o’Peer

“Public-ation” & Credibility

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Problems with “Communication”

What to believe?
What’s worth reading?
Whose opinion to trust?

One solution: Peer Review
Problems with “Public-ation”

Binary Decision…

…or is it? (Everything gets published somewhere.)

“Impact Factor” industry

Unseen by public until “published” …until ArXiv etc.

Rule of the Elite
Democratic, Open Peer Review: o'Peer

Accumulated credibility = reputation

"Likes" are not enough!

"We have met the editor and the referees, and they are us!"

"Public-ation" redefined

"Open Access" is not enough!

OAJ → Vanity Press

A review is a publication & can be reviewed!
<table>
<thead>
<tr>
<th>NAME</th>
<th>Disciplines Addressed</th>
<th>Description &amp; Comments</th>
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</thead>
<tbody>
<tr>
<td>Open Scholar (U.K.)</td>
<td>Broad spectrum intended</td>
<td>Journal-independent open peer review; OPRM includes assessment of reviewer credibility</td>
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<tr>
<td>f1000</td>
<td>Biomedical only (so far)</td>
<td>Online publication with formal peer review; conventional academic criteria for reviewers</td>
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<tr>
<td>Academic Karma (Australia)</td>
<td>Mainly biomedical</td>
<td>Database of Authors, Editors &amp; Reviewers for preprints; results sent to journals</td>
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<tr>
<td>Peerage of Science</td>
<td>Broad spectrum intended, but so far mainly biomedical</td>
<td>Database of Authors, Editors &amp; Reviewers for preprints; results sent to journals</td>
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<td>academia.edu, researchgate etc.</td>
<td>Broad spectrum</td>
<td>Social media, some informal peer review; lacks assessment of reviewer credibility</td>
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<tr>
<td>Confederation of Open Access Repositories (COAR)</td>
<td>Not directly incorporating peer review (so far?)</td>
<td>Refining the archival function of (e.g.) arXiv.org, dspace.org etc.</td>
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What’s different about o’Peer?

Obviously *some opinions are more reliable than others*; since o’Peer is carrying out the duties of the *editor*, how does it decide *which*?

Again o’Peer avoids a binary decision: the $i$\textsuperscript{th} user/author/reader/reviewer gradually accumulates (through other users’ evaluations of his/her work) a *Credibility* index, $C_i$, which is multiplied, component-wise, by his/her estimate $Q_{\mu i}$ of the *Quality* $q_{\mu}$ of the $\mu$\textsuperscript{th} paper, to form the credibility-weighted average quality of that paper: after many reviews,

$$q_{\mu} = \frac{\sum_j C_j Q_{\mu j}}{\sum_j C_j}$$

where the sums run over all users who have reviewed the $\mu$\textsuperscript{th} paper.
Each author of that paper then has an update of her/his credibility $C_i$:

$$C_i = \frac{1}{N_i} \sum_v q_v$$

where the summation runs over all $N_i$ papers of which user $i$ has ever been an author.

The components of $C_i$ and $q_\mu$ are subject to debate, but are limited only by the patience of reviewers, who have to decide which aspects of a paper they wish to evaluate. An initial guess might be

$$q_\mu = \{ \ell_\mu, w_\mu, o_\mu, a_\mu, e_\mu, t_\mu, i_\mu \}$$

where $\ell_\mu$ is the appropriateness of manuscript length, $w_\mu$ is the quality of writing, $o_\mu$ is the work’s originality, $a_\mu$ is its creativity (art), $e_\mu$ is its execution, $t_\mu$ is its correctness and $i_\mu$ is its importance. New components are easy to add.

The credibility $C_i$ of each user has similar components, except that the phrase “judgement of” should be inserted after “is” in each description.
Try it out at

http://oPeer.org