

***Interactive comment on* “Evaluating the utility of qualitative data in precipitation reconstruction in the eighteenth and nineteenth centuries” by Alice Harvey-Fishenden and Neil Macdonald**

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Thank you for the opportunity to review this manuscript, which presents a useful methodological consideration of the use of qualitative data from personal diaries in weather reconstruction. The authors have analysed a huge amount of qualitative data – for which they should be commended – and have analysed it rigorously. The study is novel and the methods (mostly) clearly outlined. The material covered is relevant to Climate of the Past. In short, there is certainly scope for the work to be published.

While the science in the paper is sound, the presentation and written style detracts significantly from the quality of the data presented. There are many long and overly

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complex sentences, the writing is (in places) imprecise, and many figure captions are vague. The results are really strong but the conclusion, if anything, downplays them.

I suggest that significant revision is needed before the manuscript could be considered suitable for an international readership. At a bare minimum, the authors should read over the full text carefully and tighten up the wording. They should split their longer sentences – e.g. lines 72-77, 133-135, 135-138, 140-143, 168-171, 181-184, 197-200, 216-218, 281-284 (there are many others) – into multiple parts. This will greatly improve the readability of the manuscript. The authors also need to check for consistency in the use of ‘which’ and ‘that’ throughout the text – often this is incorrect. Please see also my comments about the misuse of the singular/plural of index in the results sections.

Inconsistency in citations – there are places where the referencing software used in the manuscript goes awry and places parentheses around citations when the author name should be included in the text of the sentence.

Specific comments:

The title of the paper would be more accurate and informative if it included the words ‘from private diaries’.

Section 2 – I appreciate that sources are cited throughout the results section, but it would be useful to refer the reader (perhaps at the end of the first paragraph) to the list of Archival Sources.

Section 4 onwards – check the use of the singular (index) and plural (indices) here, as the results sections are full of inconsistencies. “No single index system is universally used...” “...converted these to 7-degree indices...” “Additionally, an indexing approach based on...” “...each of which was given an index score...”

Figure 2 – caption could be more informative.

Line 158-162 – this is a very long and confusing explanation of the standardisation

process – consider fragmenting the sentence.

Figure 3 – the caption is very densely written and could be more informative.

Line 176 – this is the second Section 4 in the manuscript.

Figure 5 – I'm assuming that the blue line in 1b, 2b and 3b is the Trentham index series, as the caption doesn't explain this. Also, I may have missed it, but have you explained somewhere before the first mention of this figure how the index values for Trentham have been converted into mm rainfall?

Figure 6 – the distribution data at the bottom of the figure require appropriate axes and a little more explanation in the caption.

Line 247 – do you really mean 'greater capacity for snowfall at Trentham'? 'A higher propensity for snowfall' might be better.

Line 250 – is 'medium' the best word here?

Figure 7 – I assume this is Trentham as the caption doesn't state this. And indices for what (in both the caption and axes labels)?

Figure 8 – again, how are the Trentham values converted into mm rainfall?

Line 303 – one example of the misuse of 'which' here – what you mean is '...(drop the comma) that might flag...'. For comparison, the use of 'which' in the next sentence is correct.

Lines 307-311 – I was going to ask exactly this, as a direct comparison of 'missing days' in diaries (and potentially vice versa) would be very instructive.

Line 357 – spelling 'tornadoes'.

Line 365-369 – confusing sentence.

Line 375 – unclear what is meant by 'this' here.

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Line 381 – unclear what is meant by ‘it’ here.

Lines 393-394 – I understand what you are trying to say, but this is a very UK-centric take on diaries. I could point you to numerous personal diaries from beyond the UK that are biased towards drought.

Lines 413-418 – I understand the reason for including this paragraph, but it has the potential to seriously detract from the results of the study. Much better would be to state earlier (in the methodology): (i) that one person completed the analysis for all index series to improve consistency; (ii) that volunteers were involved in transcription but there was quality control.

Section 8 – I want to end on a positive. The results of this study represent a huge amount of work and are potentially very interesting. However, the Conclusion seriously underplays the quality of the research and should be much stronger. This is an opportunity to point out the key findings of the paper and highlight which aspects of the methodology were most successful. To my knowledge, no one has conducted this volume of analyses of diary entries, so this is the opportunity to recommend a methodology to be used in future studies. This will elevate the manuscript from ‘an interesting study’ to a ‘must-cite paper’ for future researchers seeking to use diaries for climate reconstruction.

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