

Peer Review Report

Review Report on Crafting Attributes of a Geological Now

Original Research, Earth Sci. Syst. Soc.

Reviewer: Hannes Bergthaller

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EVALUATION

Q 1 Please summarize the main findings of the study.

This article surveys recent debates over the Anthropocene concept, contrasting approaches which cast it as an event (“AVC”) with the currently prevailing view of it as a new geological epoch (“APC”). Both camps acknowledge the reality of planetary-scale anthropogenic change (PSAC). However, whereas advocates of APC point to the suddenness of this change, proponents of AVC (somewhat counter-intuitively, given the ordinary as well as philosophical usage of the word “event”) emphasize the gradual, drawn-out character of the Anthropocene “event,” which to them merely represents the culmination point of a long history of anthropogenic changes of the Earth. The author then analyses these controversies using Jürgen Renn’s theory of the “evolution of knowledge” and, more specifically, his concepts of “borderline problems” and an “economy of knowledge”: PSAC constitutes a borderline problem insofar as it cannot be adequately explained with the methodological toolkit of any single discipline. It thus disturbs the established distribution of labor between the disciplines (I was somewhat reminded here of Latour’s notion of “matters of concern”). AVC and APC tackle this borderline in different ways, with each approach mobilizing a distinctive “economy of knowledge” – that is to say, a set of scientific communities, types of evidence, and – most importantly for the author’s purposes – potential for political action. It is on the basis of these latter considerations that the author comes down in favor of APC, because it presents a clearer challenge to “business as usual.” However, both approaches have advantages and drawbacks, and the author suggests that geologists, rather than forcing a choice between AVC and APC, should instead focus their efforts on defining a “geological now.”

Q 2 Please highlight the limitations and strengths.

I found the author’s discussion of the controversies over the Anthropocene to be tremendously informative; his application of Renn’s “evolution of knowledge” approach is genuinely helpful in making sense of the often confusing disciplinary turf wars which have unfolded over the concept, and in tracing their larger dynamic. Having said that, it is still difficult not to get lost in the details. If I am not mistaken, the author’s fundamental point is that geological categories inevitably contribute to the way in which society at large “frames” PSAC, and that the idea that scientists studying PSAC could keep their methodology “clean” of socio-political considerations – which is usually advanced in favor of AVC – is therefore misguided. This is convincingly argued, but the strongest formulation of this point only comes towards the end of the paper (ll. 722–24). Along the way, the author suggests that APC is preferable because it is more likely to generate political action – but it seems exceedingly unlikely that those who object to the “politicization” of the Anthropocene concept will be swayed by this, unless they first accept the more fundamental point that an apolitical conception of it is impossible. It should be possible to remedy this simply by moving around some passages and making minor changes in emphasis.

The proposal to have geologists speak of a “geological now,” with which the essay concludes, remained to my mind somewhat fuzzy – rather than an alternative to the APC/AVC distinction, it appeared to me to be more a kind of semantic evasion that mostly just obscures the need to choose between them. If this an unfair assessment, the author should consider expanding this section of the paper to clarify how the “geological now” is distinct from either APC and AVC.

Finally, there are a number of punctuation errors and minor linguistic infelicities – for example, in line 524 the author writes that “climate science gained part of an effective economy of knowledge,” which violates common usage.

Q 3 Please comment on the methods, results and data interpretation. If there are any objective errors, or if the conclusions are not supported, you should detail your concerns.

The methodological innovation of this piece is the application of Juergen Renn's theory of "knowledge evolution" to the analysis of the controversies over the Anthropocene. This is carried out in a convincing and consistent fashion. I did not find any objective errors.

Q 4 Check List

Is the English language of sufficient quality?

Yes.

Is the quality of the figures and tables satisfactory?

Not Applicable.

Does the reference list cover the relevant literature adequately and in an unbiased manner?

Yes.

Are the statistical methods valid and correctly applied? (e.g. sample size, choice of test)

Not Applicable.

If relevant, are the methods sufficiently documented to allow replication studies?

Yes.

Are the data underlying the study available in either the article, supplement, or deposited in a repository? (Sequence/expression data, protein/molecule characterizations, annotations, and taxonomy data are required to be deposited in public repositories prior to publication)

Not Applicable.

Does the study adhere to ethical standards including ethics committee approval and consent procedure?

Not Applicable.

If relevant, have standard biosecurity and institutional safety procedures been adhered to?

No answer given.

Q 5 Please provide your detailed review report to the editor and authors (including any comments on the Q4 Check List):

This article surveys recent debates over the Anthropocene concept, contrasting approaches which cast it as an event ("AVC") with the currently prevailing view of it as a new geological epoch ("APC"). Both camps acknowledge the reality of planetary-scale anthropogenic change (PSAC). However, whereas advocates of APC point to the suddenness of this change, proponents of AVC (somewhat counter-intuitively, given the ordinary as well as philosophical usage of the word "event") emphasize the gradual, drawn-out character of the Anthropocene "event," which to them merely represents the culmination point of a long history of anthropogenic changes of the Earth. The author then analyses these controversies using Jürgen Renn's theory of the "evolution of knowledge" and, more specifically, his concepts of "borderline problems" and an "economy of knowledge": PSAC constitutes a borderline problem insofar as it cannot be adequately explained with the methodological toolkit of any single discipline. It thus disturbs the established distribution of labor between the disciplines (I was somewhat reminded here of Latour's notion of "matters of concern"). AVC and APC tackle this borderline in different ways, with each approach mobilizing a distinctive "economy of knowledge" – that is to say, a set of scientific communities, types of evidence, and – most importantly for the author's purposes – potential for political action. It is on the basis of these latter considerations that the author comes down in favor of APC, because it presents a clearer challenge to "business as usual." However, both approaches have advantages and drawbacks, and the author suggests that geologists, rather than forcing a choice between AVC and APC, should instead focus their efforts on defining a "geological now."

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Finally, there are a number of punctuation errors and minor linguistic infelicities - for example, in line 524 the author writes that "climate science gained part of an effective economy of knowledge," which violates common usage. Some further language editing is strongly advised.

QUALITY ASSESSMENT

Q 6	Originality	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Q 7	Rigor	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Q 8	Significance to the field	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Q 9	Interest to a general audience	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Q 10	Quality of the writing	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q 11	Overall quality of the study	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>