

# Review of: "The Dual Role of Culture in Evolutionary Play: Anthropogenic Expansion Vss Destruction of Biodiversity"

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**Potential competing interests:** No potential competing interests to declare.

This manuscript describes two angles in which humanity modifies the biodiversity structure of Earth. The first relates to the contribution and rapid diminishment of Earth's biodiversity with respect to genes, species, and ecosystems. The second relates to the increase in the diversity of these different scales by human activities, particularly those related to the domestication process in its broader aspect. These two aspects are very clearly described, but the different sizes of the effects are poorly described, and as a consequence, the ideas remain confusing and underestimate the Anthropocene effects produced by humanity.

## Specific comments

### Abstract

Para 1, lines 1-6: The need to quantify the amount of biodiversity in genes, taxa, and ecosystems that has been increased by human activity and its comparison with the diminished amount produced by the Anthropocene is a critical aspect of the arguments made.

Para 1, lines 7-9: This sentence needs quantification. This should be done not only in the body of the manuscript but also, and most importantly, in the abstract. How many species or genotypes are you referring to? Particularly the so-called novel taxa.

Para 2, lines 2-6: This assertion also needs general data for comparison, and the literature is full of examples. You can also use particular groups of species so that the comparison is reliable: plants, angiosperms, vertebrates, insects, etc.

Para 2, lines 9-10: To what are you referring with "genetic purity"? There are several published data on this matter. In general, there are no pure improved lines nor landraces, and this point needs clarification.

Para 2, lines 11-15: You probably have to mention that the genetic purity of a crop depends on its mating system, either mostly inbred or outcrossed.

### Introduction

Page 2, line 10: Revision needed for spaces (e.g., "by civilization") and the use of capitalization in some words (e.g., "Nature") throughout the whole manuscript.

Page 3, para. 3, line 7: Instead of mentioning “many others,” refer to the two or three relevant references.

Page 6, para 2, lines 1-5: This needs quantities of diversity increases due to human activities. Also, substitute “create” with another term throughout the whole manuscript.

Page 6, para 3: You have to distinguish the diversity that has been selected and was already in the genetic pool from the diversity that was generated due to human activities.

Page 7, para 2, lines 3: Add references.

Page 9, para 5, Recent evidence suggests that the classical model of domestication can decrease variation through bottlenecks, increase it, or maintain it. Varies with crops and time since domestication started. Include a more ample description of this and include references accordingly.

Page 10, para 2, The description of a 26-year-long experiment is not relevant to your argument. You have to include cases in which domestication has been applied for several thousand generations.

Page 11, para 1, The argument of producing novel subspecies or, in some cases, species is quite valid. The amount of new subspecies or species is rather low when compared with extinct subspecies or species. You have to mention this in several parts of the manuscript, particularly here.

Page 11, para 3, This experiment has been criticized for its probable lack of rigorous methods. You can probably delete it, which would not debilitate your argument.

Page 14, para 1, See my general comment; in short, I do not see the point of talking about genetic purity, even less when referring to landraces. You could make this section short.

Page 15, para 3, Here you need to include numbers that support your argument and not just “so stories.”

Page 16, para 1, line 7, I do not understand the meaning of “Relyea?” Clarify.