

Interactive comment on “Resilience and disaster risk reduction: an etymological journey” by D. E. Alexander

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Overall, this paper is excellent. It provides exactly the sort of historical and critical analysis which, sadly, is too often lacking in this field regarding terminology. There is no doubt that this paper is relevant to NHES and should be published. Certainly, there is plenty to disagree with—for instance, I am not convinced by many aspects of figures 6 and 7—but it is difficult for a reviewer to demand changes or to criticise simply because of disagreements. Instead, a paper which provokes, which is based on solid argumentation, which is embedded in the literature, and which presents original material should be published. This paper matches these criteria.

The first paragraph and section 1, in particular, are excellent. The objectives are clear,

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appropriate, and needed—and the paper then achieves those objectives. Similarly, the conclusions are insightful and nicely summarise the paper. The paper also makes numerous important points to be retained, with a handful of examples being: 1. Page 7, lines 7-9, "One legacy of ecology is an enduring emphasis on system stability as a hallmark of resilience. Perhaps questioning that ought to be a goal of future theoretical work." 2. Page 11, lines 3-5, "it is not only whether equilibrium exists or is the final goal of the system, but whether it is a useful concept at all." 3. Page 12, lines 18-20, "With regard to research on disasters and crises, the overlap between the two disciplines has not always produced harmonious views of the same phenomena."

Nonetheless, I have some suggestions for modifications, all of which come under the category of minor changes. The paper's inherent approach, structure, material, and arguments should remain intact when the author performs the changes. My comments are:

1. A review paper can never cover all literature. The author has done well in referencing key and important material. Nonetheless, if feasible, I would advise adding the following citations which, to me, are particularly important: (a) Timmerman, Peter. 1981. Vulnerability. Resilience and the collapse of society: A review of models and possible climatic applications. Environmental Monograph No. 1. Toronto: Institute for Environmental Studies, University of Toronto, available at <http://www.ilankelman.org/miscellany/Timmerman1981.pdf> (b) Manyena, Siambabala Bernard. 2006. The Concept of Resilience Revisited. *Disasters* 30, 433-50. (c) Gailard, Jean-Christophe. 2007. Resilience of Traditional Societies in Facing Natural Hazards. *Disaster Prevention and Management* 16, 522-44.

2. Section 2 is interesting and important. It should, though, make the point that the word "resilience" was also used in ecology long before Holling. No one should dispute Holling's novel and needed contributions regarding ecological resilience in the 1970s. But it is not just the myth that Holling coined the term, as appropriately debunked by this paper; it is also the myth that he was the first to use it in ecology. In

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fact, pre-Holling resilience work in ecology is implied later in stating "It is clear that the anthropologists received the idea from the ecologists (Lasker, 1969, p. 1486)" (page 12, lines 10-11); i.e. resilience in ecology was used before 1970. The beginning of section 3 could also acknowledge the pre-Holling pedigree of resilience in ecology. Similarly, the term was used in geography and sociology before the given reference of Adger, 2000 (page 7, line 6) and the same mistake needs to be corrected on page 12, lines 14-15. For example, "resilient communities" appears in the 1999 paper <http://www.sciencedirect.com/science/article/pii/S1464286799000029> and other earlier works. Note that these modifications should not change the fundamental point section 2 which is to highlight the long and diverse history of the term. These modifications are simply to give credit to the pre-Holling use of "resilience" in ecology and the pre-Adger use of "resilient communities" in geography and sociology.

3. "In this, the various prior meanings of the term can be seen: rebounding, adapting, overcoming and maintaining integrity" (page 7, lines 16-17). The author could add a note that some of those meanings might be seen as being contradictory.

4. The statement on page 12 that "Klein et al. (2003, p. 43) went so far as to argue that maintaining and enhancing adaptive capacity should be the overall goal of resilience" shows the futility of these authors in trying to interpret and explain the jargon used. After all, Klein et al. could easily have written that maintaining and enhancing resilience should be the overall goal of adaptive capacity. The author's final sentence in this paragraph (page 13, lines 1-4) indicates the problems with these jargon games. The critique of the material and references given in this paragraph could be much stronger, as that critique ties directly into the point being made in the overall paper.

5. In footnote 7 on page 11, the author could explain that Gunderson and Holling (2002) imply that they coined the word "panarchy", but they were at least 142 years too late <http://www.panarchy.org/indexes/panarchy.html>

6. I know what the author is trying to say on page 13 line 30 "weather disaster risks",

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but given the possibility to misunderstand, perhaps a better phrase might be "address disaster risks". Another typo: the second word on page 2, line 20 should be "word" not "work".

7. Section 5 is excellent. On page 14, line 7, the author might want to note that there is now even a journal called "Resilience" <http://www.tandfonline.com/loi/resi20> and to critique that journal's mandate. Thank you also for pointing out the obvious that ecological systems are not necessarily the same as social systems—a point which, sadly, does indeed need to be explicitly discussed, as done admirably in this paper. That point could be reinforced while making explicit the author's implied critiques of the term "social-ecological systems" (and variants).

Congratulations to the author for an important paper.

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