PostGutenberg Peer Review

the invariant essentials

and

the newfound efficiencies

Invariant Essentials

- Experts (peers) vetting fellow-expert findings and writing
- Appointed (referees selected by editor for their expertise)
- A priori (quality-control before publication, not after)
- Answerable (3 ways: author-text answerable to referees, referees answerable to editor, editor answerable to journal readership)
- Autonomous -- 3rd party, not self-vetting, in-house vanity-press, or post-hoc gallup poll

New online efficiencies

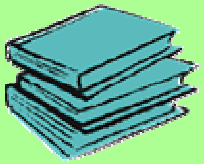
- Ms. Processing (entirely web-based submission, refereeing, disposition)
- Referee selection (online bibliographic searches and databases)
- Tracking/reminders all online
- Report processing/disposition all online
- Transition to publication (online version becomes final published draft); postpublication peer commentary follows

Limited Access: Limited Research Impact

Impact cycle begins:
Research is done

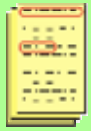
Researchers write pre-refereeing "Pre-Print"

Submitted to Journal

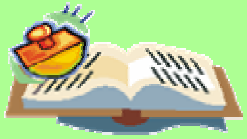


Pre-Print reviewed by Peer Experts – "Peer-Review"

Pre-Print revised by article's Authors

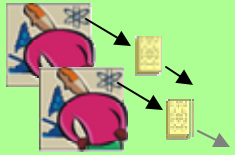


Refereed "Post-Print" Accepted, Certified, Published by Journal



Researchers can access the Post-Print if their university has a subscription to the Journal

New impact cycles:
New research builds on existing research



12-18 Months

What Is Peer Review

- Quality-control and certification: Qualified experts evaluate the work of fellow-experts
- Dynamic feedback, not red/green light ("publish or get lost"): revision and re-refereeing
- Part of science's collective, cumulative self-corrective process
- Rejection rates (normalized) are rigor indicators
- Journals form hierarchy of quality levels and refereeing rigor ("wheat/chaff" ratio)
- Discipline differences and interdisciplinarity

The “invisible hand” of peer review

http://www.princeton.edu/~harnad/nature2.html

- Unrefereed preprints vs. refereed postprints
- The true “populists”: *“why aren’t preprints enough?”*

(i.e., “Why can’t it all be vanity-press self-publication?”)

- Usenet: the global graffiti board for trivial pursuit
- Cautionary example: life/death matters
- Science and scholarship: do they matter less?

Peer review's imperfections

- Editors: the weakest link
- Editorial bias
- Referee sampling bias
- Referee incompetence
- Referee disagreement (just noise or signal-value?)

http://cogprints.ecs.soton.ac.uk/archive/00002128/

- Why do referees referee?

  (1) Golden rule

  (2) Interest (+self-interest)

  (3) Superstition
- Referees: a scarce, over-harvested resource

Refereeing is a give-away *service* just as research reports are a give-away *product*

“Improving” peer review

Some untested empirical conjectures

(usually voiced as immediate recommendations!)

- Apriori number of referees/refereeings
- Author anonymity
- Referee anonymity (open review)
- Referee payment
- Interactive review
- Public review
- Open (peer?) commentary
- Referee self-selection
- Mutiple “levels of acceptance/certification
- Multiple certification
- Individual journals vs. multiple generic “entities” (“disaggregated journals”)
- Abandoning peer review altogether
- *Your own conjecture here…*

Online optimizations: *technical and already tested*

- Web-based submission
- Email/web-based sampling/solicitation
- Web-based refereeing
- Web-based dispositions
- Web-based editing, copy-editing, mark-up (how much can be offloaded onto author?
- Reference-checking
- Citation-linking
- Webmetric referee search and selection
- Referee evaluation, monitoring
- Tracking & reminders
- Reducing delays
- Reducing costs (downsizing to peer-review service-provision?)