



Assessing peer review by gauging the fate of rejected manuscripts. The case of *Journal of Artificial Societies and Social Simulation*

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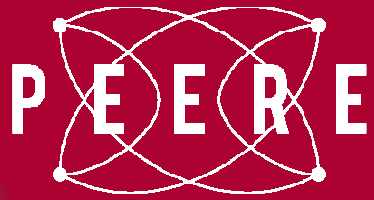
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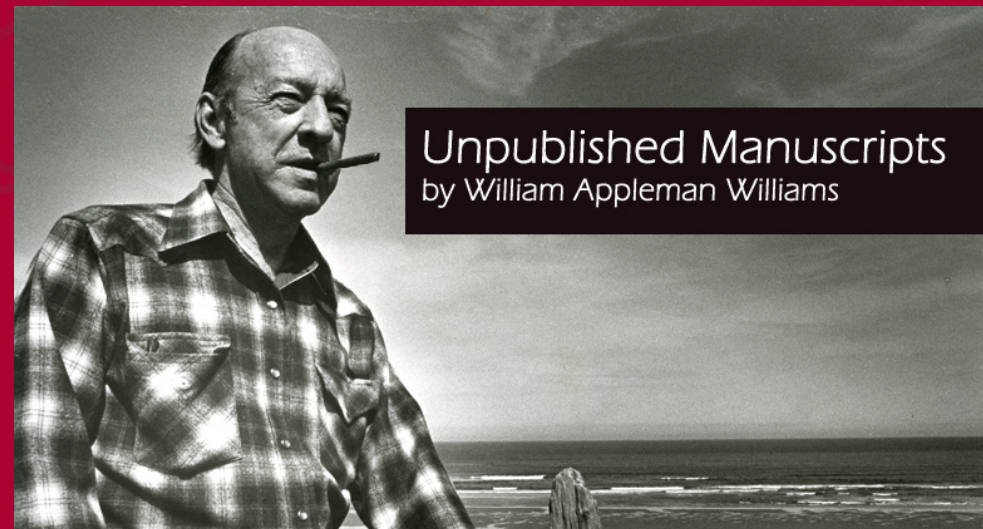
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Why looking at the fate of unpublished manuscripts?



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Wijnhoven and Dejong (2010) examined 926 manuscripts rejected by the *British Journal of Surgery* and found that 609 (65.8%) were published in 198 different journals, mostly in subspecialty surgical and non-surgical journals with a mean time lapse of 13.8 months. Only 14 manuscripts (2.3%) were eventually published in journals with a higher impact factor than the *British Journal of Surgery*. Similar results were found by Khosla et al. (2011) in a study on 371 manuscripts that were rejected by *Radiology* in 2005-2006, although here the mean time lapse was 17.3 months. Similar results were obtained in a retrospective online survey by Hall and Wilcox (2007) on a sample of authors rejected by *Epidemiology* in 2002. In general, authors admitted that their manuscripts that were rejected by the first journal were ultimately submitted to a journal of lower impact, so confirming the hypothesis that authors try first prestigious journals and subsequently go for less prestigious ones.



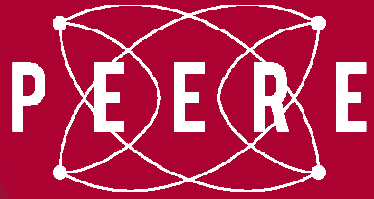
More interestingly, especially to understand whether peer review contributes to increasing the quality of rejected manuscripts for future publication, Armstrong et al. (2008) examined the case of 489 unpublished manuscripts by the *Journal of the American Academy of Dermatology* in 2004-2005. They looked at whether the authors of rejected manuscripts adopted in their final publications the changes suggested by the original journal reviewers. Among the 101 subsequently published manuscripts for which full texts were available, 82% of the authors incorporated at least one change suggested by the original reviewers. These manuscripts were eventually published in journals with higher impact factors than those that did not incorporate any reviewer suggestions ($P = .0305$). A more in depth-study on *Angewandte Chemie International Edition* by Bornmann, Weymuth and Daniel (2010), who applied a content analysis to referee reports on 1899 manuscripts that were reviewed in 2010, confirmed a relation between original peer review and later publication of rejected manuscripts. While 94% of the 1021 rejected manuscripts were published more or less unchanged in another journal, they found that previously rejected manuscripts were more likely to be published in journals of higher impact factor when there were no negative comments by reviewers on important aspects of the submission, such as relevance of contribution and research design.

