

Hist. Geo Space. Sci. Discuss., author comment AC1
<https://doi.org/10.5194/hgss-2021-21-AC1>, 2022
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Reply on RC1

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Author comment on "Cyclicity in Earth sciences, quo vadis? Essay on cycle concepts in geological thinking and their historical influence on stratigraphic practices" by Daniel Galvão Carnier Fragoso et al., Hist. Geo Space. Sci. Discuss.,
<https://doi.org/10.5194/hgss-2021-21-AC1>, 2022

My co-authors and I would like to acknowledge the relevant comments made by Prof. Andrew D. Miall. Our objective with this manuscript was to highlight, slightly and pleasantly, throughout a historical narrative, the importance of different conceptions of cyclicity in the study of geological processes, leading the reader to understand the influence of these conceptions in many aspects of stratigraphy.

We agree that there are considerable differences in the way cycles were stated and understanding how different authors used these definitions is critical. The effort to bring all these approaches together was precisely to expose how the most diverse authors treated the subject. Broad conceptions of cyclicity that encompass any spectrum of repetitions are often published in the geological literature. In an eventual final version of this manuscript, we will highlight such distinctions, especially regarding strict cyclicity (periodicity) and episodicity.

We emphasize, however, that some considerations on the topic have already been presented to readers. For example, in the introduction (Item 1, lines 60-63), we say that some concepts of cyclicity are used freely, without defining an order or periodicity, as is the case with the "rock cycle". This critical assumption of geoscience is nothing more than a mental formulation that helps us understand a very complex process in a didactic way. Thus, we hope that readers will realize that geological assumptions can use cyclic conceptions to establish efficient cognitions and connections. We also emphasize episodic and cyclic sedimentation aspects in the discussion of auto and allogenic (Item 3.1, lines 484 - 510).

The incorporation of reflections and counterpoints proposed in the literature by Zeller (1964) and Dott (1992), for example, can enrich the discussion, and will be opportune in a future version of the manuscript. However, as Prof. Miall commented, truly cyclical processes occur in the Earth's system and are strongly linked to astronomical forcing. These processes are extensively presented throughout the manuscript, from its origins to the current state of the art (items 2.1 and 3.4).

We conclude that we agree with the points raised and reinforcing them will be our objective in searching for an improved final version for HGSS readers.

Dott, R. H., Jr., An introduction to the ups and downs of eustasy, in: Eustasy: the historical ups and downs of a major geological concept, edited by: Dott, R. H., Jr., Geological Society of America Memoir 180, pp. 1-16. 1992

Zeller, E.J., Cycles and psychology, in: Symposium on cyclic sedimentation, 169, edited by: D.F. Merriam, Kansas Geological Survey, United States of America, 631-636. 1964