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Discussions

Interactive comment on "Flash floods versus river floods – a comparison of psychological impacts and implications for precautionary behaviour" *by* Jonas Laudan et al.

Anonymous Referee #2

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Review: Flash floods versus river floods – a comparison of psychological impacts and implications for precautionary behaviour

This paper tries to find a relationship between psychological indicators and the use of precautionary measures. The paper has a very clear structure and methodology, which makes it easy to follow on an abstract level. The main problem with the paper is that for someone not very familiar with all the statistical methods the details of the paper are difficult to follow. I therefore recommend major revisions because the work needs a lot of clarification.

A general limitation of the study seems to be that the people who experienced river

floods experienced them multiple times in the last 10 years. While the people who experienced flash floods seem to have fewer past experiences. Is there a possibility that this frequency of past experiences may be a stronger signal than the flood type? Is there a way to correct your data for the number of flood experiences people have had?

Specific comments: Page 4, line 8-20, these are some very technical sentences, could you explain your approach in a more intuitive way and introduce the technical methods later. Currently this is difficult to read without prior knowledge about the statistical methods that are applied.

Page 4 line 24-30: Could you sketch in a bit more detail how you see this being used in the future. We don't know these psychological indicators for everyone when we make a damage model. It might even be easier to ask directly about precautionary measures than to assess their psychology. Using social media information as proxy might be a solution but I like to see these arguments made a bit more thoughtful and if that's the way to apply it I like to see that back in the discussion and maybe a recommendation to study how social media clues can be linked to the indicators used in this paper. You mention several times the "protection motivation theory", please give a brief explanation of this, you can't assume all your readers know about this.

Page 7, line 5, please first explain what burden and evasion are before explaining the motivation behind it.

Give a proper explanation of Kruskal-Wallis rank sum test, Dunn's Test, the Jensen-Shannon divergence and regression tests directly after you first mention these methods. Maybe don't mention them too early in the text. Give both an intuitive and a brief mathematical explanation of the methods.

2.5 Explain why you use Bayesian statistics, you now just jump into the explanation without first motivating the choice.

2.5 Why did you choose to use Bayesian statistics if no prior is available? What is the advantage of using Bayesian statistics?

Figure 2: why is threat appraisal lowest for strong flashfloods? Does it make sense that if something extreme happened to you, you feel the probability that it will happen again to be lower? (your argument on page 11, line 10). Maybe threat appraisal is lower because they only experienced it once while the river floods and weak flash floods were experienced more frequently. If however you would go to another region where only one weak flash flood or river flood was experienced these results may look very different. You should probably discuss that limitation in the study.

Figure 4: This figure is not very intuitive can you explain a bit more what the reader sees here.

Figure 4: Why do you see the double peaks in the probability distributions?

Page 14, line 17: You say this is common practice in psychology, can you provide a reference for this?

Page 15, H2: I think the findings make much more sense than the hypothesis.