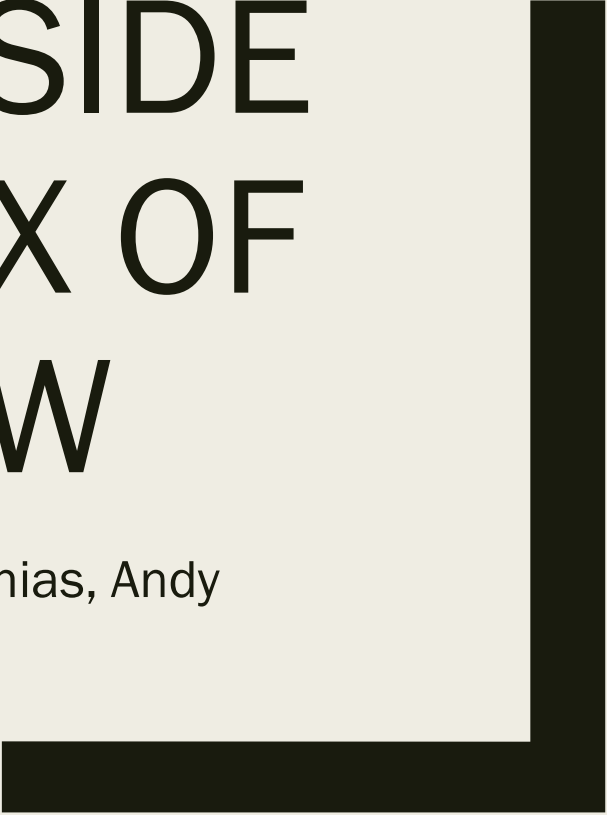


# THINKING OUTSIDE THE BLACK BOX OF PEER REVIEW

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**REVISED** A multi-disciplinary perspective on emergent and future innovations in peer review [version 3; referees: 2 approved]

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An interesting experience in collaborative authoring and review in itself..

<https://f1000research.com/articles/6-1151/v3>

# What did we do?

- It all began at the [Mozilla Global Sprint](#) in 2016...
- Open to anyone to contribute.
- Created a 42 page behemoth.
- Explored social media traits and their potential parallels with peer review.
- Accidentally ended up modelling a sort of 'hybrid peer review and publishing' platform.



Actual footage from the sprint

# WHAT IF WE REBUILT THE ENTIRE SCHOLARLY COMMUNICATION SYSTEM FROM SCRATCH IN 2018?

Because this is essentially the ultimate goal, right?

*Senātus Populusque Rōmānus*

# Things that academics don't really get

- The history of peer review – “*Hasn't it always been this way?*”
  - *Anything by Aileen Fyfe or Melinda Baldwin is eye-opening.*
- The distinction between the ideology and the process.
- The present diversity of [open] peer review ([Ross-Hellauer, 2017](#)).
- That there is a incredible dearth of evidence around peer review.
- And much of that is quite fragmented ([Grimaldo et al., 2018](#)).
- We don't actually really need their permission to change things.
  - *You can come willingly, or kicking and screaming, into the future.*
- That there is an incredible potential scope for systemic peer review reform.

We have the tools to blow peer review wide open

# StackExchange



# Three core aspects for success of any peer review platform

1. Quality control/moderation
2. Certification/reputation
3. Engagement incentives

Harmony



So, how..?

@protohedgehog

# QUALITY CONTROL AND MODERATION

Community, Collaboration, Consensus



## Traditional

- Gatekeeping function as a content filter (varying selectivity criteria)
- QC incredibly difficult to measure, little evidence of actual success
- Typically closed system with a secretive and selective process
- Organised around journals and articles (“papers” – it’ 2018..)
- Editor-controlled “black box of peer review”
- Structurally limited (2-3 people)



## Proposal

- Collaborative, constructive PR as ‘issues’ or comments
- QC achieved via consensus and evaluated based on engagement
- Self-organised, open and unrestricted communities
- Unrestricted content types and formats
- Elected ‘moderators’ accountable to communities (QC & engagement)
- Semi-automated matching of content to reviewers

# CERTIFICATION AND REPUTATION

Because we love giving away our labour for free



## Traditional

- Poorly recognised and rewarded activity
- Difficult to effectively measure due to opacity of process
- Often inappropriate journal-level proxies
- Issues surrounding identification within closed process
- High reviewer turn-down rates for various reasons
- A bit shit, really...
- But getting better!



## Proposal

- Performance metrics based on nature and quality of engagement
- Open, continuous community-based evaluation tied to reputation
- Revealed at object and individual levels
- Fully transparent by default (e.g., via ORCID)\* and portable
- Reviewer pool greatly expanded with low barrier to entry
- Potential for engagement filters
- Appealing for those in charge of assessment



# INCENTIVES FOR ENGAGEMENT

Because sheep like carrots

## Incentives for engagement

### Traditional

- Shared sense of duty as a natural, altruistic incentive
- Researchers generally feel they receive too little credit
- Incentives only for engagement, not for *high quality* engagement
- Incentives not tied to academic reputation
- 'Prestige' obtained by journals



### Proposal

- Virtual rewards such as points, 'karma', badges or abilities
- Creates an incentive 'loop' as authors incentivised to maximise engagement
- 'Reviewing the reviewers' system incentivises high quality PR
- Can be tied to academic records and career advancement
- Establishment of individual prestige

# Some of the major future challenges

- ▶ Catalysing wider discussion and innovation in peer review.
- ▶ Demonstrating that new models outperform traditional processes (or not).
- ▶ Agreement on interoperability requirements across stakeholders.
- ▶ Adoption of elements of the new system across specific communities.
- ▶ Increasing the role of peer review in research[er] evaluation processes.
- ▶ Adapting social communication traits into novel peer review models.
- ▶ Overcoming the “*If you build it, they will come*” fallacy.

# We all need to be deeply introspective and ask the big questions

- ▶ How divergent are the ideologies and practices of peer review?
- ▶ How can Web-native technologies address some of the major criticisms and issues with 'traditional' peer review?
- ▶ How is the Internet changing our expectations of how communication works, and why are scholarly publishing and peer review seemingly lagging behind this?
- ▶ How can we integrate Internet-style communication norms with peer review?
- ▶ How do we increase cross-stakeholder engagement to implement optimal models and practices of peer review?
- ▶ How much do we want to disrupt the relationship between peer review and journal articles? And what will the impact of this be?

# Next steps?

- A critical discussion of these preliminary ideas with you all!
- Should we build a 'proof of concept' prototype and see what happens?\*

