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Barbara T. Richman Executive Editor, Eos

Dear Ms. Richman,

I was happy to learn that you found my manuscript "Hypothesis testing in geology" suitable for publication in Eos, albeit pending modification. I was particularly pleased with the approval by Albert Tarantola, whose opinion I respect a lot. His comment that "there are three kinds of lies" prompted me to change the title of my article to "lies, damned lies, and statistics (in geology)", following Mark Twain's famous phrase. I hope that this title will catch the attention of the casual Eos reader and removes the need for the provocative and somewhat aggressive opening paragraph of the original manuscript, which reviewer 3 did not like. I believe I have appropriately addressed reviewer 3's other concerns as well. First of all, I followed his suggestion and moved the sentence "statistically significant is not the same as geologically significant" to the opening paragraph. I reduced the "wanderment into philosophical realms" by shortening the second and completely removing the fourth paragraph of the original manuscript. To make the paper more accessible to those with no prior knowledge of statistics, I expanded the explanation of the chi-square test, giving explicit examples of a null hypothesis ("average global temperature has staved constant since 1900") and two alternative hypotheses in the second paragraph. I have also introduced the concept of one-sided and two-sided hypothesis tests. I now believe that paragraphs two and three of my manuscript comprise one of the shortest introductions to statistical hypothesis testing ever published. To stress the importance of sample size in determining the outcome of statistical hypothesis tests, the revised manuscript considers the consequences of reducing the earthquake database by a factor of 10, which results in a failure to reject the null hypothesis. I think that this short addition to the last paragraph puts the nail in the coffin of hypothesis testing in terms that are understandable even to the less numerate readers.

I hope that you will find the ammendments to your satisfaction and look forward to hearing back from you,

Sincerely yours,

Pieter Vermeesch

