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# *Interactive comment on* "Seismic Risk: The Biases of Earthquake Media Coverage" *by* Maud H. Devès et al.

**Maud H. Devès et al.**

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Dear Ian Stewart,

First of all, we would like to thank you for your rigorous, thoughtful and constructive review. It was a pleasure to work at a response.

We prepared a point by point answer below. You can consult the details of the changes in the document entitled Devesetal_GC2019_revised_withtrackchanges. The final version of the revised manuscript, entitled Devesetal_GC2019_revised, has been compiled by accepting all changes. It will be uploaded on the website.

We believe that the suggested changes have significantly improved the paper and we hope you will find it even more ready than before for publication. We remain at your



disposal for any further improvements you might find necessary.

Sincerely,

Maud Devès on the behalf of all co-authors

— Point by point response

IS: "I really enjoyed reading this paper, which is a valuable analysis of the media responses to earthquake events and a considered appraisal of the media framing and key messaging that accompanies such seismic crises. It is fairly well written and concise, brings a strong interdisciplinary team to address the problem and sets the context well with a range of interesting background literature. The data collected is soundly analysed and well presented (I especially like Figure 4, a diagram which will probably be much used by risk communicators). To be honest, the paper is broadly fit for publication as is, but I would suggest that the authors might like to make revisions around the following considerations: Point 1: The thrust of the initial set up, not surprisingly, is the expectations of the media in disaster events. But the corollary is the expectations of the role and responsibility of seismologists and scientists in those crisis moments. In this regard, I am thinking of Michelle Wood's work on actionable risk messaging. In regard, I wondered how much of the media responses analysed by the team incorporated expert comment and did that substantially change the messaging. This is important because it challenges the value and urgency of scientific expert comment during disasters, an aspect which the paper seems to omit. It may be beyond the scope of this study, but thoughts on this from the authors would be welcome."

Authors answer: What should be the role and responsibilities of scientists in the face of disasters is a fundamental question. In this paper, we settle for exploring the media coverage of seismic events with the idea that it might help scientists to, at least, communicate more efficiently. News do not actually refer to scientists, specialists or to scientific explanation as much as what we expected before to undertake the study: only 5.4% of the news refer to the category we called 'experts', (Figure 5, table 2). And

the content of these references is, scientifically speaking, quite disappointing. Most of the time, it is just about mentioning the magnitude, in the best case, mentioning that earthquakes occur at plate boundaries. It is also very important to realize that these messages are mainly found in the initial phase of coverage i.e. immediately after main shocks or big aftershocks when journalists lack information to really build a story. As soon as more information comes about the level of impact, the first political declarations, etc., scientific considerations disappear. But a temporary lack of information is a void to be filled up... why not considering filling it up with a bit of scientific culture? The fact that there is only a very short time window (few hours in most cases) to communicate is an important result to that respect. We observed that the most cited expert institution was the USGS. One of us has recently had the chance to visit the news room of the French newspaper Le Figaro. He observed that, regarding earthquakes, journalists were using the information forwarded by press agencies (AFP-Reuters), the latter publishing automatically the communicates emitted by the USGS. Why not making, not just the USGS, but all scientific centers communicates more consistent from time to time?

IS: "Point 2: Your identification of an exponential decay of media interest seems to me an obvious but important point. It made me wonder if you could tie it to the predictable exponential decay in aftershock activity. I don't mean to suggest they are the same, or related, but conceptually or metaphorically it suggests the waning energy of the earthquake disaster. Just something to consider."

Authors answer: The referee makes a very interesting point. It is true that aftershocks big enough to be covered in the medias are less likely to occur as time passes by. We would be surprised however to find more in this statistical correlation. We tend to believe that exploring it is out of the scope of the current paper.

IS: "Point 3: One issue that does not seem to emerge from the media narratives documented in this study is 'where next?'. If true (and I suspect it is), this seems to me to be an important omission because coulomb stress triggering theory highlights the likeli-



hood of transient dynamic stress being transferred to neighbouring faults and therefore increasing the probability (in the short term) of a triggered quake nearby. Although not without risks in terms of public panic, conveying the dynamic nature of earthquakes as evolving threat events would seem to be a media narrative that earthquake scientists could develop with the news media."

Authors answer: This is a very good point ïĄŁ We added a paragraph in the discussion as follows: "Another topic that is absent of media narratives is that of the location of the next event. Coulomb stress triggering theory can help answering that question, at least probabilistically speaking. It could thus be interesting to communicate on the dynamics of the seismic phenomenon, notably to help designing adequate prevention measures (it might shake elsewhere the next time!). Âż (lines 619-624)

IS: "Point 4: I think it would help to clearly state why an appreciation of 'earthquake intensity' is better than an appreciation of 'earthquake magnitude'. Beyond the academic distinction, what is the utility for the public in those moments of crisis? Are we just being pedants about terminology, or is there a tangible public benefit in being explicit about using terms conveying energy and shaking?"

Authors answer: We completed the paragraph accordingly: "As discussed in a previous paper (Le Texier et al., 2016), the term of magnitude is commonly used as a synonym of intensity by the media. But the notion of intensity is the one that allows introducing the idea of differential damages paving the way to discuss mitigation and preparedness (earthquake-resistant construction, site effects, etc.)."

IS: "Point 5: I'd love it if the paper could conclude with some recommendations to scientists about the key actionable risk messages that they ought to be conveying the media in the various time windows as an earthquake disaster unfolds, i.e. minutes-hours; hours-days; days-weeks (perhaps tied into a modified reprise of Figure 4. Recognising the likely changing media environment, how can scientists take more control over the narrative, particularly In the aftermath of the search and rescue operations where

interest is dying down but seismic risk is potentially still high on neighbouring seismic sources?"

Authors answer: This is a difficult question. Our analysis can provide a solid ground to design better scientific communication (notably by emphasizing the constraints linked to the large-scale dynamics of media coverage), but we do not have “the good recipe” to build the content of this communication and we tend to believe that this is an issue that falls out of the scope of our paper.

IS: "Finally, some very minor points: You refer to ’the media’ but essentially it is the ’news media’ and possibly even just the ’broadcast news media” that you are considering (e.g. not long-form documentaries etc.) I’m not sure I know what you mean by ‘the concept of the seismic crisis’."

Authors answer: We agree with the referee on these two points. We modified occurrences of ‘the media’ in ‘the news media’ whenever appropriate. About the point on seismic crisis: we observed that the ‘news media’ tend to treat each earthquake as an autonomous event (sometimes not referring to it as an aftershock). This might contribute to the representation of the seismic phenomenon as being a powerful, but unique, shock. We know that aftershocks are particularly dangerous, and it is important that exposed population understand that: 1) it might shake elsewhere the next time (issue of the next location) and 2) that it might be shaking again after the main shock (issue of the temporal distribution).

IS: "Figure 5 – the caption ought to explain the percentages. Some readers will no doubt be expecting the columns not add up to 100% and will be confused. None of these points are especially substantive - they probably reflect my personal perspectives on this topic – and should not hamper publication of the very nice paper."

Authors answer: We thank again the referee for his very useful comments. We modified the caption accordingly. It now reads: “Percentage of news mentioning a theme or topic. NB: One news item can include several themes and topics.”



Please also note the supplement to this comment:
https://www.geosci-commun-discuss.net/gc-2019-5/gc-2019-5-AC1-supplement.pdf

Interactive comment on Geosci. Commun. Discuss., https://doi.org/10.5194/gc-2019-5, 2019.