Review of: "The Anthropocene Borderline Problems"

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Martin Bohle's article proposes a very interesting approach, drawing attention to how a theme (the proposal of a new division, the Anthropocene, in the geological time scale) that initially refers to a formal discussion of a specific discipline (the geology) gains a much greater reach, as it was incorporated and even became an imminent theme of society. The article discusses the theme, highlighting and debating how the consequences of choices come to have much greater consequences, and how this evidence of the discussion can or should impact the formal discussion process of the geological discipline. The text presents a clear wording, and a logical structure and organization, which facilitate the reader to follow the reasoning and arguments of the author. The text strongly emphasizes how the different options in view (considering the Anthropocene as an epoch or an event) have different social implications, and details these implications and the weight they may have in the debate. I think that the approach that the author proposes is quite rich, calling the question of how an internal debate of the academic relates to the repercussion that the terms gestated in her gained outside.

In several parts of the text, the author places as an important element of his line of argument the idea that the Holocene would be a geological epoch marked by climatic stability, as opposed to the previous epoch, the Pleistocene. As a geologist, I think the central suggestion I can make to the article is that it would benefit from incorporating more deeply into its discussion that the climatic stability attributed to the Holocene is, for many, relative. This relativity is centrally related to the resistance of a large part of the geological community to accept the Anthropocene as a new epoch. Although the whole of the Holocene is characterized by a constant - the softening of glacial conditions from the last glacial maximum - the ways in which this dynamic manifested itself over time is quite diverse, and regionally varied. Among other points, it could be remembered / approached by the article that the three subdivisions of the Holocene (Early Holocene - 11.5 to 8 ka,

Middle Holocene - 8 ka to 4 ka and Late Holocene - last 4 ka) usually present climate patterns quite different from each other, including alternating arid and humid periods. In South America, for example, paleoclimatic studies point to events of generalized aridity throughout the Middle Holocene, which would have impacted even a sudden decrease in the human population living there. Alternation between wet and dry phases in the Early Holocene intense enough to take to regional changes in the predominance of grassy to forest vegetation, and to changes in rivers dynamics. The boundary between Middle Holocene and Late Holocene is also characterized by a peak in sea level elevation, which then started to reach positions 5 meters higher than the current ones. Many geologists do not deny the impacts of current anthropogenic changes and the need to take actions to mitigate them, but remember that they would be of smaller magnitudes than

those that mark the limit between the Holocene and the previous epoch, the Pleistocene, and even many have doubts whether the current changes would be of similar magnitude to those that mark the very subdivisions of the Holocene. Hence the insistence of this group of researchers on understanding the Anthropocene as an event, since the magnitudes of its transformations, although very important for current societies, would be, when inserted into the set of Earth's trajectory, smaller than other geological transformations prior to contemporary industrial society used as markers between geological epochs. . Among these previous transformations greater than the antropogenic would be included those that mark the limits between the Holocene and the previous geological epoch, and even, for some, those that mark the subdivisions of the Holocene. Based on these arguments, many justify the preference for the Anthropocene as an event, an option that at the same time does not deny its importance, but which would place it in an order of magnitude compatible with that of natural transformations used as markers of geological time.

The author, naturally, does not need to agree with these arguments, but I believe that the article - and the public - would be greatly enriched if he proposed to dialogue more with these types of reasoning. To the extent, above all, that the author's discussion is quite dense, so that I am already

curious to know the ways in which he would approach the above themes, which can contribute to deepen the discussion he raised. In this way, I recommend major revisions in the text, suggesting that the author detail more the concept of climate stability that he attributes to the Holocene, and how the internal climatic fluctuations of the Holocene would relate to his line of argument. I think that the material presented is quite rich, and can be deepened even more, valuing and enhancing the article's contribution to the topic under discussion.