

Review of: "The Anthropocene Borderline Problems"

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This paper sets out to weigh the respective merits of conceptualizations of the Anthropocene as epoch, event and episode. The author should be commended for taking on this task, although I do not think he reaches the correct conclusions, for reasons outlined below.

The author's main criterion in evaluating different conceptualizations of the Anthropocene is to ask which has better potential to activate knowledge for societal action – i.e. for (i) spreading knowledge across social communities, (ii) eventual societal action, and (iii) influencing governance, culture, and institutions. These considerations are of course very important. But what is missing is evaluation of concepts in relation to supporting material evidence (which for geologists and archaeologists and soil scientists is constituted largely by rocks and soils in the ground). In addition to asking how useful concepts might be relative to each other, it should surely also be asked - how well grounded are these ideas in material evidence, and in particular in the physical evidence of strata? Science is hopefully not becoming part that Trumpian and Johnsonian world where different 'truths' are evaluated and selected solely on the basis of utility in bringing about desired effects. For all its supposed usefulness in activating societal action, pronouncement of a new geological epoch with a precise start in 1950 (or any other year that might be specified) would ring very hollow if not based on strong stratigraphic evidence for the appropriateness of whatever date is chosen.

While appreciating the author's earnest attempts to be even-handed, neutrality seems to be ultimately forsaken in favour of the Anthropocene as epoch (or in the last paragraph, a combination of epoch and episode). This is done on the basis of a misunderstanding of the Anthropocene as event, characterised as implying lack of recognition of the magnitude of current Earth system transformations, and framed by the author as "*business as usual*" (compared to "*no business as usual any longer because a stage-shift of the Earth System occurred*" in the Anthropocene epoch argument). But the logic of the unfolding event has not been fully grasped by the author and hence is not being followed. Definitions of the Anthropocene as event make it clear that transformations of the Earth system induced by human activities have effects that aggregate and compound, thus intensifying the magnitude of change through time. As the Great Acceleration is the most recent intensification of the unfolding Anthropocene Event, it is of course inevitably of a much greater order than earlier iterations of the ongoing human-induced transformation of Earth.

The author may be right to say that the Great Acceleration is not singled out by event proponents, but that is because it is regarded as an acceleration and enlargement of processes that were already well in motion before 1950, the incipient trends and trajectories and roots of which can be traced far back into the past. It is part of the broader intensifying, compounding, emergent and unfolding Anthropocene Event, which over thousands of years has vastly outgrown its small

beginnings to take the form of the Great Acceleration in recent times. This does not in any way deny or diminish the magnitude of what is happening today. Quite the opposite. (Nor does it imply that the Great Acceleration is somehow the 'final stroke', as the Anthropogenic Modification Episode would have it, since the event and its burgeoning effects continue to unfold).

I would like to see the author take this point on board. We are not dealing simply with an Early Anthropocene argument here. It is really important to fully grasp the logic of the Anthropocene Event in terms of its intensifying and burgeoning effects (with the Great Acceleration fully acknowledged as part of the larger diachronous and unfolding event) when evaluating it against the epoch and episode arguments, as well as – most importantly – against the stratigraphic and other material evidence.

This might save the author from going down the unnecessary rabbit-hole of trying to separate the geological past from the geological present. Such an unfortunate move might well be a logical outcome of the epoch argument, which in dividing the Holocene from the proposed new epoch would effectively make exactly that conceptual separation, but there is no physical stratigraphic basis for this divide.

My main suggestion would be to retain the neutrality of the paper throughout, right to the end. Since the author is not attempting to evaluate the different concepts against the most important touchstone of all – the material evidence – it would be wise to remain even-handed in balancing the respective merits of epoch, episode and event conceptualizations of the Anthropocene, and not to favour one or another in this analysis. Although some may want to freeze the concept of the Anthropocene in the form that Paul Crutzen outlined it over 20 years ago, it is actually an evolving and developing concept, which is still to be properly matched to the physical stratigraphic record (and adjusted to take account of it). I therefore suggest leaving the question of which is to be preferred open.

If that was done, the discussion would prove to be a most valuable one for all those working on the Anthropocene (rather than just taken to bolster the case of epoch proponents). I found this a well-written and thoughtful paper, which makes a good start at thinking through some very important issues. Hope my comments, though critical in parts, turn out to be useful.