



CORRESPONDENCE

# Biased under-reporting of research reflects biased under-submission more than biased editorial rejection [v1; ref status: indexed, <http://f1000r.es/VilqTX>]

Iain Chalmers<sup>1</sup>, Kay Dickersin<sup>2</sup>

<sup>1</sup>James Lind Initiative, Summertown Pavilion, Middle Way, Oxford, OX2 7LG, UK

<sup>2</sup>Center for Clinical Trials, Johns Hopkins Bloomberg School of Public Health, 615 N. Wolfe St. Rm E6152, Baltimore, Maryland, 21205, USA

**v1** **First Published:** 02 Jan 2013, 2:1 (doi: 10.12688/f1000research.2-1.v1)  
**Latest Published:** 02 Jan 2013, 2:1 (doi: 10.12688/f1000research.2-1.v1)

**Abstract**

Stephen Senn challenges Ben Goldacre’s assertion in ‘Bad Pharma’ that biased editorial acceptance of reports with ‘positive’ findings is not a cause of biased under-reporting of research. We agree with Senn that biased editorial decisions may contribute to reporting bias, but Senn ignores the evidence that biased decisions by researchers to submit reports for possible publication are the main causes of the problem.

**Article Status Summary**

**Referee Responses**

Referees	1	2	3
v1 published 02 Jan 2013	 report		 report

- 1 **Riekie de Vet**, VU University Medical Center Netherlands
- 2 **Luigi Naldi**, Centro Studi GISED Italy
- 3 **Steven A Julious**, University of Sheffield UK

**Latest Comments**

No Comments Yet

**Associated Opinion Article**

**Senn S** *F1000Research* 2012, **1**:59 (doi: [10.12688/f1000research.1-59.v1](https://doi.org/10.12688/f1000research.1-59.v1))

**Associated Correspondence**

**Senn S** *F1000Research* 2013, **2**:17 (doi: [10.12688/f1000research.2-17.v1](https://doi.org/10.12688/f1000research.2-17.v1))

**Corresponding author:** Iain Chalmers ([ichalmers@jameslindlibrary.org](mailto:ichalmers@jameslindlibrary.org))

**How to cite this article:** Chalmers I, Dickersin K (2013) Biased under-reporting of research reflects biased under-submission more than biased editorial rejection [v1; ref status: indexed, <http://f1000r.es/VilqTX>] *F1000Research* 2013, **2**:1 (doi: [10.12688/f1000research.2-1.v1](https://doi.org/10.12688/f1000research.2-1.v1))

**Copyright:** © 2013 Chalmers I et al. This is an open access article distributed under the terms of the [Creative Commons Attribution Licence](https://creativecommons.org/licenses/by/4.0/), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited. Data associated with the article are available under the terms of the [Creative Commons Zero "No rights reserved" data waiver](https://creativecommons.org/licenses/by/4.0/) (CC0 1.0 Public domain dedication).

**Grant information:** The author(s) declared that no grants were involved in supporting this work.

**Competing Interests:**

No competing interests were disclosed.

**First Published:** 02 Jan 2013, **2**:1 (doi: [10.12688/f1000research.2-1.v1](https://doi.org/10.12688/f1000research.2-1.v1))

**First Indexed:** 08 Jan 2013, **2**:1 (doi: [10.12688/f1000research.2-1.v1](https://doi.org/10.12688/f1000research.2-1.v1))

Stephen Senn challenges Ben Goldacre's assertion in *'Bad Pharma'*<sup>1</sup> that biased editorial acceptance of reports with 'positive' findings is not a cause of biased under-reporting of research, and concludes that "the prospects for disentangling cause and effect when it comes to publication bias are not great"<sup>2</sup>. Senn apparently overlooks the studies – including controlled experiments - which have investigated reporting biases. These are summarised in an article<sup>3</sup> from which the following is an excerpt:

**“Who is responsible for biased reporting of clinical research?”**

*Reporting bias can be due to researchers and sponsors failing to submit study findings for publication, or due to journal editors and others rejecting reports for publication. Numerous surveys of investigators have left little doubt that almost all failure to publish is due to the failure of investigators to submit reports for publication<sup>4,5</sup>, with only a small proportion of studies remaining unpublished because of rejection by journals<sup>6</sup>, although positive-outcome bias has been demonstrated among peer reviewers<sup>7</sup>. Qualitative studies of editorial discussion indicate that a study's scientific rigour is the area of greatest concern<sup>8</sup>. Researchers report that the reason they do not write up and submit reports of their research for publication is usually because they are “not interested” in the results (“editorial rejection by journals” is only rarely given as a cause of failure to publish). Even those investigators who have initially published their results as (conference) abstracts are less likely to submit their findings for full publication unless the results are ‘significant’<sup>9</sup>.*

