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?)

• Why do referees referee?
  (1) Golden rule
  (2) Interest (+self-interest)
  (3) Superstition
• Referees: a scarce, over-harvested resource
  Refereeering is a give-away service just as research reports are a give-away product

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

- Multiple “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?)