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From 1998
Published online
Multidisciplinary
1272 submissions
606 published articles
236 book reviews
75% rejection rate
60 days from the author submission to the editorial
decision
Average report time by referees of 30 days
20% of first submission authors from the US



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1997-2011 submissions 456 rejected manuscripts Dataset:

- ✓ Submission date
- ✓ Referee recommendations
- ✓ Review rounds
- ✓ Editorial decision
- ✓ Academic status of the first author
- ✓ Background of reviewers
- ✓ Length of the review reports

Attitudes of Referees in a Multidisciplinary Journal: An Empirical Analysis

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This paper looks at 10 years of reviews in a multidisciplinary journal, *The Journal of Artificial Societies and Social Simulation* (JASSS), which is the flagship journal of social simulation. We measured referee behavior and referees' agreement. We found that the disciplinary background and the academic status of the referee have an influence on the report time, the type of recommendation and the acceptance of the reviewing task. Referees from the humanities tend to be more generous in their recommendations than other referees, especially economists and environmental scientists. Second, we found that senior researchers are harsher in their judgments than junior researchers, and the latter accept requests to review more often and are faster in reporting. Finally, we found that articles that had been refereed and recommended for publication by a multidisciplinary set of referees were subsequently more likely to receive citations than those that had been reviewed by referees from the same discipline. Our results show that common standards of evaluation can be established even in multidisciplinary communities.

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Introduction

Reviewing for journals is a kind of moral duty in the scientific community, being instrumental to the Mertonian ethical norms that regulate science as an organized institution (Huutoniemi 2015; Merton 1942). We know that the quality of our publications depends at least partially on comments and suggestions given by competent and cooperative referees (e.g., Mulligan, Hall, & Raphael, 2013). On the other hand, we know that science is a public good that can be maintained only if we are unbiased in judgment and collaborate in distributing efficiently and more or less equally the reviewing effort (e.g., Hochberg, Chase, Gotelli, Hastings, & Naem, 2009).

Given that review standards are not formalized and our decisions are typically confidential, it is likely that the way we accomplish this duty may depend on our background and experience, as well as on our commitment to the journal that asked our opinion. Given the lack of training on reviewing, the opacity of the process, and the weak incentives for referees, the way we review and the time we take to accomplish this important task might depend on attitudes and norms that can reflect the attitudes of the other members of our scientific community (e.g., Azar, 2008; Squazzoni & Gandelli, 2013).

This means that looking at referee behavior could potentially help to reveal scientist misbehavior or situations where referees could benefit from their gatekeeping role at the

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Type of publication	Freq.	Percent
Book	1	0.53
Book chapter	8	4.26
Conference proceedings	24	12.77
Journal article	91	48.40
Working paper	64	34.04
Total	188	100.00

Table 1. Destination of the manuscripts rejected from *JASSS* (source: Google Scholar).



Flaminio Squazzoni^a and Niccolò Casnici^b (2013)

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Is Social Simulation a Social Science Outstation? A Bibliometric Analysis of the Impact of JASSS