*Investigations of biased reporting of research began with surveys of journal articles, which revealed improbably high proportions of published studies showing statistically significant differences<sup>10–14</sup>. Subsequent surveys of authors and peer reviewers showed that research that had yielded ‘negative’ results was less likely than other research to be submitted or recommended for publication<sup>15–18</sup>. These findings have been reinforced by the results of experimental studies,*

*which showed that studies with no reported statistically significant differences were less likely to be accepted for publication<sup>7,19–21</sup>”.*

Senn's use of the term 'publication bias' in his commentary suggests that he is restricting it to editorial bias whereas, as indicated above, the origins of reporting bias are largely due to researchers' decisions not to submit, not editorial decisions not to accept. The analyses of observational data cited by Ben Goldacre in his book *'Bad Pharma'*<sup>1</sup> do not detect editorial bias, but neither do they support a confident conclusion that no editorial bias exists. However, we believe Goldacre is correct to castigate researchers and research sponsors as being more culpable than editors in betraying their responsibility to the patients who have participated in trials.

The controlled experiments suggest that it is the results of studies, not their quality, that predisposes them to editorial bias. Senn believes that any editorial bias that exists can be 'very plausibly explained' by preferential publication of 'positive' studies, and that it "seems plausible that higher quality studies are more likely to lead to a positive result". Unless he is using the word 'positive' to mean something other than 'a beneficial effect', however, Senn appears to be overlooking substantial evidence challenging the plausibility of his belief (see, for example, reference<sup>22</sup>). Given the estimated likelihood of new treatments proving superior to standard treatments<sup>23</sup> it surprises us that, "as a statistician" Senn would find this evidence "unpalatable".

#### Author contributions

The authors both contributed to the text submitted.

#### Competing interests

No competing interests were disclosed.

#### Grant information

The author(s) declared that no grants were involved in supporting this work.

## References

- Goldacre B: **Bad Pharma**. London: 4<sup>th</sup> Estate 2012.  
[Reference Source](#)
- Senn S: **Misunderstanding publication bias: editors are not blameless after all** [v1; ref status: indexed, <http://f1000r.es/YvAwWD>]. *F1000 Research*. 2012; 1(59).  
[Publisher Full Text](#)
- Dickersin K, Chalmers I: **Recognising, investigating and dealing with incomplete and biased reporting of clinical research: from Francis Bacon to the World Health Organisation**. JLL Bulletin: Commentaries on the history of treatment evaluation. ([www.jameslindlibrary.org](http://www.jameslindlibrary.org)).  
[Reference Source](#)
- Timmer A, Hilsden RJ, Cole J, et al.: **Publication bias in gastroenterological research - a retrospective cohort study based on abstracts submitted to a scientific meeting**. *BMC Med Res Methodol*. 2002; 2: 7.  
[PubMed Abstract](#) | [Publisher Full Text](#) | [Free Full Text](#)
- Godlee F, Dickersin K: **Bias, subjectivity, chance, and conflict of interest in editorial decisions**. In: Godlee F, Jefferson T, eds. *Peer review in health sciences, 2nd edition*. London: BMJ Books 2003.  
[Reference Source](#)
- Olson CM, Rennie D, Cook D, et al.: **Publication bias in editorial decision making**. *JAMA*. 2002; 287(21): 2825–2828.  
[PubMed Abstract](#) | [Publisher Full Text](#)
- Emerson GB, Warme WJ, Wolf FM, et al.: **Testing for the presence of positive-outcome bias in peer review: a randomized controlled trial**. *Arch Intern Med*. 2010; 170(21): 1934–1939.  
[PubMed Abstract](#) | [Publisher Full Text](#)
- Dickersin K, Ssemamanda E, Mansell C, et al.: **What do JAMA editors say when they discuss manuscripts that they are considering for publication? Developing a schema for classifying the content of editorial discussion**. *BMC Med Res Methodol*. 2007; 7: 44.  
[PubMed Abstract](#) | [Publisher Full Text](#) | [Free Full Text](#)
- Scherer RW, Langenberg P, Von Elm E: **Full publication of results initially presented in abstracts**. *Cochrane Database Syst Rev*. 2007; 18(2): MR000005.  
[PubMed Abstract](#) | [Publisher Full Text](#)
- Sterling TD: **Publication decisions and their possible effects on inferences drawn from tests of significance - or vice versa**. *J Am Statistical Assoc*. 1959; 54: 30–34.  
[Publisher Full Text](#)
- Smart RG: **The importance of negative results in psychological research**. *Can Psychologist*. 1964; 5(4): 225–232.  
[Publisher Full Text](#)
- Chalmers TC, Koff RS, Grady GF, et al.: **A note on fatality in serum hepatitis**. *Gastroenterology*. 1965; 49: 22–26.  
[Reference Source](#)
- Light RJ, Pillemer DB: **Summing up**. Cambridge: Harvard University Press 1984.  
[Reference Source](#)
- Song F, Parekh S, Hooper L, et al.: **Dissemination and publication of research findings: an updated review of related biases**. *Health Technol Assess*. 2010; 14(8): iii, ix–xi, 1–193.  
[PubMed Abstract](#)

