

Peer Review

Review of: "Does Palaeolithic Resource Management Leading to Domestication Explain Human “Modernity”?”

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This is an interesting and timely review article and poses a novel hypothesis about whether human domestication of plants and animals, self-domestication in *H. sapiens*, and/or human resource management drive modern behavioral traits in Holocene *H. sapiens*. The MS is well-researched, thorough, and generally informative. There are a few places where it could benefit from stronger structure, and that could be best solved by ensuring that each section is focused on singularly answering the question that the paper poses.

The review portion of the paper has a tendency to drift and, as a result, it pushes the reader down tangents that do not always result in a clear or convincing argument. That said, all of the key material is present. The body of the work just misses an opportunity to nail the points that are solvable with existing scaffolding while acknowledging the areas that are still held together by speculative duct tape because we lack sufficient archaeological or paleontological evidence at present.

Unpacking these areas would go a long way, and that likely only requires a small structural change to the MS. Working from the title (“Does Paleolithic Resource Management Leading to Domestication Explain Human ‘Modernity’?”): 1. Brief intro--How could domestication lead to modernity; 2. How does resource management lead to domestication; 3. How did domestication emerge, and how did human domestication of plants and animals either a. drive humans toward modernity or b. drive self-domestication; 4. How could self-domestication lead to human modernity; 5. What are some falsifiable predictions that would differentiate between this hypothesis of modernity and others (e.g., bipedalism, brain size, cognitive capacity, tool use, cognitive offloading); 6. Discussion.

Below are a few minor points:

1. Global. The paper is written by a single author, but in a number of places, it references “we” and, under Author Contributions, it references two contributors (M.H. and R.B.). Either the second contributor should be added as an author, or these references should be removed.
2. Global. The manuscript is using multiple formats to denote references (e.g., [9] and Henneberg and Eckhardt 2021).
3. Global. Many assertions could benefit from greater underlying support/references.
4. Introduction. The introduction could benefit from more structure, and I would recommend breaking it up into multiple sections or shortening it.
5. Pg 4. “...intensifying gracilization” should be referenced; consider Ruff et al., 1997; note that patterns of gracilization predate the Late Late Pleistocene/Holocene, and intensification may have started far earlier.
6. Pg 4. “The underlying force of these changes was human management of plants and animals. It eventually altered their reproductive cycles, resulting in the phenomenon of domestication.” It is not clear whether these sentences are a hypothesis or statements. If the former, it should be stated as such (or perhaps removed and left for later in the paper); if the latter, a reference would be helpful.
7. Pg 5. “In humanly initiated domestication [for mammals], consistent long-term selection probably only occurred for one of these features: increased docility.” I assume you are specifically referencing mammals here (and not plants, etc.), so I would add that for clarity.
8. Pg. 10. “Here, we...,” “We illustrate...,” “We intend to ...,” should be singular if the second author has been removed.
9. Pg. 15. Title: “Hominin domestication” should read *H. sapiens* domestication unless you are arguing, contrary to the hypothesis, that domestication predated the extinction of other *Homo* or Hominin species.
10. Pg. 15. The main argument in the manuscript hinges on *H. sapiens* domestication, but only half a page of the 20-page document is devoted to explaining how this may have emerged in a “geological instant.” This section could benefit from a more thorough review that unpacks the ladder leading to human domestication.
11. Pg. 18. Discussion. “Here, we are concerned with the extension of this generic principle....” Which “generic principle”?
12. Discussion. The paper could benefit from a more robust discussion and conclusion that ties some of the data back to the underlying hypothesis of whether domestication specifically led to human modernity.

Declarations

Potential competing interests: No potential competing interests to declare.