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## Reply on RC2

Giuliano Di Baldassarre et al.

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Author comment on "Multiple hazards and risk perceptions over time: the availability heuristic in Italy and Sweden under COVID-19" by Giuliano Di Baldassarre et al., Nat. Hazards Earth Syst. Sci. Discuss., <https://doi.org/10.5194/nhess-2021-177-AC2>, 2021

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We would like to thank Anonymous Referee #2 for reviewing our manuscript, being positive about the paper, and providing highly constructive comments. These will help us improve the description of this research work. We intend to carefully address all of them in the revised manuscript, as highlighted below.

1) The first comment is about the broad spectrum of hazards. We agree with the Referee that they are of "different nature, frequency and severity" and "require very different prevention" "and preparedness measures", while "they are not homogeneously distributed in the national territory". This is exactly why we used simple research methods to compare public perceptions to multiple hazards. More complex models or regression analyses will be used for future studies focusing on specific hazards. The revised manuscript will discuss this point and provide a sound justification of the research methods.

2) We also agree with the reviewer that the geographical distribution of respondents can help examine differences between actual impacts and risk perceptions. Yet, this can only be done for a subset of hazards (e.g. droughts) operating at large scale because the exact location of respondents is unknown. The dataset only provides info on the administrative region (e.g. Tuscany). In other words, we don't know who lives, for example, in flood-prone areas. Future studies will address the geographic dimension by focusing on a subset of the hazards. We will comment on this aspect while discussing the results in the revised manuscript.

3) The third comment relates to the "knowledge the public has of the different hazards". We totally agree with the Referee that this is a key element at play. We will add a paragraph in the revised manuscript in order to better discuss the role of public knowledge with respect to the different hazards, and its potential impact on our results.

4) The Referee also asked to address these questions: "Are people able to distinguish the climate change hazard from floods and drought? How did they experience the climate change? The survey considered natural hazards directly or indirectly related with climate change (wildfires, floods and droughts). Have the authors considered the possible dependence between the hazards and how the relation was handled in the responses analysis?" Excellent points. We will add one paragraph in the revised manuscript to discuss the potential overlaps between the climate-related hazards considered in the study, and how they can potentially influence our conclusions.

5) Indeed, there are multiple factors at play. We will enrich the revised manuscript by comparing more explicitly the role of experience in shaping public perceptions (availability heuristic) with the one of gender, age and political orientation (which was only showed in the supplementary material of the original manuscript).

6) The Referee discuss the limitations of EM-DAT. It should be noted that we never used EM-DAT data for quantitative comparisons across hazards. They are shown to introduce the two case studies (Italy and Sweden) and contrast their risk landscapes. Still, we intend to revised the manuscript by addressing the comments provided by the Referee. In particular, we will i) discuss the role of minor events that can be extremely frequent, but not recorded in EM-DAT (wildfires in Sweden are a striking example), and ii) clarify differences in the EM-DAT classification with the one from our list of hazards.

7) The Referee also discuss the role of social media. Indeed, they have plausible influenced public risk perception. There is abundant literature on the topic and we will add a new paragraph on this point while discussing our results.

8) Lastly, the Referee suggests to include in our main text the comparison of our "surveys with two recent surveys about perceptions of scientists, collected in the 2020 Future Earth's Survey, and of decision makers, described in the 2020 Global Risks Report by the World Economic Forum". This is currently in the Supplementary Material. We will follow the Referee's suggestion in revising our manuscript.