Dear Professor Vuolo,

I would like to thank Sociological Methodology for conditionally accepting my paper for publication. I have incorporated Paul von Hippel’s recommended changes into this most recent draft. In response to Paul von Hippel’s request that I share my data and code, I have created a Github repository where the public data and all the code needed to recreate the tables and plots based on the public data can be found. This repository provides instructions for reproducing these results. I provide links to the Lorenz interpolation R package and the repository for reproducing these results in a footnote that comes at the end of the abstract of the paper.

I have also revised the parts of the paper that talk about the theory of why Lorenz interpolation provides more accurate estimates than MCIB or CDF interpolation. In the previous draft, I suggested that Lorenz interpolation produces less positively biased estimates of the closed bin means, resulting in a better estimate of the top bin mean. Paul von Hippel disputed this point in his response letter. In my latest draft, I have removed this suggestion from the introduction. Instead, I simply state that Lorenz interpolation produces better estimates of the income distribution upper tail. This is evidenced by the lower relative bias and relative RMSE of the open-ended bin mean at the top of the income distribution, as shown in Table 2 of the paper. I have also added a footnote stating that the theoretical advantage of Lorenz interpolation is not entirely clear. In the footnote, I credit Paul von Hippel for suggesting that Lorenz interpolation’s advantage may come from the Lorenz curve being a smoother function than the CDF and better approximated by a cubic spline. I also suggest that the improvement of Lorenz interpolation may come from the rules according to which the cubic spline produced by Lorenz interpolation is defined. Furthermore, Paul von Hippel suggested that I drop a paragraph on page 6 in which I said that Lorenz interpolation produces less positively biased estimates of the closed bin means. I have removed this claim in the latest draft.

The third significant change in the most recent draft is that I have revised the section in which I derive the PDF of the income distribution produced by Lorenz interpolation. First, Equation 10 in the previous draft had an incorrect subscript. I fixed this. I have also specified which variables the derivatives in this section are taken with respect to. Finally, I have added a comment on why the PDF at the end of the derivation has a few spikes in the upper tail. These spikes result from the PDF implied by Lorenz interpolation, which consists of a set of square root functions. When these functions underestimate the bin means, the resulting PDF has spikes at the bin lower bounds. I also point out that Lorenz interpolation still produces accurate estimates of bin means, income shares, and quantiles despite the presence of these spikes.

Finally, I have made significant revisions to the section in which I explain how Lorenz interpolation works (the section entitled “Building a Lorenz Curve from Grouped Income Data”). Paul von Hippel found this section to be unnecessarily complicated. I have reduced the length of the section from three pages to one and a half pages and removed some of the notation. I also turned the paragraph in which I show how a system of linear equations can be used to compute the coefficients of the estimated Lorenz curve into an endnote. Hopefully the new version of this section is clearer and more appropriate for the target audience.