



## CORRESPONDENCE

# Biased under-reporting of research reflects biased under-submission more than biased editorial rejection [version 1; peer review: 3 approved]

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## 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.

## Keywords

peer review



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## Open Peer Review

Approval Status ✓ ✓ ✓

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Any reports and responses or comments on the article can be found at the end of the article.

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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, with only a small proportion of studies remaining unpublished because of rejection by journals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

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# Open Peer Review

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## Version 1

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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.

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

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

Reviewer Report 08 January 2013

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

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

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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.

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

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

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