

# Citation manipulation: endemic or exceptional?

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## Acknowledgements

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## Declaration of interests:

- Catriona works for Elsevier STM Journals & is responsible for publishing ethics policies & best practices
- Jeroen works for Elsevier Research Products, which include Scopus (CiteScore) & Scival

Paper under review for the Proceedings of the 17th ISSI conference



- Never let a good crisis go to waste
- Data model & indicators
- Outliers & detailed analysis
- Case study



**‘Never let a good crisis go to waste’ (aka the Dutch way)**

## Some terminology

- Citation manipulation/coercion: Reviewer or editor influencing authors to add **unnecessary and/or inappropriate citations** during the peer review process in order to increase citations to: their own work/ their associates' work/ their own journal/ a related journal with which they cooperate
- Citation pushing (editors/reviewers)
- Citation stacking (journals)
- Citation cartel

Let's change  
what we value  
in research.



COMMENT · 28 MAY 2019

## Rethinking impact factors: better ways to judge a journal

*We need a broader, more-transparent suite of metrics to improve science publishing, say Paul Wouters, colleagues and co-signatories.*

[Paul Wouters](#) ✉, [Cassidy R. Sugimoto](#), [Vincent Larivière](#), [Marie E. McVeigh](#), [Bernd Pulverer](#), [Sarah de Rijcke](#) & [Ludo Waltman](#)

## 'S-index' aims to tackle abuse of self-citations in science

Metric on self-referencing could provide 'truer' citation data, say researchers

The h-index, or the academic equivalent of the stag's antlers

*Philip Ball*



# Can soil science research dig itself out from a citation stacking scandal?

*Last year, the soil science community was rocked by reports that an editor, [Artemi Cerdà](#), was accused of citation stacking — asking authors to cite particular papers — boosting his profile, and that of journals where he worked. (Cerdà has denied the allegations.) The case had some major fallout: Cerdà resigned from two journals and the editorial board of *Geoderma*, additional editors resigned from their posts, and a university launched an investigation. In the midst of the mess, a group*



Jan Willem van Groenigen

## Wetenschappers die via reviews reclame maken voor zichzelf, daar wil Wageningen van af

Onderzoekers beoordelen elkaars werk als 'reviewer' anoniem. Zo kan iemand onterecht citaties opdringen aan een ander. De universiteit van Wageningen wil dat dit wordt aangemerkt als een vorm van wetenschapsfraude.

**Maarten Keulemans** 5 september 2017, 19:55

### Ousted editor speaks: I did not manipulate citations

Last month, a publisher announced that one of its editors had resigned, following accusations he'd asked authors to cite particular papers, boosting his profile and that of journals where he worked. The publisher declined to name the editor. But when an anonymous report began circulating about the incident, the publisher named the researcher: [Artemi Cerdà](#), based at the Universitat de València.



Artemi Cerdà

# Citation manipulation: what journals can do

- ✓ Make clear to all parties that this is unacceptable, e.g. in reviewer instruction messages & guidelines
- ✓ Educate editors: outreach, add to legal agreements
- ✓ Remove reviewer & editor privileges, add warnings
- ✓ Inform institutes & funding bodies
- ? Editorial systems detect (self) citations in reviews/revision letters
- ? Retract citations
- ? Black-list worst offenders
- ? Share information with other journals

COPE guidelines for reviewers: <https://publicationethics.org/resources/guidelines-new/cope-ethical-guidelines-peer-reviewers>

Elsevier ethical guidelines: <http://www.elsevier.com/publishingethics>

Elsevier Editors' Update <https://www.elsevier.com/connect/editors-update/when-reviewing-goes-wrong-the-ugly-side-of-peer-review>

## Spoilers: here's what we found

- From >54,000 reviewers, >1000 reviewers whose citation patterns were outliers & citations analysed for addition during peer review
- 98.5% “innocent” (added < 10%)
- 1.4% “medium suspicious” (added 10-90%)
- 0.1% “highly suspicious” (added > 90%)

