

Interactive comment on “Reconciling single chamber Mg/Ca with whole test $\delta^{18}\text{O}$ in surface to deep dwelling planktonic foraminifera from the Mozambique Channel” by J. Steinhardt et al.

Anonymous Referee #2

Received and published: 2 February 2015

This paper contains a significant amount of geochemical data ($\text{d}18\text{O}$, $\text{d}13\text{C}$, and Mg/Ca) generated on four species of planktic foraminifera. The authors should be commended for this.

1) The paper badly needs editing. Many paragraphs lack cohesiveness and lack a topic sentence making a clear point followed by supporting observations or arguments. There are also missing words, typos, etc. I highlighted some of these but not all. It would be easier to read and to follow the arguments made if data were summarized in tables within the text instead of sentences containing multiple means, standard errors, etc.

C8476

2) In general, if the data generated are from individual foraminifera, I think analytically sound "outliers" should not be excluded since they reflect the actual variability within the population. Whenever possible show all the data in figures; if it's necessary to summarize, show the range and quartiles (including outliers).

3) In several places, the references cited are not appropriate and/or do not say what the sentence claims they say. I highlighted these where I saw them.

4) It is not clear why the Kim and O'Neill paleotemperature equation was used if it does not generate temperatures reflective of actual conditions (section 5.1). This discrepancy was noted in section 5.1 but the remainder of the paper still uses K & O'N. If the different paleotemp equations give such different results it's hard to have confidence in the data interpretation.

5) See other comments within attached pdf.

I would be willing to review a revised version after significant editing, response to comments within attached pdf, and a careful check of whether the references are appropriate.

Please also note the supplement to this comment:

<http://www.biogeosciences-discuss.net/11/C8476/2015/bgd-11-C8476-2015-supplement.pdf>

Interactive comment on Biogeosciences Discuss., 11, 17255, 2014.

C8477