

Interactive comment on “Rapid collaborative knowledge building via Twitter after significant geohazard events” by Robin Lacassin et al.

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* Note that these comments, as well as an annotated scanned manuscript with suggestions and corrections, are included in the supplemental pdf.

Review: Rapid collaborative knowledge building via Twitter after significant geohazard events

Review submitted by Beth Bartel, December 22, 2019.

General Comments This paper is a very helpful contribution to the body of literature documenting the role of social media in modern information transfer in geoscience, both for knowledge building and dissemination. I recommend it for publication pending revisions. The paper offers two different examples of information exchange and

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knowledge-building via social media, specifically Twitter, regarding geophysical events (in both cases, seismic events). The piece points to social media as a helpful tool in engaging the international geoscience (and public) community in understanding local events. It also brings up important questions that are yet to be addressed, concerning, for example, recognizing and giving credit to 1) the scientists who are collecting the data used by the online international community and 2) those who are participating in the informal development of scientific ideas via social media. These participants may be geoscientists by trade or informed laypeople. Social media can challenge what we think of as the scientific process and who we think of as contributing to building new scientific knowledge.

The authors do a good job, especially with the Palu example, of demonstrating how Twitter can facilitate a rapid global understanding of seismic events. It would help to include more explicit evidence to support their other arguments, including references to specific examples within the analyzed Twitter threads, as well as figures showing specific examples of knowledge building, knowledge transfer, and/or exchange between geoscientists and non-geoscientists.

I suggest going back through the conclusions to make sure each conclusion is clearly supported by the analysis and addressed in the discussion. Nothing new should arise in the conclusions unless shared as areas for future exploration. Alternatively, make it clear that the concluding remarks are the result of authors' experiences on social media through this and other events. (Or observations of others' experiences.)

Specific Comments First, a comment on my attached pdf. I know some people have an aversion to red pen. I used red pen because it is the color that best stands out against the dark text. I hope this is helpful.

- 1) Abstract A statement about the purpose of the analysis would be helpful.
- 2) Section 2, Studied Events and Methodology I would like more specific information on the Mayotte analysis. What did the analysis consist of? What were you looking

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for? Was the primary analysis the development of the word clouds? Or the exercise of organizing the discussion into three Twitter moments? Was it mainly looking through the tweets for themes? Was anything about it systematic? How would you describe it should you want someone to repeat it? (The same goes for Palu, but to a lesser extent.)

Lines 128-130 seem to set the Mayotte analysis up as a contrast to the Palu analysis, but it appears from the list starting on line 130 that you are looking at the same things, possibly with the exception of the role of citizen scientists, which is not addressed in the Palu discussion.

Line 133: The word “aims” is likely not the best choice here, as it implies that each thread had a different goal. Presumably commenters didn’t start the threads with different goals in mind. Instead, I assume that you mean either that the aims of the analyses of each thread were different or that the nature or characteristics or circumstances of each thread were different. (I’m not italicizing to be a jerk, just to emphasize the words I think could be substituted.)

Section 3.1: Lines 152-188: It would be helpful to call out who posted info on Twitter other than the monitoring agencies (since you do refer to them), to show who was contributing to the knowledge-building process. You don’t need specific names, but it would be helpful to know: academic scientists? Researchers from other institutions? Other?

Line 198: It would be helpful to know more about the scientists, e.g., example institutions or at least institution types (as in comment above); all academics? From other agencies? You write later about the democratization of science, and about the diversity and subdisciplines of geoscience; this would be a good place to lay the groundwork for those statements by pointing out the diversity of voices in the conversation. (All seismologists, or various disciplines? Different data types being shared and considered together? Different career stages, nationalities, etc.?)

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Line 206: Regarding “creates”: Be careful with the use of present vs. past. Present implies a general truth, in this case that Twitter creates the opportunity for developing new international collaborations. I think what you mean—and what I think is appropriate in this section—is that the Twitter interactions during the Palu event created the opportunity for developing new international collaborations. (In which case, use past tense, created.) This is an example of why defining your pronouns is also important (see General comments under Technical Corrections, below). If you want to make a general statement here, I suggest something like “Exchanges like this create the opportunity. . .”

~Line 220: Wasn’t the geometry of Palu Bay, not only the timing, part of the scientific discussion? If I’m remembering wrong, ignore. If this was indeed part of the discussion, consider bringing it in.

Lines 210-222: I recommend reworking this paragraph for clarification. It is worth expanding on this—don’t be afraid to take up more space explaining the situation.

Line 222+: This section would benefit from a short concluding paragraph.

Lines 230-236: As I wrote in the margin, I think a shot of these early tweets would be a helpful figure.

Line 241: I’m not convinced that this work is a contextual analysis. My impression is that it is another form of content analysis. I’m not an expert in this, however.

Line 253: An intro sentence would be helpful here.

Lines 263-268: An intro and/or conclusion sentence with main point(s) would be helpful. Also, I don’t find the SH tweet quote helpful, especially as he is an author (meaning you can just state that idea in your text as authors, rather than quoting the tweet). Here quoting these casual tweets is a little like saying “after this event, someone told me over coffee that ____.” As in, it is not evidence of anything. You can make the arguments based on your analysis instead. I also don’t find the corresponding figure helpful (Fig-

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ure 4), especially in the absence of other tweet examples that would be more pertinent in this paper, such as the tweets that started the Mayotte conversation. I recommend either removing the figure or reworking this paragraph and the figure caption to justify including it.

