

Review of: "The Anthropocene Borderline Problems"

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Potential competing interests: No potential competing interests to declare.

This paper introduces readers interested in the current climate change produced by anthropogenic reasons to a challenging question, when should we consider the starting point of this effect on the environment by human activities? Merging geological evidence and early societal organisations (or proto-historical societies), the author distinguishes between three levels of classification: Epoch - Event - Episode. Is the Anthropocene a new episode within the Holocene? or a nouvel epoch following the Holocene?

In his inductive reasoning, the author elevates the Earth Sciences as having an epistemic status to solve the causes of societal action over the environment.

This introductory text only allows me to introduce myself in this review, starting first with the introduction.

INTRODUCTION: I suggest the author first (1) introduce "the C/S-proposal" to the readers, even if it is further down explained.

2) Please merge the text "... and the International Chronographic Developing the GTS is a long-enduring process undertaken by geological stratigraphers organised in the ICS, a constituent body of the IUGS, which regularly updates the GTS." from chapter 2.2 after the phrase "...Union of Commission on Stratigraphy (ICS), a constituent body of the International Union of Geological Sciences (IUGS)" from the Introduction chapter.

3) Please, be aware that the year 1950 AC is crucial. It is the starting point of the Atomic "Era". Those who use carbon-14 for dating the geological record from the last 40 ka know the enrichment of radioactive isotopes within the atmosphere produced by the nuclear tests during the cold war. When using ¹⁴C for dating, 1950 AC is defined as "the present", differentiating between BP years (before present) or years "post Bomb" when the dated sample is younger than 1950 AC. Many other dating methods use man-induced radioactivity, like Tritium for groundwater or Iodine and Cesium radioactive isotopes, to evaluate current erosion. This anthropogenic fingerprint will be measurable for the next generations of humans until the next 50 ka within the geological record. Some mention of the start of the "Atomic Era" should be included in this paper; for me, as a Geologist, this is the core of the Anthropocene. If the author agrees, he can introduce this evidence after the phrase "...the mid-twentieth century that provides a base for a geological epoch, the Anthropocene".

4) I see footnote one after "...this shift of line of reasoning" and footnote three but not footnote two in between. Please check.

5) ... minor thing, put double "(" before "Steffen et al. 2015" or remove one ")" after the citation of "Lade et al. 2020".

6) Renn's theory should be introduced before applying it; more than a footnote is required. The author can do the last just before the end of the introduction or in a new enthusiastic chapter named "State of the Art". In such chapter (new), you can introduce Renn's theory, the Epoch definition, the Episode definition and so on.

MATERIALS AND METHODS

- 1) The GTS (Geological Time Scale) should be defined before. Perhaps in a "State of the art" chapter. The same applies to ICS and IUGS, explained in Chapter 2.2 and should be introduced earlier.
- 2) The contemporary World Earth Nexus should be introduced before—the same as above.

EVOLUTION OF KNOWLEDGE

- 1) The author shouldn't use the same word to define Anthropocene in the paragraph ".. the concept of an Anthropocene develops into further borderline problems when shared with others communities. The enquiry presented in this study concerns which concept of "MAN MADE / MAN INDUCED / ..." global change is "a practical" borderline problem and might evolve into "knowledge transformation" for the Anthropocene.
- 2) Why merge societal action and geological epoch or event in the next paragraph? "Hence, an enquiry of this essay is: which concept of anthropogenic global change (the Anthropocene), epoch or event, leads to an economy of knowledge that renders the idea of an Anthropocene as a shared knowledge of our societies having the potential to trigger societal actions?" Do you need to explain what?.

THE C/S-PROPOSAL AND THE GTS

- 1) Remember that the AWG vote but the anthropogenic signal was already defined in 1950, the "post-bomb" era. What was the nature of the stratigraphical signal voted in 2019? Can the author merge both signals?

OBSERVING GEO-SOCIETAL FEATURES (I)

Please, place the first sentence within Chapter 1. It should be introduced before, from "Contemporary ..." until "...the World-Earth Nexus".

GEOSCIENTIFIC BORDERLINE PROBLEMS

Please, review the first sentence within this chapter because it repeats in previous chapters. If you open a new chapter about the State of the Art, you can group all those concepts avoiding repeating them.

COMPARING BORDERLINE PROBLEMS

The same as above, the first paragraph should be placed in a State of the Art chapter.

REDESIGNING THE ANTHROPOCENE BORDERLINE PROBLEM

Some paragraphs are opinions of the author, which is alright, but it should be warned. For example, "Conceivably, the Anthropocene Episode approach is a good compromise within geosciences" and "Therefore, for the purpose of generating transformation knowledge, any geological meaning should come second to the philosophical meaning." or "the parameters relates geological and historical time, which mulatis mutandis is what any notion of an Anthropocene conveys." by putting something before like "It is easily conceivably for those who think that ..." or " For those of them who think that any geological meaning is after the philosophical meaning" or even "Those who think that the Anthropocene convey a better notion related to the historical and geological parameters, because". It could also be included in the conclusions.