

Response to Reviewer #1, Doug Benn:

Dear Doug,

Thank you very much for your supportive review. We are very happy that you enjoyed the paper, and are of course delighted to hear of the independent evidence supporting our interpretations regarding the flood's flowpath. We respond to your specific comments individually below, with your comments appearing in italics and our response in normal text.

Kind regards,

Evan and Co-authors

p. 2, line 20: nature of the flow path into Khumbu Glacier. In 2006, Jason Gulley and I entered an ice cave in the margin of Khumbu Glacier at the bottom of the Changri proglacial gorge. The entrance led into a low, wide passage that trended along parallel to the slope. The passage was floored by boulders resting on bedrock, so any water entering the glacier would flow along the ice-bed interface, at least initially. This was also one of the most dangerous places we had ever been, owing to rocks occasionally bouncing down the gorge, so we did not linger long enough to make any surveys.

Perhaps the fact that the system was subglacial in 2006 could be added as a 'pers. comm.'

This observation also helps to support the authors' interpretation of the flood flowpath through Khumbu Glacier, presented on p. 9, line 15. Interestingly, there is also evidence of a sub-marginal / englacial drainage system on Ngozumpa Glacier, which is intermittently connected to the supraglacial / englacial system. The same may be true on Khumbu Glacier - although the flood likely bypassed the supraglacial - englacial system inferred by Irvine-Fynn et al. (2017), the two systems may not be entirely and perennially separate.

P2, L20: The unpublished observations from 2006 are very interesting indeed, and we will include a citation to these observations as suggested. Several of the authors have passed through the gorge to reach Gorak Shep from the glacier surface, but did not venture into the cave and inlet. We heartily agree that this is a very dangerous area, especially during the melt season. Nonetheless the observation of the passage's floor characterized by boulders resting on bedrock is extremely valuable to confirm our interpretation of a subglacial flowpath from this point (at least initially). Thank you for sharing your observations.

It is interesting as well to speculate whether this flowpath simply connects to a sub-marginal drainage system from up-glacier, or whether it is the sole cause for this particular flowpath. Our discussions of the structure of the Khumbu drainage system are still ongoing, but in May 2017 we were able to trace a surface channel to just up-glacier of the Changri gorge. It is still unclear whether these flowpaths (the surface/near-surface from the glacier's upper debris area and the lateral input from Changri) connect directly or closer to the terminus, or the nature of their connection with the supraglacial-englacial system.

As you suggest, the systems may not be entirely and perennially separate, and we may have presented the 'bypass' too simply. One very possible scenario is that the flood's passage through Khumbu Glacier

overpressured the subglacial system, leading to the partial emergence of the flood at the surface flowing through the linked ponds and contributing to the double (or triple) peak in the hydrograph. We will discuss this possibility briefly in the revised manuscript, but what is very clear is that the flood exploited a subglacial flowpath for part of its transit through Khumbu Glacier.

p. 7, line 7: hydrofracture is unlikely because the lower Changri glacier is stagnant - see Benn et al. 2009 for a discussion of the conditions required for hydrofracture on Khumbu Glacier.

P7, L7: True, we will adjust this text in the revision.