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Natural Hazards and Earth System Sciences
Discussions

Interactive comment on "Difficulties in explaining complex issues with maps. Evaluating seismic hazard communication — the Swiss case" *by* Michèle Marti et al.

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In my view, this good study which evaluates seismic hazard maps has two major shortcomings. 1. The researchers define which information should be extracted – it remains unclear if the maps fulfill the information needs of the target audience of the study (people at risk, architects). The authors just state: "Risk communication can lead to more accurate beliefs about seismic hazard and a higher tendency towards taking precautionary measures (Whitney et al., 2004). As elaborated previously, maps are the means of choice to communicate seismic hazard. In the following, we discuss the factors determining how hazard maps are read, interpreted, and understood. This sets

the baseline to analyze the maps 90 produced by the SED." It remains unclear which role hazard maps should play in the risk communication. In my view, there is a big difference between seismic and e.g. flood hazard maps. Flood hazard maps could easily be used by people at risk to plan mitigation measures: They get information, if their house might be flooded and the flood height for a given scenario. Thus, the information of the hazard map is mostly sufficient for the planning of mitigation measures. In contrast, seismic hazard maps cannot initiate specific mitigation measures by people at risk. The list of possible mitigation measures which is presented in question 21 can be classified in 3 categories: 1. Mitigation measures which can only be implemented by experts (Earthquake-resistant construction; Contracting an earthquake insurance) → here public only needs to know, that there is a severe danger 2. Mitigation measures which should be adopted when a basic hazard threshold is reached (Knowing what to do in case of an earthquake, Securing items inside a building e.g. shelfs) → here public only needs to know, that there is a moderate danger 3. Normal precautionary measures (Allocating an emergency food supply) → basic awareness for different types of hazards is necessary This is just a rough guess of an expert who is working on flood and alpine hazards. My expert judgement is that you are presenting to complex information which is not necessary within the overall risk communication goal (= foster private mitigation measures). Thus, my recommendation is, that you clarify the role of hazard maps within the risk communication process (you could use the path diagram of Nathe 2000 (which you have cited)). On this basis, your introduction and discussion could be improved. The second problem of the paper is in my view the data mining approach within the statistical analysis. The authors do not formulate any hypotheses, they just present statistical significant combinations they have found (ex-post) in the data set. It would be necessary that the authors formulate hypotheses on the basis of a risk perception or risk communication theory or at least a literature review. It would be interesting to present also the independent variables which had no statistical influence.

Minor comments: The authors often use following style: Meyer et al. (Meyer et al., 2012) recommend – the classical style would be: Meyer et al. (2012) l. 128: Please

remove the brackets after e.g. l. 140: “, statistical” instead of “, Statistical” l. 171: Case study instead of cases study Tables 6 and 7 are not really necessary. l. 420: Here, the studies of the Fuchs/Dorner group (2 times cited by the authors) would be helpful. This group used the eye tracking technique and could show that legends of maps were only used by expert users while lay people directly tried to interpret the map. Sorry for my limited English skills – I hope you understand my comments.

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