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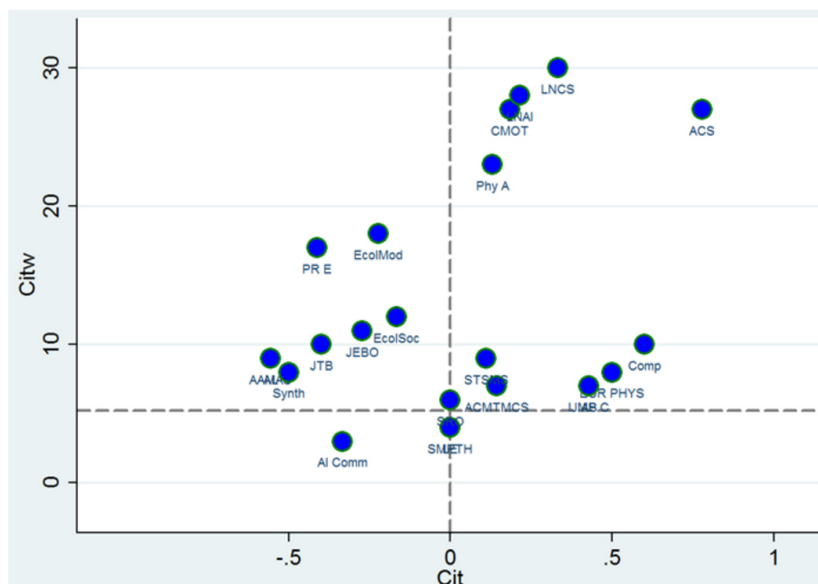


Figure 10. The inter-journal relation index in 2010 (including only higher values).

Journal	Number of published articles
International Journal of Information Technologies and Systems Approach	1
Acta Biotheoretica*	2
Advances in Systems Science and Application	1
Agricultural systems*	1
AI & society	1
American Journal of Economics*	1
Annals of the Association of American Geographers*	1
Applied Artificial Intelligence*	1
Artificial life*	1
Complex Systems	1
Complexity*	2
Computational and Mathematical Methods in Medicine*	2
Computational and Mathematical Organization Theory*	1
Computers in biology and medicine*	1
Computers, Environment and Urban Systems	1
Connection Science	1
Cybergeog: European Journal of Geography	1
Developments in Business Simulation and Experiential Learning	1
Ecological Economics*	1
Electronic International Journal of Time Use Research	1
Expert Systems with Applications*	3
Fluctuation and Noise Letters*	1
Information and Knowledge Management	1
Information Sciences	1
Interactive Cardio Vascular and Thoracic Surgery*	1
Interdisciplinary Description of Complex Systems	1
International Journal of Advancements in Computing Technology	1
International Journal of Computer Science & Information Technology	1
International Journal of Geographical Information Science*	1
International Journal of Knowledge and Systems Science (IJKSS)	1
International Journal of Knowledge-based and Intelligent Engineering Systems	1
International Journal of Microsimulation	2
International Journal of Modelling and Simulation	1
International Journal of Modern Physics C*	1
International Journal of Production Research*	2

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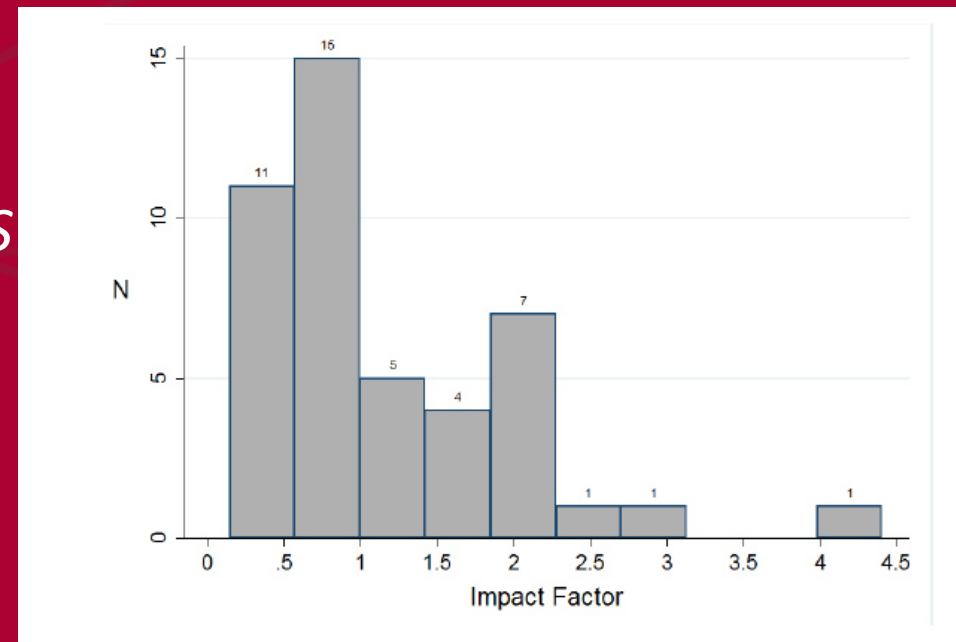
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55% of the previously rejected manuscripts were published in journals with an impact factor higher than *JASSS*, but only 38% of them received more citations than the articles published in *JASSS* in the same year