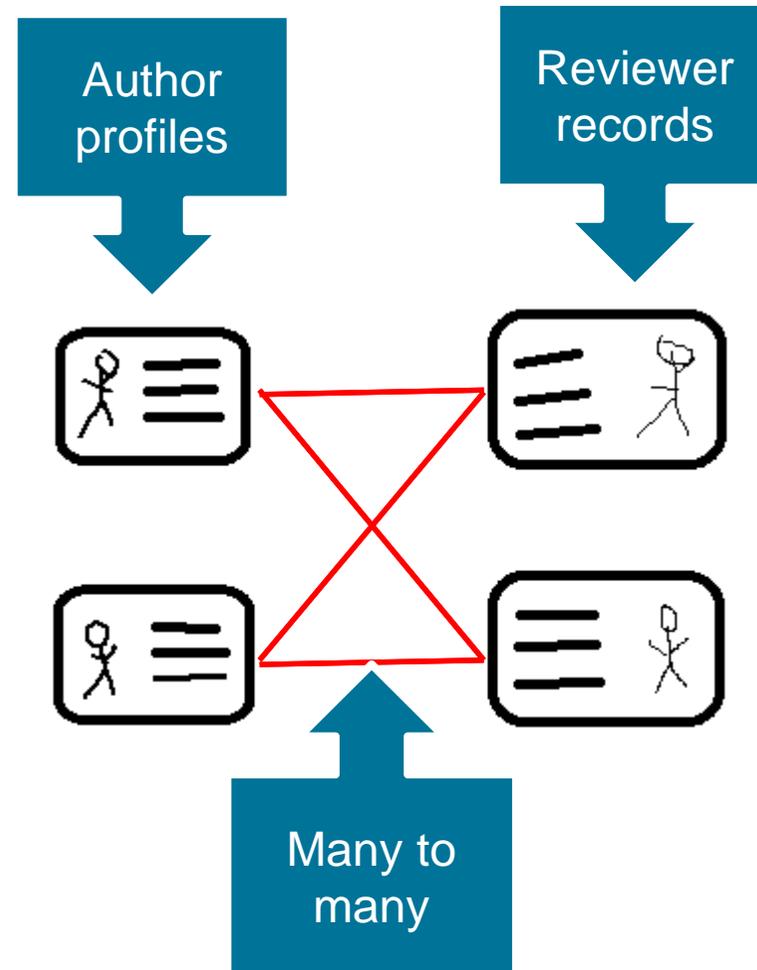
*if you're thinking these cut-off points are arbitrary, you're right, let's discuss!*

