

Author response: revision Round 2 – started 04 Aug 2024 Anonymous Referee #3, Report #2:

General comments to editors:

- We have restructured and modified the abstract for conciseness, and more specifically stated our findings relating to practical strategies to create norm change (lines 24-27) the content is essentially the same.
- There are some small technical corrections throughout the document, the content is the same.

1. In their analysis, the authors explore heterogeneity in individual thresholds, and Figure 3 provides possible threshold distributions. Recent work by Janas et al. (2024) elicits clear examples of such threshold distributions and heterogeneity in the real world. Their study could offer empirical evidence that complements the theoretical examples.

- We add a threshold distribution from Janas et al. to Figure 3, seen in panel (d). This provides the empirical perspective mentioned above.
- We have changed the text to incorporate this addition (lines 298-319). We discuss the implications of the distribution for social tipping and what it represents, along with some general technical improvements to the writing.

2. The paper would benefit from a more explicit discussion of future research opportunities. While the analysis is thorough, outlining potential avenues for further investigation would provide guidance for future work in this area. I particularly liked the time scales discussion and think future experiments should tackle the role of time in social tipping.

- The discussion and conclusion have been restructured to more explicitly discuss future research opportunities. Lines 594-630 have been heavily re-written with the previously scattered suggestions for future research removed from other sections and now consolidated and presented together.
- We created a new section specifically addressing temporality of social tipping processes (see lines 620-630), under which we include a discussion of time scales and relevant existing methodologies which are well suited to further research on the topic.

3. The emphasis on a 20-25% critical mass as a general tipping point could be misleading. There are many reasons why a common or typical range of critical mass may not exist across different contexts. This presents another opportunity for future research: testing the conditions under which tipping occurs at much lower or higher percentages would offer valuable insights.

- We have modified text in the conclusion (565-569) to highlight the limitations of our findings in terms of broader application and validity in various social systems. Specifically stating that critical mass estimates (20-25%) cannot be generalized to all scenarios.
- We have also modified the text in the abstract to a similar extent in lines 19-24. We use more explicit language, emphasizing that the tipping point of around 25% is found within our dataset, not “within susceptible social systems”, which may be misleading. We have removed the word “general” in line 19 to be more specific. Lines were added (23-25) to indicate that our results show the “possibility” of rapid social change in certain contexts. This should indicate that this is not inevitable or assured in all contexts.