

## Finally accepted version

Grosjean, Martin; Guiot, Joel; Yu, Zicheng (2018). Commentary: H. Harde: "Scrutinizing the carbon cycle and CO<sub>2</sub> residence time in the atmosphere. *Global and Planetary Change* 152 (2017), 19–26".

***Global and Planetary Change*, 164, 65–66.**

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## Commentary

H. Harde: "Scrutinizing the carbon cycle and CO<sub>2</sub> residence time in the atmosphere". *Global and Planetary Change* 152 (2017), 19–26.

The publication of the paper by Harde (2017) in *Global and Planetary Change* has concerned many researchers and experts in the field. We, the authors of this Commentary, all being members of the Editorial Board of *Global and Planetary Change* share these concerns and see our personal reputations and the reputation of the journal at risk. The acceptance of this paper has exposed potential weaknesses in the implementation of the peer review system, and quality control mechanisms have failed in this particular case.

Through working with the Publisher and in co-operation with the Elsevier's Experts in Publication Ethics, we have now inspected all relevant documents, including reviews of the initial paper by Harde (2017) and the now-published Comment by Köhler et al. (2017) and the now-rejected Reply by Harde. Here, we would like to report on the processes, especially on the publication of Harde (2017).

Our review revealed the following:

1. During the initial manuscript submission, H. Harde suggested five potential reviewers. Most if not all of them are prominent individuals advocating that currently raising CO<sub>2</sub> concentrations would be natural and not related to human influence. A careful assessment of their CVs, fields of expertise and publications lists leads to the conclusion that none of the five reviewers proposed by Harde can be considered as an expert or authority in carbon cycle, carbon or climate sensitivity or similar fields of research.
2. All five suggested potential reviewers were invited by the Editor to provide formal reviews on the submitted manuscript. Two of them accepted the invitation and suggested 'major revisions' and 'minor revisions', respectively. Both reviewers asked the author for more clarity and better presentation, style and language; none of them raised any concern about the scientific content of the manuscript. We believe that this may have been because the reviewers lacked the impartiality and scientific expertise to provide an adequate science-based review.
3. The referee's comments were sent back to H. Harde. Revisions were made accordingly, the referees were satisfied with the revisions and the Editor accepted the revised manuscript for publication.
4. In common with many other submissions to the journal at the time, none of the other Editors or Editorial Board members of *Global and Planetary Change* were involved in the peer review process by the Editor handling Harde (2017).

After the publication of the article by H. Harde, one formal Comment was received and accepted for publication (Köhler et al., 2017). This Comment was sent out for review to three leading experts in the field. Following peer review, all three supported the fundamental concerns raised by Köhler et al. (2017) and pointed to further gross flaws of the article by Harde (2017). All three experts indicated that they were surprised that the paper by Harde (2017) had been accepted for publication in *Global and Planetary Change*.

The journal editor offered Harde the opportunity for a formal Reply to respond to Köhler et al.'s Comment article. However, after external expert reviews, the Reply by Harde to the Comment by Köhler et al. (2017) was rejected because it did not add any significant information to the argument put forward in the original paper. In reviewing the Reply, the reviewers felt that Harde's argument is "...too simplistic, based on invalid assumptions, ignores a whole body of observational evidence, and cites selectively literature that has long-time been disproved". The experts confirm the suggestion by Köhler et al. (2017) that "...the paper be withdrawn by the author, editor or publisher due to fundamental errors in the understanding of the carbon cycle." Most importantly, the expert reviewers clarified that Harde (2017) does not contribute to a seemingly open scientific debate or provides an alternative view. In contrast, it "...contains many mistakes, misconceptions and omissions and ignores a vast body of scholarly literature on the subject" (quotes from the reviews).

The Elsevier Publication Ethics 'Duties for Editors' state that "*The editor shall select reviewers who have suitable expertise in the relevant field ...*" (<https://www.elsevier.com/publishingethics>), however in the case of the initial submission of Harde (2017), this was not done. Additional factors indicated the potential for there to be flaws with this submission: it is highly unlikely that a single author without any demonstrated scientific track record in this field can 'scrutinize' and disprove the work of dozens or hundreds of experts performed over several decades; work that has been verified with multiple lines of independent evidence and is regularly reviewed in an utmost transparent process such as the Assessment Reports of the IPCC (2013).