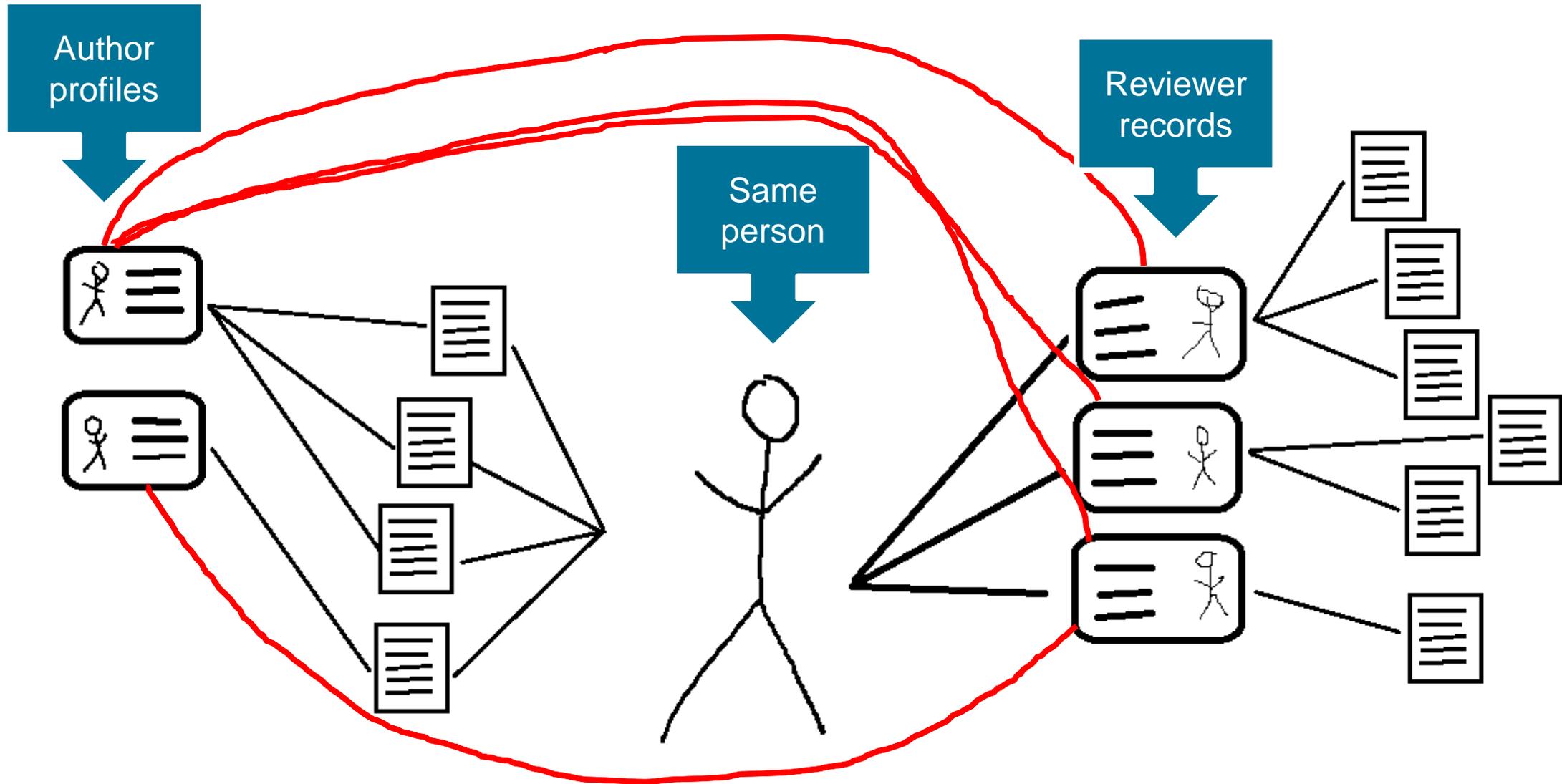
# Limitations & data model

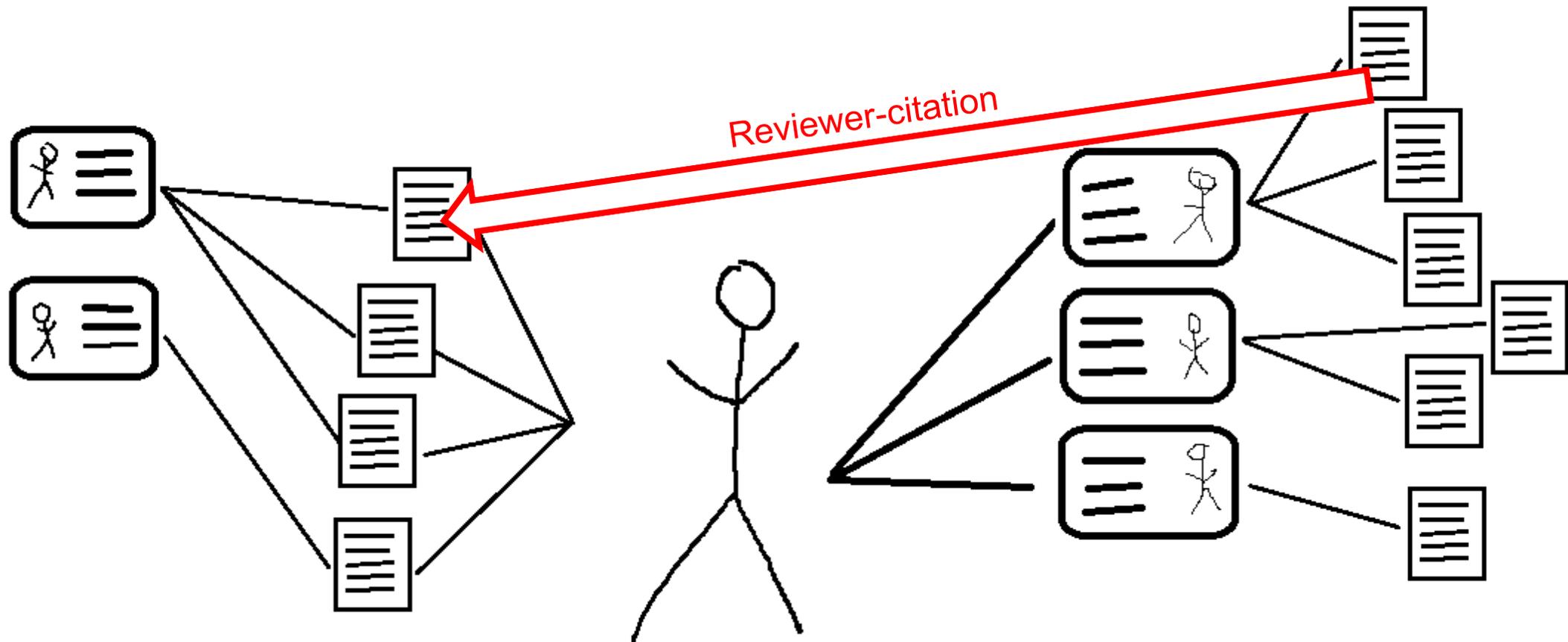
# Limitations

- Data limited to reviews within Elsevier journals
- Unpublished submissions are mostly unstructured & untagged
- Structured citations not always available for submissions
- Reviewer reports are unstructured & untagged; may be inaccessible; copyright remains with the reviewer
- Honest reviewers may have many profiles across Elsevier journals...dishonest reviewers will have even more!

