

## ***Interactive comment on “Responses to severe weather warnings and affective decision-making” by Philippe Weyrich et al.***

**Rainer Kaltenberger (Referee)**

[rainer.kaltenberger@zamg.ac.at](mailto:rainer.kaltenberger@zamg.ac.at)

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The paper presents the results of a Swiss field experiment to observe people's responses to severe weather warnings. In a randomized control trial over roughly 2.5 months, about 3,000 users received warnings for the hazard wind(storm) in two possible warning types via the smartphone weather application "Wetteralarm" and were requested to fill an online survey attached to each warning and targeting their behavioral response. One warning type, what the authors call "Standard Warnings (SW)", consisted on information about the (weather) hazard, severity level (three levels), timing, location and "some general behavioral recommendations (e.g. secure lose (sic) items or avoid forests)". The warning type "Impact-based warnings IBW" contained, in addition to the contents of a standard warning, a brief, rather general description of an

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expected impact scenario. The contextually dependent results were summarized as "IBW did not result in greater behavioral response compared to SW", however, "lead time and warning severity significantly influenced people's decisions to change behaviour".

The overall presentation is well structured, easy to read and clear to understand by a wide and diversified audience. It would be of great benefit, if the authors would describe the "general behavioral recommendations" which are part of their SW, in more detail; e.g. by listing them in an additional table similar to Table 1 ("Additional impact-based information"). The term SW is chosen a little bit unfortunate, as in the European context standard meteorological warnings usually just include location, timing, hazard-type, severity level and eventually some meteorological information (e.g. Rainfall with amounts up to 100 mm), but generally no (generic) behavioral recommendations. In the Sendai context, behavioral recommendations are often seen, together with the impact description, already as a part of an IbW or Impact-oriented warning (e.g. [1]). Obviously some of the additional impact descriptions according to Table 1 (e.g. "Falling of smaller branches") are very similar to the behavioral recommendation ("Präventions-Tipp") of the depicted SW in Fig. 1, saying to be aware of falling items ("Vorsicht vor herunterfallenden Gegenständen"). This provision of rather little additional information in the warning message might be one of the main reasons for the principal finding, that in their field experiment IBW did not result in greater behavioral response compared to SW which should be discussed by the authors. It is likely, that SW without behavioral advices, IBWs with richer (or more empathic) impact descriptions or generally more tailor-made warning texts would have changed the results significantly. Acknowledging this and other limitations, e.g. just warnings for one hazard were investigated, no warnings with the highest severity level due to the relatively short period of just 2.5 months, some concluding statements would benefit from being expressed a little bit more cautious and less generalized.

Although having some limitations, this paper describes a good example for how field

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experiments targeting the measuring and understanding of the behavioural response to meteorological warnings should be designed and carried out. It provides interesting information for weather services, civil protection agencies and the research community. The introduction acts as a well-written resource, providing both social scientists and meteorologists a comprehensive overview in the highly interdisciplinary and dynamically evolving field of warning research.

[1] Kaltenberger, R., Schaffhauser, A., and Staudinger, M.: "What the weather will do" – results of a survey on impact-oriented and impact-based warnings in European NMHSs, *Adv. Sci. Res.*, 17, 29–38, <https://doi.org/10.5194/asr-17-29-2020>, 2020.

Rainer Kaltenberger, ZAMG/EUMETNET Meteoalarm

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