

Community comment 2:

We want to thank Dr. David Crookall for taking the time to review this manuscript and for providing valuable comments.

I enjoyed reading the ms; it helped me greatly to understand much about the areas that need work in geosci comm. I am sure that it will help the whole community of geoscience – not just geosci comm.

Here are a few thoughts that might be useful. I hesitated about whether or not to offer these thoughts, fearing that they may be taken as intended, that is, as a small bowl of ideas, among which you may pick and choose, with the hope that they might be useful as you revise your ms.

Your mention of the deficit model reminds me of a number of works:

For example, C P Snow's two cultures, back in 1959, and book in 1963, argued that our society had divided into two mutually 'inunderstandable' groups.

The ground-breaking study by Baratz & Bafratz, 1970, "Early Childhood Intervention: The Social Science Base of Institutional Racism" shines a light on the idea of educational deficit. They propose a different model: "The cultural difference model is presented as a viable alternative to the existing genetic inferiority and social pathology models". I must say that I still encounter thickly-veiled attitudes of that kind in academia.

We appreciate the historical context provided regarding discussions surrounding the 'deficit model'. Delving deeply into the "deficit" and other models is beyond the scope of this manuscript, particularly considering that we will be shortening this section in accordance with reviewer comments. However, we do begin to examine the importance of considering cultural differences for effective geoscience communication in the manuscript. For example, in Section 2.2, we state, "An effective communication strategy takes into account the different ways people view risk, as well as their cultural and socioeconomic context, all of which may affect how the risk is understood."

Somewhat related to the two cultures is the vibrant discipline of cross-cultural (or intercultural) comm and training. One might say that the lay public and scientific groups tend to live in two fairly distinct cultures, each with their own beliefs, values and behaviours. Stella Ting Toomey and Young Yun Kim – and their colleagues – have done some marvellous research in the area. They may sometimes talk with each other, but the cultural gap remains wide. We geoscientists wishing to visit a lay culture need to learn much before we travel there. One unwritten rule of cross-cultural travel is that visitors must adapt to the host.

Sometimes, I wonder whether the general public and scientific groups do not get caught up unawares in the quagmire of sociocognitive processes, such as social identity, categorization, intergroup behaviour and language – see, the work by Henri Tajfel, Howie Giles, John

Taylor, Miles Hewstone and others. In particular, I would suggest that you include the social psychology of language (Giles), which is a powerful force in intergroup comm and understanding, especially as comm, sci comm and outreach inevitably use language in massive doses. (British people know (or should know) the force of accent and speaking style in comm and intergroup behaviour.)

Your potential solutions (Fig 1) are excellent, but my fear is that, without some consideration of the above dimensions, they will remain relatively superficial, and lead to results that are disappointing in the long run. I suggest that your solutions should include derived from the intercultural and intergroup language behaviour domains.

One way to bridge the divide is citizen science, esp citizen sci that is done in close collaboration with professional scientists. Both groups can be trained in intercultural comm and then encouraged to work together on an equal footing, not just in doing fieldwork, but also in publishing. The geosciences offer great opportunities for that.

While the above comments and literature appear intriguing and relevant to the discussion, we do not believe that we, as geoscientists engaged in and discussing geoscience communication, are fully equipped to address these points. This aligns with Reviewer-2's suggestion to confine the discussion to geosciences, and it's important to reiterate that our focus remains on geoscientists in academia. Nevertheless, your points indicate the necessity of explicitly stating our limitations to the reader. We will address these limitations in Section 4, 'Final Thoughts'.

I would not agree completely with the statement: “leaves non-English speakers at a disadvantage and prevents them from actively participating”. Many French, German, Spanish, etc. scientists are in fact at an advantage (assuming of course that they are at ease with what is called ‘international English’). Have you noticed that at some conferences, the non-English people seem to gather easily among themselves without natives? I can tell you a convincing, personal story sometime about that sometime.

We have directly quoted Márquez and Porras (2020, p-5) who are discussing this specifically in the context of ‘non-English speakers’ who are not at an ease with English.

Also, I think that some discussion about the fundamentals or theories of comm might help, esp as comm is so diverse – in its nature and in the scholarship and research about it. For example, in 1.534, you talk about one-way comm. This smacks of the old Shannon & Weaver model of comm. It might be worth bringing in constructivist approaches, eg, Berger & Luckmann's classic work on meaning making and legitimization.

Thank you for the comment, but this is beyond the scope of this editorial.

I wonder whether it would help the reader if you developed some summary tables at various junctures. Also, diagrams illustrating in visual form some of your concepts would be most welcome.

We will explore the possibility of incorporating more diagrams and tables to communicate the concepts in the manuscript.

It would be marvellous if you were able to expand on your training needs (1.532), and even provide examples of training methods (such as simulation/gaming and debriefing) that match those needs.

We will expand on the training needs (Section 3.2) as suggested by the reviewer.

Some mechanical things :

1.26 -- which: does that refer to shadowlands or to practices or to something else? is the subordinate defining? (then use that) or non-defining? (then use , which)

1.212 -- 's' missing

1.455 -- it would help the reader if your numbered sentences were placed vertically (as in bulleted items)

We will make the three corrections listed above.