Lines 274-278: Valid points, but they need back-up. They seem speculative. The comments on the people living in Mayotte are also potentially demeaning, and I recommend more careful wording here. What was the mention of the “sea monster”? Please clarify context.

Can you comment on how the pitfalls with Mayotte compare to the Palu example? Were they absent from the Palu case? (Aside from the bushy nature of the thread, which you have made a clear case for already.)

Section 4.1 Lines 302-305: I don't see two of the ideas stated here clearly stated in and supported by the analysis (noted in the margins). Specific quotes or figures in the analysis to support these ideas would be helpful.

Lines 310-315: This is an important discussion. You may want to clarify a bit: Are you referring to use of open access data, or people using info posted by agencies on Twitter, or...? If I understand right, you are referring to researchers (not at the responding agency) using tweets, blog posts, and media releases posted by the responding agency to further their own science without collaboration with the responding agency scientists, and faster than the responding agency scientists can publish.

Section 4.2: Line 320: Who was already in the discussion, and was it already international? It would be helpful to know more about the discussion the Indonesian scientists “joined.” (Noting that they, too, are part of the international scientific community—you want to reword to make this clear.)

Lines 325-328: What are the implications? Problem? Limitations? And what specifically happened with Mayotte in May 2019? And does it relate to / show up in your

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analysis?

Section 4.4. You may be able to combine or reorganize some of the sections, for example 4.1 with 4.4.

Lines 367-371: This mixes peer review (process) and publications (output). These should be considered separately. This may also fit into section 4.1, as noted above.

Lines 374-375: How does this relate to social media? This seems an argument for open-access journals.

Section 4.5 Lines 380-381: Justification or citation? Lines 382-383: Justification or citation?

Section 5: Concluding remarks I suggest focusing this section first on the benefits of using social media to rapidly characterize geophysical events, which is your main point (and what your analysis is focused on) throughout the rest of the paper.

You bring up other important discussion points, not all of which are addressed directly by your analysis. Since you are using this space to remark on the nature of science and science communication beyond your analysis, make this clear somewhere, such as at the end of the first paragraph. Use examples, describe the experiences of authors or at least state whether the statements are based on the experiences of authors, or use citations where possible. At the very least, set the expectations of readers by letting readers know that you are diverting from your analysis-based conclusions.

Figures: Figure 1: Needs a legend. What does red mean, what does blue mean? Also, curved line to the right of the circles is a nice idea but could be removed—it tricked me into thinking there were a lot of points stacked on one another. Reword the text for consistency in format. You may try changing all statements to read as though they end in “posted,” since this is a timeline of information as it appears on Twitter, not as it is produced. Modify the caption to reflect this. “Polemics about a “failed” tsunami warning is vain.” – I recommend a reword. Polemics is not common enough, vain is not quite

right here. Edit this also in other appearances in the manuscript. Figure 2: I would like to see an example of knowledge-building as the first figure of tweets, since that's what the paper most focuses on. Then, I would like to see figures showing examples of the other points you would like to make—e.g., interactions with journalists, correcting misinformation, transfer of knowledge/information to non-geoscientists, peer review process online, and/or contributions of non-geoscientists to the scientific discussion.

Please include a more descriptive figure caption for Figure 2.

Figure 3: More descriptive figure caption. Include a sentence on the implications of the word clouds (you can repeat from the main text). Do this for all figure captions. A reader should be able to read the figure caption to get the point of the figure without having to go back to the text. (This will increase the reach of your ideas—think of the people who are only going to read the abstract, intro, figures, and conclusions!)

Tables: I think these tables are key to understanding your analysis. I recommend at least Table 1 in the text rather than having them as a supplement.

Table 2: The link to Ken's doesn't work.

Technical Corrections Most of my technical corrections are noted on the accompanying marked-up pdf. In general:

- Back up general statements with references or evidence as much as possible.
- The writing could be strengthened by removing unnecessary words and phrases to make the piece clearer and more readable.
- Several word and phrase choices are likely the result of translations; I suggest substituting more commonly used words.
- Writing would be strengthened by minimizing the use of passive tense and also of hyphenated statements.
- Define pronouns as much as possible.
- Be consistent with date formats.
- Cut sentences that aren't necessary, ones that don't either state or support a point you are making. In some cases, you should either take out sentences or be more specific about how they relate to what you are trying to convey.
- I suggest reading each paragraph to make sure 1) there is a main point or topic; 2) that the point or topic is clearly stated; and

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3) all information in the paragraph is relevant to and supports that topic (and that the connection to the topic is clear).

If I underlined text without remarking, I am suggesting a rewrite based on one of the points above. (I have not marked all the places where the above points apply, however, in particular where it comes to paragraph and idea organization.)

This paper brings up an interesting question about how to cite Twitter threads. Some of the references in the text feel misleading, as in I read them expecting a published and vetted reference, and instead find a Twitter thread. This is a whole philosophical conversation—maybe it's already been resolved, and is now standard? I'll leave the issue of citations to the assigned editor.

There are a lot of marks on the document. As an editor and not as a grader, I'm not calling out the good stuff. There's plenty of good stuff in there too! I would like to express gratitude to the authors for taking the time to not only engage in communication via social media, but also for the time and effort taken to call out these efforts and the nature of science via Twitter in this publication. This piece will be an important contribution to the science communication literature.

Please follow up with me on questions as needed.

Please also note the supplement to this comment:

<https://www.geosci-commun-discuss.net/gc-2019-23/gc-2019-23-RC2-supplement.pdf>

Interactive comment on Geosci. Commun. Discuss., <https://doi.org/10.5194/gc-2019-23>, 2019.

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