# Data model: summary





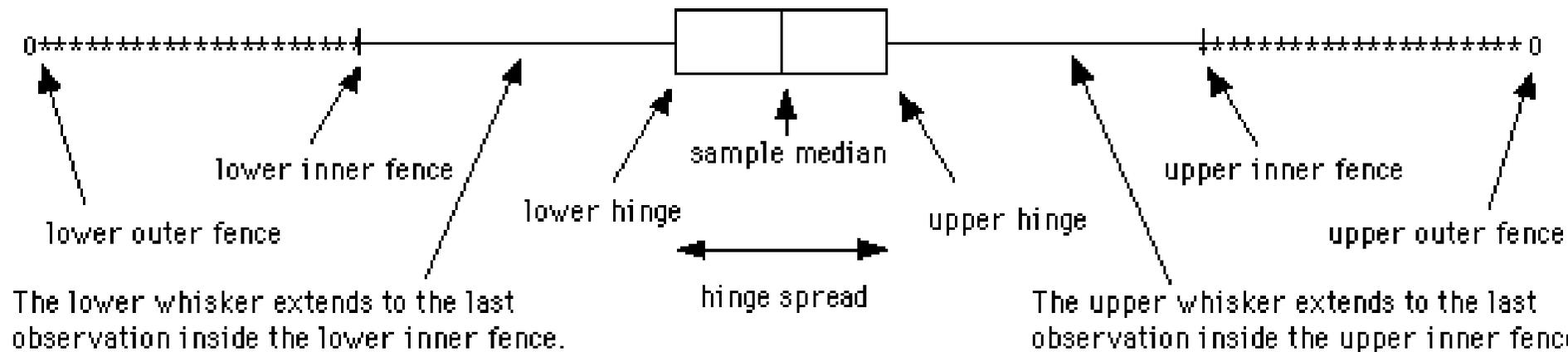
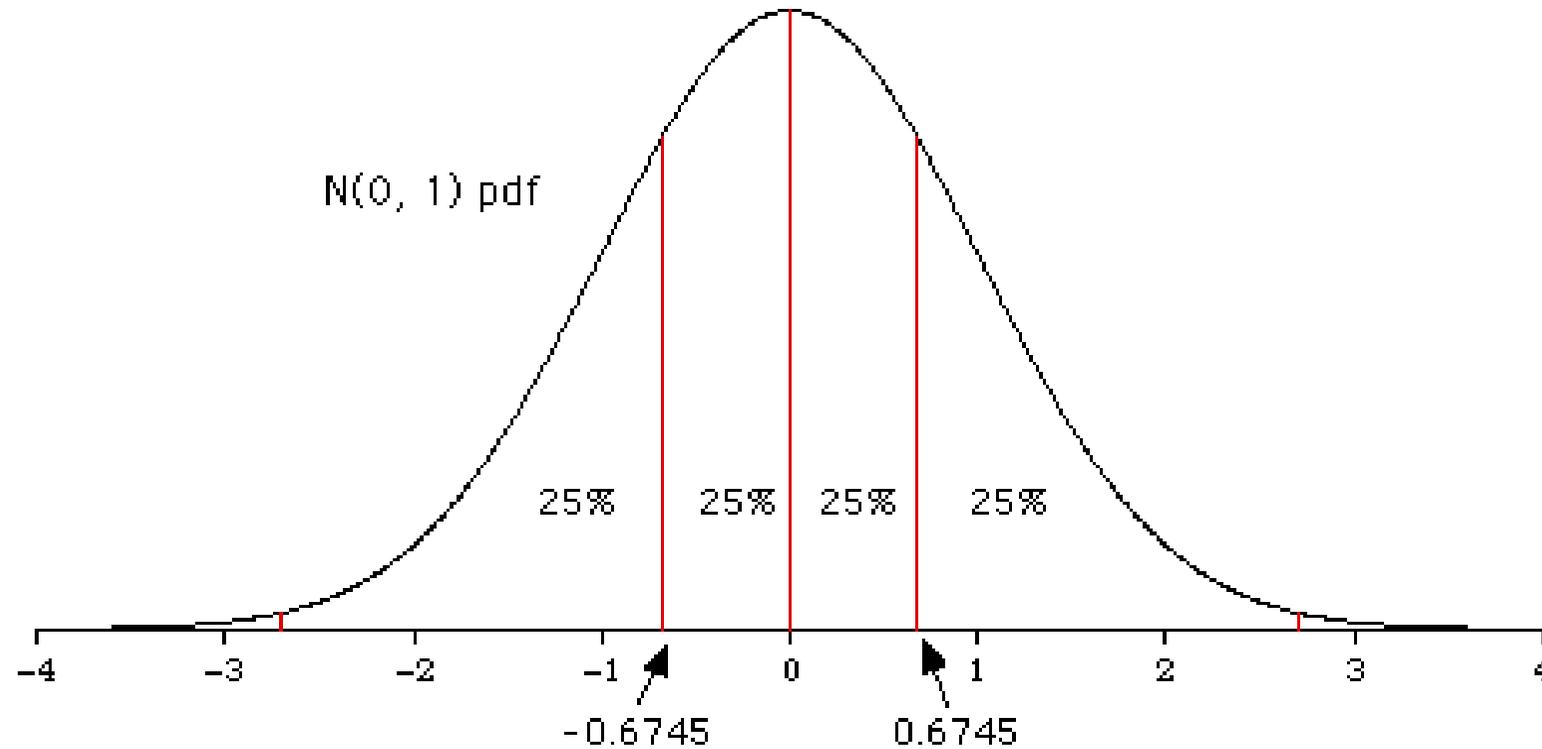


# Outliers



# Narrowing the field

- 506,614 reviewers
  - 0 reviewer-citations: 272,072 (54%)
- 69,096 filtered:
  - $\geq 5$  reviewed
  - $\geq 5$  published
  - 0 reviewer-citations: 14,275 (20%)
- 54,821 further filtered
  - $\geq 1$  reviewer-citations