15. Greenwald AG: **Consequences of prejudice against the null hypothesis.** *Psychol Bull.* 1975; **82**(1): 1–20.  
[Publisher Full Text](#)
16. Coursol A, Wagner EE: **Effect of positive findings on submission and acceptance rates: A note on meta-analysis bias.** *Prof Psychol: Res Pract.* 1986; **17**(2): 136–137.  
[Publisher Full Text](#)
17. Dickersin K, Chan S, Chalmers TC, *et al.*: **Publication bias and clinical trials.** *Control Clin Trials.* 1987; **8**(4): 343–53.  
[PubMed Abstract](#) | [Publisher Full Text](#)
18. Shadish WR, Doherty M, Montgomery LM, *et al.*: **How many studies are in the file drawer? An estimate from the family/marital psychotherapy literature.** *Clin Psychol Rev.* 1989; **9**(5): 589–603.  
[Publisher Full Text](#)
19. Mahoney MJ: **Publication prejudices: An experimental study of confirmatory bias in the peer review system.** *Cog Ther Res.* 1977; **1**(2): 161–175.  
[Publisher Full Text](#)
20. Peters D, Ceci S: **Peer review practice of psychologic journals: The fate of published articles submitted again.** *Behav Brain Sci.* 1982; **5**(2): 187–195.  
[Publisher Full Text](#)
21. Epstein WM: **Confirmational response bias among social work journals.** *Sci Technol Hum Values.* 1990; **15**(1): 9–38.  
[Publisher Full Text](#)
22. Savović J, Jones HE, Altman DG, *et al.*: **Influence of reported study design characteristics on intervention effect estimates from randomized controlled trials.** *Ann Intern Med.* 2012; **157**(6): 429–438.  
[PubMed Abstract](#) | [Publisher Full Text](#)
23. Djulbegovic B, Kumar A, Glasziou PP, *et al.*: **New treatments compared with established treatments in randomized trials.** *Cochrane Database Syst Rev.* 2012; **10**: MR000024.  
[PubMed Abstract](#) | [Publisher Full Text](#) | [Free Full Text](#)

## Current Referee Status:

---

### Referee Responses for Version 1



**Steven A Julious**

Medical Statistics Group, School of Health and Related Research, University of Sheffield, Sheffield, UK

**Approved: 09 January 2013**

**Referee Report:** 09 January 2013

I would just put one anecdotal observation and that is of second studies that replicate the findings of a study published in a journal. An editor may turn down the second study as 'nothing new' is being said although most would argue replication to be important.

**I have read this submission. I believe that I have an appropriate level of expertise to confirm that it is of an acceptable scientific standard.**

**Competing Interests:** No competing interests were disclosed.



**Luigi Naldi**

Department of Dermatology, Centro Studi GISED, Bergamo, Italy

**Approved: 08 January 2013**

**Referee Report:** 08 January 2013

**I have read this submission. I believe that I have an appropriate level of expertise to confirm that it is of an acceptable scientific standard.**

**Competing Interests:** No competing interests were disclosed.



**Riekie de Vet**

EMGO Institute for Health and Care Research, VU University Medical Center, Amsterdam, Netherlands

**Approved: 08 January 2013**

**Referee Report:** 08 January 2013

The authors comment on a article by Stephen Senn who questions Ben Goldacre's assertion in the book "Bad Pharma" that editorial process is not the main cause of publication bias. They present a large amount of evidence from the literature that researchers are the main cause of publication bias by selectively submitting paper for publication.

They provide a lot of convincing information in this short reaction. However, some sentences are very difficult to read. Especially for readers who haven't read the book by Goldacre, the comment by Senn, and some of the other references. I had to reread the first sentence about five times before I understood. The

sentence is especially difficult to read because there is a double negation. Splitting the sentence in the statement of Ben Goldacre and the comment of Stephen Senn may help. Also the last sentence of the comment is difficult to understand, especially when the reader is unaware of the conclusion of reference 23.

The second part of the citation of Goldacre “the prospects for disentangling cause and effect when it comes to publication bias are not great” is difficult to understand and, as far as I can see, does not come back in the comment. Consider whether that part can be omitted, or refer to it again at the end of the comment.

The last section starts with ‘The controlled experiments’. It is not clear to which experiments this refers. To ‘studies – including controlled experiments ‘mentioned in the first section?’

In conclusion, this is a very important and informative comment. However, the readability should be improved in order to make it better understandable for readers who have not read all previous papers.

**I have read this submission. I believe that I have an appropriate level of expertise to confirm that it is of an acceptable scientific standard.**

***Competing Interests:*** No competing interests were disclosed.

---