Finally, there are lessons to be learnt to keep high standards for *Global and Planetary Change*. We advocate for much more transparency in the review process, Editorial decision and publication process (e.g. publish the name of the handling Editor as other Elsevier journals do; allow for the possibility to retract accepted papers in justified cases) and we encourage a much better and formal involvement of the Members of the Editorial Board. The Editorial Board is more than decoration; it is an exclusive pool of highly qualified experts who are committed to support the entire review process and provide additional expert opinions in the case of conflicting reviews or doubt.

### *References*

- Harde, H., 2017. Scrutinizing the carbon cycle and CO<sub>2</sub> residence time in the atmosphere. *Global and Planetary Change* 152, 19–26.
- IPCC, 2013: Climate Change 2013: The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change [Stocker, T.F., D. Qin, G.-K. Plattner, M. Tignor, S.K. Allen, J. Boschung, A. Nauels, Y. Xia, V. Bex and P.M. Midgley (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA, 1535 pp.
- Köhler, Peter, Hauck, Judith, Völker, Christoph, Wolf-Gladrow, Dieter A., Butzin, Martin, Halpern, Joshua B., Rice, Ken, Zeebe, Richard E., Comment on "Scrutinizing the carbon cycle and CO<sub>2</sub> residence time in the atmosphere" by H. Harde, *Global and Planetary Change* (2017), doi:10.1016/j.gloplacha.2017.09.015.

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### **Addendum from the Editors and Publisher of *Global and Planetary Change***

The article 'Scrutinizing the carbon cycle and CO<sub>2</sub> residence time in the atmosphere' by Hermann Harde which was published in *Global and Planetary Change* at the beginning of 2017 attracted considerable attention due to its flawed content. Three members of the editorial board (Martin Grosjean, Joel Guiot and Zicheng Yu,) expressed their concern at the publication of this paper and, with the agreement of the editors and publisher, undertook an independent investigation to determine the reasons why the paper was accepted for publication. The results of that investigation are presented earlier in this document. The Editors and Publisher thank the investigative team for their efforts and support of the journal, and apologise for the lapses made in the peer review process.

Peer review is regarded as the gold standard of quality assurance for scholarly publishing. As long as established procedures are followed and good choices are made, especially with due care and attention taken to deal with failures or limitations that may arise along the way, it should not fail. Occasional failures can happen however; in this case the author selected an editor who was not an expert in the field and that editor invited the reviewers suggested by the author without checking their credentials – the editor was therefore not in a position to perform a sufficiently critical evaluation of the manuscript. The acceptance of the Harde paper and the consequent investigation therefore serve as a reminder that constant vigilance is required to by those who use the peer review system to ensure that it delivers consistently high quality results.

After much consideration by the editors at the time of publication, it was felt that the paper should not be retracted, but rather let it remain to stimulate further discussion about such a highly charged and contentious topic. It was also felt that although the implementation of the peer review of this paper had failed, no unethical action has been found in its publication.

The investigation highlighted one of the important functions of an editorial board - to provide the checks and balances required when difficult situations arise. It also provided an opportunity for the editors and publisher to reflect on how the peer review process is undertaken by *Global and Planetary Change* and we have taken proactive steps to ensure a more robust approach to peer review in the future. In order to lessen the possibility of introducing bias into the peer review process, authors are no longer able to suggest the names of possible reviewers for their manuscript. To give more credit to the Editors for their work and increase a sense of accountability, published manuscripts will additionally provide the name of the editor who made the final decision. New editors have been brought on board to bring new blood into the system, but critically to ensure the required subject specific knowledge base in this area is met.

As a scientific journal, *Global and Planetary Change* serves a community where readers and authors hold a wide variety of sometimes very differing or controversial views and should remain scientifically open and neutral. We try to provide the opportunity for all scientists to express their views, even though they might not be the majority and, in a fair and balanced way, stimulate further debate provided that the underlying science is sound and correct. Editors will continue to judge whether a manuscript should be accepted for publication in the journal based on the objective feedback of the peer review process

provided by carefully selected experts in the field, and would like to reassure the community that they will exercise the highest standards and vigilance to ensure that GPC remains a forum of robust, trustworthy science and constructive scientific debate.