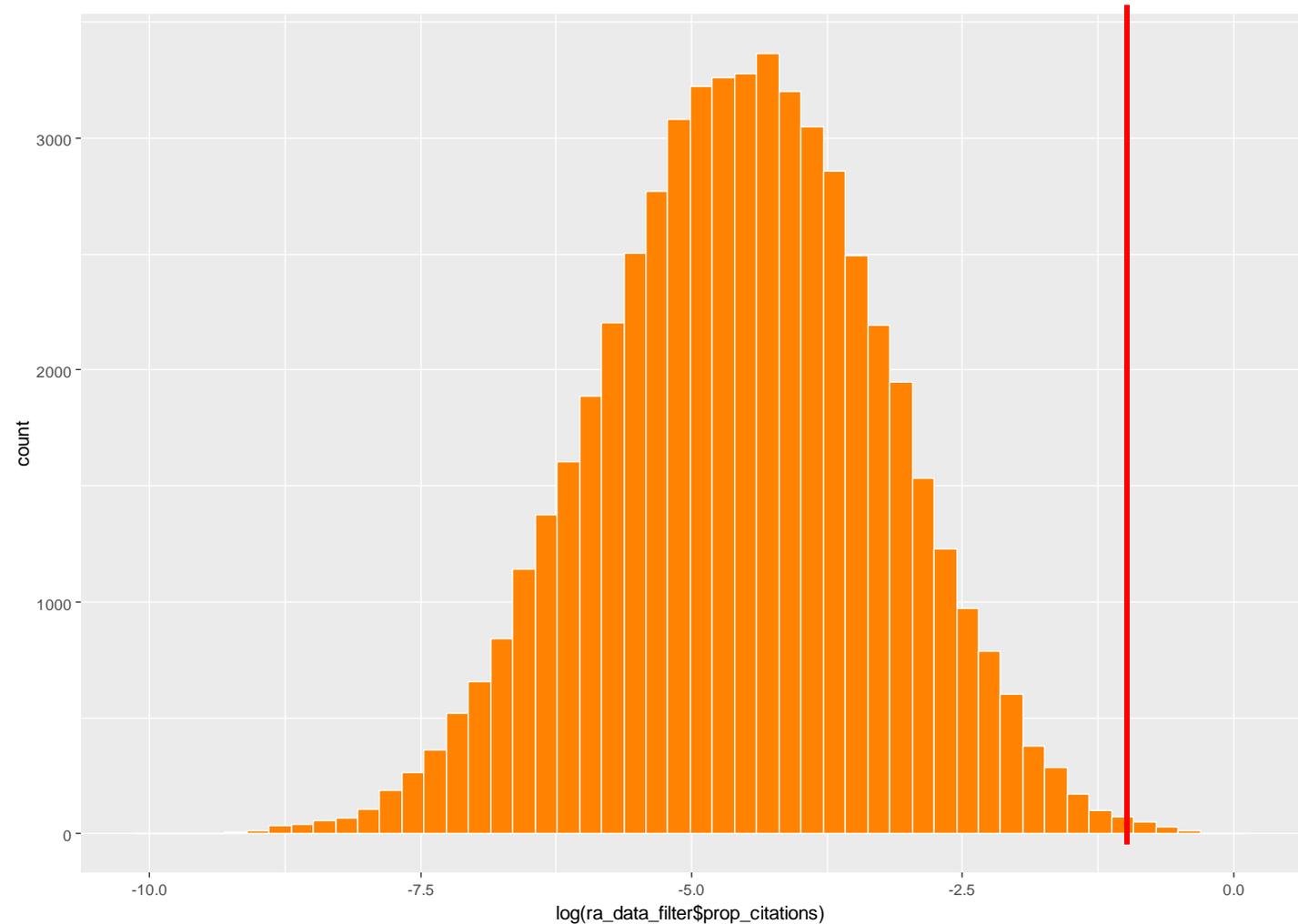


The lower whisker extends to the last observation inside the lower inner fence.

The upper whisker extends to the last observation inside the upper inner fence.

