

## Comment on bg-2021-67

Anonymous Referee #1

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Referee comment on "Test-size evolution of the planktonic foraminifer *Globorotalia menardii* in the eastern tropical Atlantic since the Late Miocene" by Thore Friesenhagen, Biogeosciences Discuss., <https://doi.org/10.5194/bg-2021-67-RC1>, 2021

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Review of Friesenhagen **Test-Size Evolution of the planktonic Foraminifera *Globorotalia menardii* in the Eastern Tropical Atlantic since the Late Miocene**, submitted to *Biogeosciences*. I believe this manuscript has the potential to contribute to the understanding of the test-size evolution of the *menardii* lineage. It provides a new, supported hypothesis to the previously studied giant *menardii* form observed in other locations, that can also be further tested. The data is produced using both reputable and novel methods, allowing for this hypothesis to be fully evaluated. The author is clearly well read on previous studies and results regarding the topic, and the manuscript is well written and concise. However, corrections need to be made to the manuscript; some sentences can be rewritten to make it easier to read and a final proof reading is needed. I have made some suggestions as follows:

L19 – remove comma after (ETAO)

L35 – remove “as” before “for example” and add comma after

L37-39 – “One interesting case in the long-term test-size evolution of PF was observed by Knappertsbusch (2007; 2016), when he investigated the test-size evolution of the G. *menardii*–G. *limbata*–G. *multicamerata* lineage since the late Miocene.” – is hard to read. Suggestion: **“Knappertsbusch (2007; 2016) observed interesting long-term test-size evolution of PF in studies of the G. *menardii*–G. *limbata*–G. *multicamerata* lineage from the late Miocene.”**

L48 – change watermasses to water masses (check throughout manuscript); separate to separates

L51 – The NHG

L58 – after **the** onset

L59 – ommitt comma after investigates

L63 – reword: it seeks new insight into the underlying... ; In this context, [add comma}

L64 – allow **us** to

L65 – should be: Here, the (change . to ,)

Figure 1.: check latitude numbers: looks like O not zero on some of the numbers

L75 – change to “waters, the known habitat for”...

L77-78 – Reword: The core location is outside, or within the peripheral, of the NW African upwelling system (Fig. 1) and therefore, only marginally affected for the investigated time interval of the last 8 Ma (Weaver and Raymo, 1989). Thus, there is a relatively long-term water-column stability on the geological timescale at ODP 667.

**Suggestion for section 2.2.:** omit table 1 – fig. 2 shows the same information and is easier to read. Write how many samples, and what resolution at beginning of section.

L109 & 111 – weighted should be weighed

L115 – P.A.S.I srl should be written in full for first use.

L130 – State developer for AMOR software

L163-165 – Sentence looks incomplete/editing error – double check bold section:  
“Knappertsbusch (2016) refers to the disappearance of *G. limbata* as a possible pseudo

extinction because of the occurrence of singular specimens of menardiforms with seven chambers in the last whorl after **2.39 Ma. with seven chambers are accounted as *G. limbata*, a form which became extinct during the early Pleistocene.**

I think it would also be useful to mention the difference between *limbata* and *menardii* in the first paragraph, alongside the *multicamerata* differences.

L175 – change to “gridded files”: obtained by plotting...”

L208 – change to: “This is the simplest analysis for...”

L210 – omit: “as will be demonstrated in the following section.”

L224 – On average,

L285 – this is the first time *G. menardii cultrata* is mentioned and it is without context. Why is this important to note?

L284 – this information may be better in the figure caption

L323 – change to: “the giant sinistral specimens ( $\partial Y = >1000 \mu\text{m}$ ) appeared 0.5 Myr earlier, at 2.58 Ma, in the eastern tropical Pacific Ocean Site 503 than in the Atlantic Ocean”

L326 – change striking to substantial

L344 – omit rather

L357 – possible correction: South Atlantic rings, they may have drifted closer to the coast of SW Africa.

L367 – change to: which possibly resulted in unfavourable

L390 – within short time periods.

L391 – omit classic case of fast

L394 – italicise *plesio*

I think it is safe to remove examples of other microfossils as it is irrelevant and you have enough examples with foraminifera

L403 – change only occur between 2.3 Ma ...; omit “and not earlier or later?”

L414 – correct reference format Author (date)

L816 – not sure if (ä) is meant to be there