

Interactive comment on “Review article: Towards a context-driven research: a state-of-the-art review of resilience research on climate change” by Ringo Ossewaarde et al.

Anonymous Referee #1

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This paper presents a discussion on different ontological and epistemological strands underpinning resilience research. It aims to shed light on the consequences of taking naturalist approach as opposed to a constructivist approach to studying social-ecological resilience by reviewing the existing literature on the topic. It then proposes to define a research agenda for future resilience research, focusing on the particular concepts of adaptive and transformative change.

Overall, this paper is an interesting addition to the existing literature as it aims to reflect on the assumptions driving resilience researchers and thereby improve future conceptualisation of the research. Furthermore, its structure is logical and the authors

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present a gradual approach to presenting the core concepts of the paper, that is naturalist and constructivist resilience research approaches, and adaptive and transformative change. However, I found several significant issues with the paper which will need to be tackled before publication. These concerns mostly the first chapters, since I generally find the last one on the proposed research agenda clear.

First, I wonder if the scope of the paper fits the journal. The paper focuses on the philosophical underpinning of resilience research, rather than the more natural science and policy-focused nature of NHESS. One may argue that the paper could be of interest to natural scientists working on resilience to climate change hazards, but the article is difficult to follow (see comments below), except the last section on the proposed research agenda.

Second, the writing style makes the article very difficult to follow. This is probably because the paper uses long sentences and many different terms, often using concepts and complex terms to explain already complex terms. To take an example, in Section 2.1. which aims to explain naturalist resilience, references are made to “logical positivism”, “cybernetic”, “complexity theoretic orientation” without defining these additional concepts. It makes it difficult for the reader to capture the main conveyed idea. Many terms would need to be better explained, fewer ideas perhaps presented and certainly more systematically illustrated using concrete examples. A thorough check on the grammar is also necessary. I take two examples, but there are others throughout the text:

- Line 206-207 “Ecological and societal catastrophes. . . manifest such no-liberalised resilience that is divorced from concerns of justice”. I do not understand this sentence, which might be due to a grammatical error. - Line 389-392 “transformational adaptation means. . .via stakeholder participation” does not explain anything to me: what is an “energy establishment”? what does it mean to transform an “establishment” into an “agent of change”? In what ways is “stakeholder participation” contributing to a transformational change, since this is already practiced in more incremental, adaptive

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change?

Third, the paper could be more clearly framed from the outset. For example, I only realised that the authors focus on resilience research carried out in the social sciences after the introduction. It would also be useful to clearly focus on one issue (e.g. resilience to climate change) which the authors appear to suggest sometime later in the article.

Fourth, the paper focuses very much on the very early SES research (by Holling etc) or on very recent literature (from 2014-2015). While I appreciate that the focus of the review article is on recent debates, I would recommend a more thorough presentation of how the concept of resilience was debated in the 1990s and especially in the 2000s in the environmental sustainability field and the growing field of research on global environmental change. Significant debate for example occurred in the 2000s to define resilience, as opposed to the then prominent concept of vulnerability, e.g. researchers such as Gallopín, Duit, Brooks, Dieaz, Adger, Smit. They will shed further light on the origin of the idea that resilience transposed to society is a neoliberal concept that puts more emphasis on individual responsibility and ignore the social and political factors leading to inequity in face of climate hazards. This historical background does not need to be long, but it should at least acknowledge this literature, perhaps using it in Section 2 when it sets out to explore the emergence of the concept of resilience.

Fifth, and related to the above comment, given the key concepts of the paper focusing on resilience and adaptive and transformative change, I am curious as to why the concept of adaptive capacity was not, at least, acknowledged, if not used to inform the discussion. It seems to be a component of resilience thinking, which has provided an analytical framework for much governance research on global environmental change. How is that strand of literature linked to the growing interest in adaptive and transformative change? In what ways do the later concepts offer fresh and new insights?

Sixth, the particular focus on ABM and AI are welcome and interesting, but they need

to be better justified. Why are these examples of tools used to research resilience mentioned more than others? More generally, the discussions on Section 3 could provide more concrete examples of the methodological implications of taking one approach or another.

Finally, the readability of the article could be improved with the use of figures and tables to lighten up the text, for example to present definitions or how the core concepts of the paper relate to each other.

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