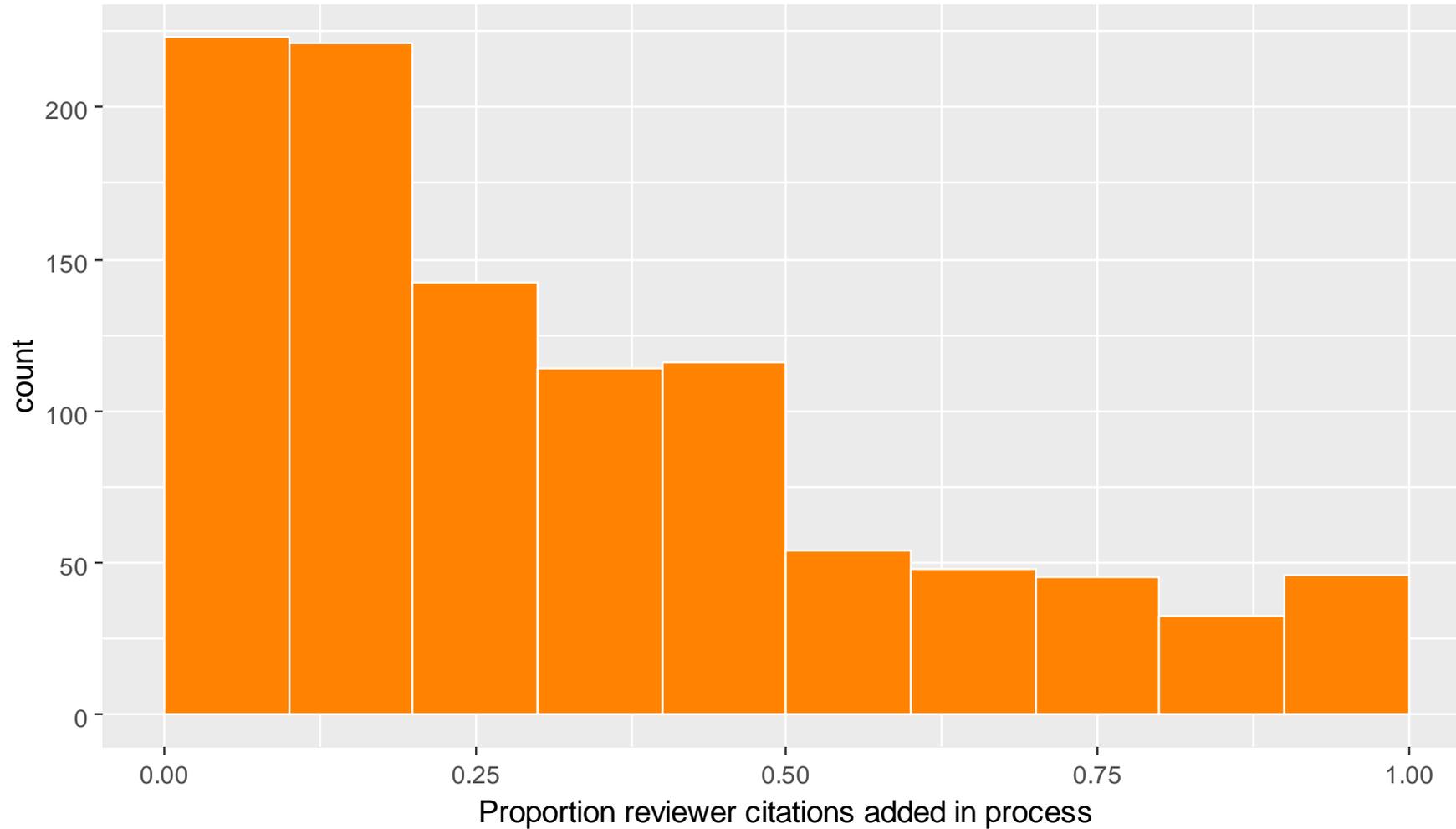
# Reviewer-citations / Citation count to the reviewer (log)

- Q1: -5.43372200355 (0.43 %)
- Q2 (median): -4.52720864452 (1.08 %)
- Q3: -3.64283551561 (2.62 %)
- IQ: 1.79088648794
- upper inner fence:  
 $Q3 + 1.5 * IQ = -0.9565057837$  (38.4 %)
- upper outer fence:  
 $Q3 + 3 * IQ = 1.72982394821$  (432712.8 %)