Only 6% of manuscripts previously rejected from *JASSS* and published elsewhere would have reached *JASSS* top 10 (i.e., 11 of the 185 rejected manuscripts)



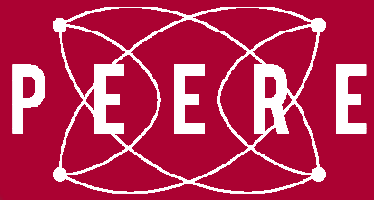
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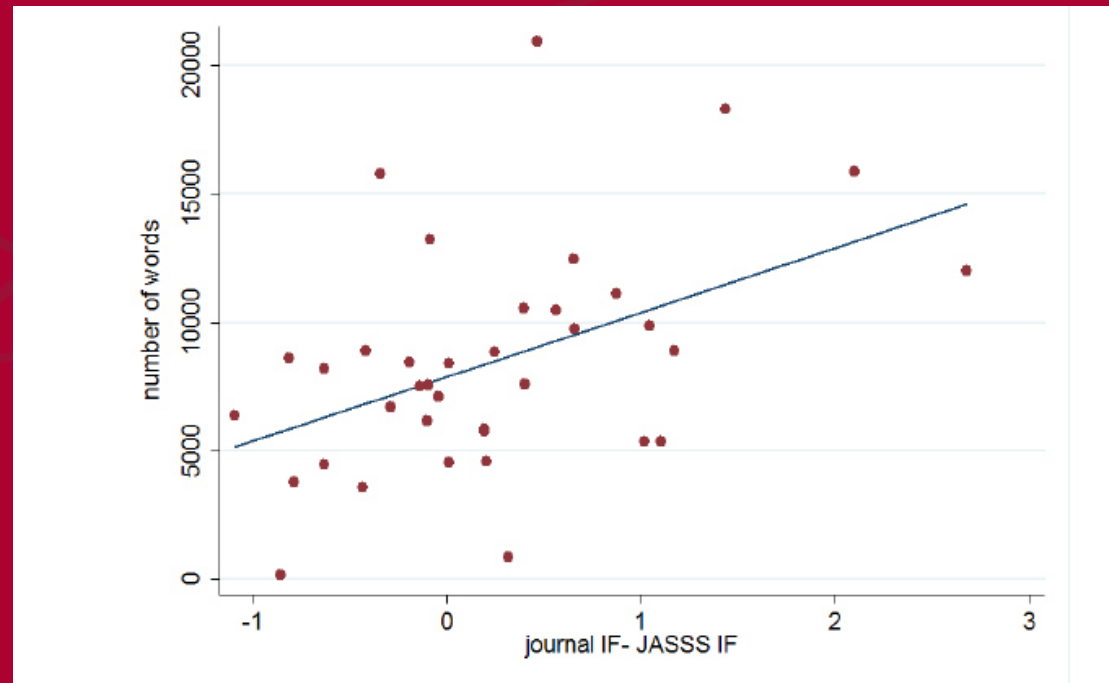
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More rounds of reviews before rejection were associated with more citations when eventually published

A positive correlation was found between the level of reviewer disagreement and higher citations when the rejected manuscript is eventually published



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Articles receiving more rounds of reviews before they were rejected by JASSS, experiencing more intra-reviewer disagreement, and getting longer reports had more success in collecting citations when they were eventually published than those that received more cursory reviews.

This confirms previous findings by Armstrong et al. (2008) and Bornmann et al. (2010), who similarly found that rejected manuscripts that underwent more thorough peer review had more success later.

Peer review is not only a selection engine but can also increase the quality of manuscripts

However, examining the fate of unpublished manuscripts is difficult and costly

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