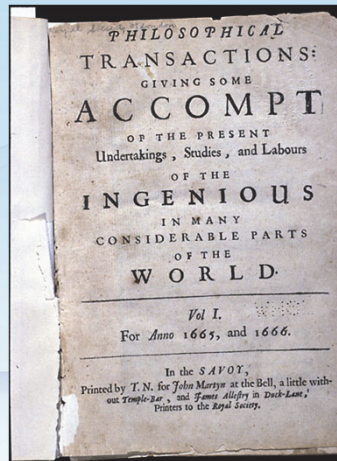
## Post-publication review

- *BMJ* Rapid Responses
- *PLOS* Comments
- Cochrane review comments
- Evidence that authors often don't answer
- *BMJ* 2010;**341**:c3926
- Authors responded to 45% (47/105) substantive criticisms in *BMJ* Rapid Responses

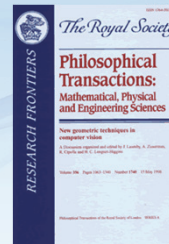
## Conclusions

- Peer review hasn't changed much in >300 years

## 1665: Philosophical Transactions



still published today



## 1752: Royal Society (London)

- Established a 'Committee on Papers' to review submissions to *Philosophical Transactions*
- Members could call on 'other members of the society who are knowing and well skilled in that particular branch of science'



## 1731: Royal Society of Edinburgh

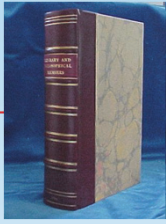
- Papers will be 'distributed according to the subject matter to those members who are most versed in these matters ... Nothing is printed in this review which is not stamped with the mark of utility'



## 1782: Académie Royale de Médecine, Paris

- Submissions reviewed by officers and four elected members
- Made recommendations to general assembly
- 'Nothing will be printed in the *Histoire* ...which assemblies especially called for this purpose have not decided by a majority vote to publish'





## 1785: Literary & Philosophical Society of Manchester

- Review can guarantee only *'the novelty, ingenuity, or importance'* of submissions
- *'Responsibility concerning the truth of facts, the soundness of reasoning ... [and] the accuracy of calculations is wholly disclaimed: and must rest alone, on the knowledge, judgement, or ability of the authors who have respectfully furnished such communications'*

## Peer review

- Is NOT perfect
- (slow, expensive, biased, doesn't detect misconduct, doesn't spot all errors)

## Peer review has never been easy

- Every article is '*referred to an expert having special knowledge and being a recognized authority in the matter*'
- This is a '*laborious, difficult method, involving heavy daily correspondence and constant vigilance to guard against personal eccentricity or prejudice*'

Ernest Hart  
Editor, *British Medical Journal*  
1893



## Conclusions

- Web-based communication allows social review, more commentary, social-media comments, post-publication review
- Some improvements in efficiency, eg journal cascades / consortia
- ?Commercial review
- BUT most journals still use 'traditional review'





**"Democracy is the worst form of  
government, except for all those other  
forms that have been tried from time to  
time"**

Winston Churchill