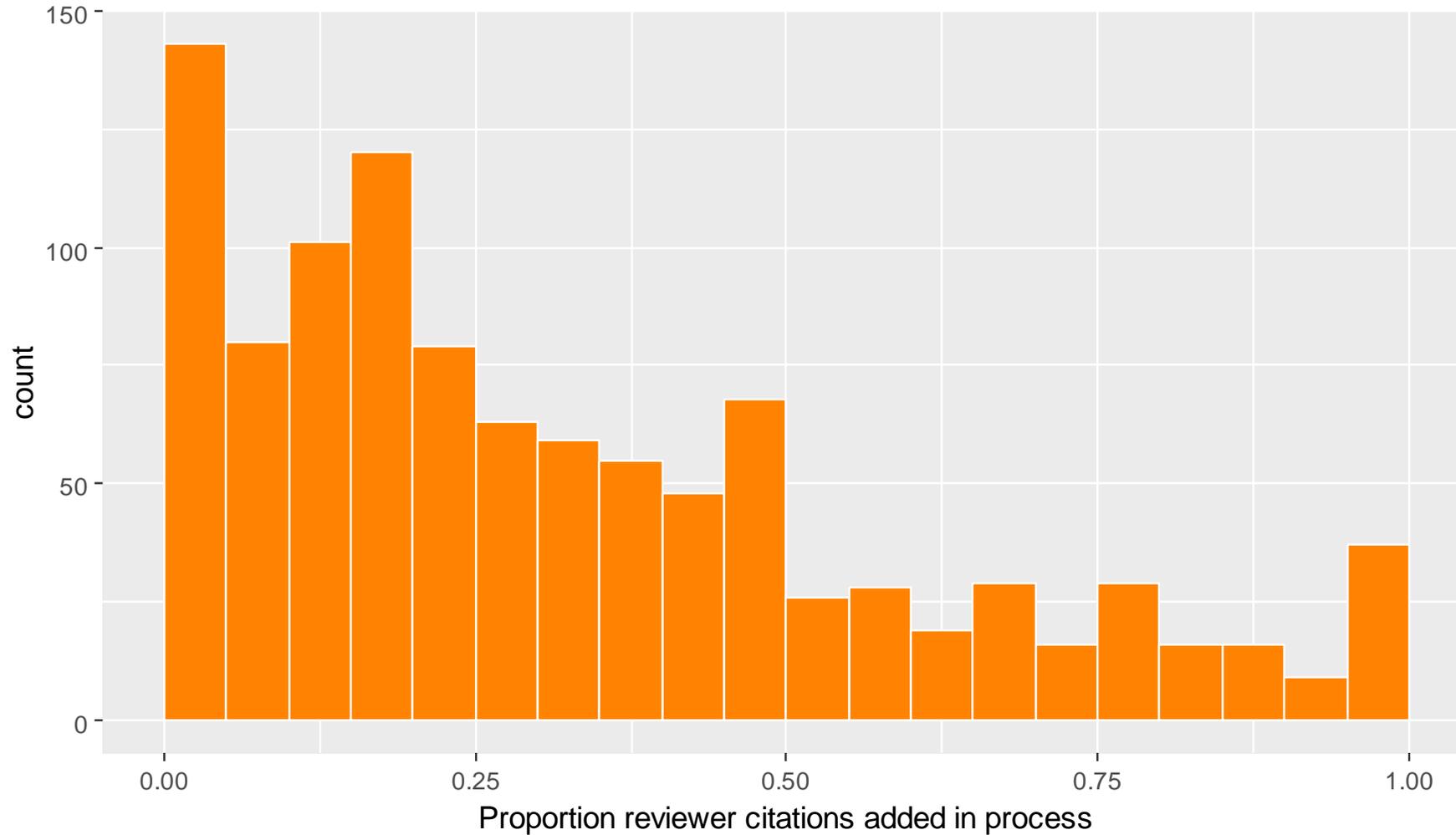


**Phase 2: was the reviewer-citation adding during peer review?**

# Proportion added - 10% bands



# Proportion added 5% bands



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## Case Study: Dr X

- H index =90; 20,000 citations in Scopus
- Entirely unrepentant
- Institute unresponsive
- No funding body
- Practices as an author even more than as reviewer

count reviewed documents in scopus	sum of references in reviewed documents	sum of references to reviewer	count reviewed documents in scopus citing reviewer	% of reviewed documents that cite reviewer	% of references to reviewer (relative to all reviewed refs)	% of citations from reviewed (relative to all)	% of citations from reviewed (relative to Elsevier and period origin)	REV authored docs	REV authored cits	REV authored citsElsPeriod	countOverlap
152	6489	1427	146	96%	10%	14%	20%	187	10138	7168	40

**Thank you for listening**

**Questions or Comments**

**Acknowledgements**

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