Reviewer 1: The manuscript "Statistical analysis of word flow among five Indo-European languages" presents an approach to describe how words have flowed from one language to another over the course of at least a century. They use data from Google Books N-gram to describe these transitions. It is an interesting topic but I feel that there are some severe limitations in calling this a statistical analysis and the conclusions that come from it.

1. The abstract does not adequately describe what the reader will find in the paper. The title and abstract both make it sound like there will be statistical methods and results to discuss, yet there is not a true use of statistical analyses to be found in this manuscript.

   We have changed the title of the paper from "Statistical analysis of word flow among five Indo-European languages" to "Analysis of word flow among five Indo-European languages" and modified the abstract avoiding the use terms related to statistics.

2. On page 2 it is stated that there are two "models" used to quantify the influence of one language on another. However, these are not statistical models that are being used. They are simply two different transformations of the data. "Approaches" is a better word than "model" although there are other words that would also be suitable, but model is not a suitable word to describe what is being done.

   Indeed, the word "approach" is more accurate than "model". We have made the appropriate replacements.

3. Later in that same paragraph, after describing the "models" being used, there is a statement "...that are responsible for the flow of words." This sounds like a statement of causal inference. However, all that can really be said is that various things have been identified that might be related to the flow of words. There is no causal pattern or analysis within this manuscript.

   We changed "...that are responsible for the flow of words." to "that are related to such words."

4. At the end of the introduction is the following sentence. "Our work is of a statistical nature, and as such, has its limitations." I did not find a statistical analysis in the manuscript so saying that this manuscript is of a statistical nature is not accurate. There are data descriptions throughout the manuscript, and some transformations of the data, but there are no statistical analyses to describe the patterns or possible relationships.

   We have changed that paragraph to avoid the problematic terms, without changing the main idea that we wanted to communicate.

5. In the first paragraph of Methodology I would make the following change. "We removed certain words that did not contributed to the analysis:" to "We removed the following types of words:"

   Done

6. There is a description of data cleaning and then the following sentence. "From this dataset, and after cleaning the data,..." This makes it sound like there was additional data cleaning in addition to just removing certain types of words. This should be more specific in what is meant by data cleaning.

   We added the details required by the referee.

7. At the end of Methodology is a paragraph with some concluding remarks on the errors. It would be helpful to know how many errors like these were found and what proportion of the full dataset consisted of such errors. Also, I agree that it would be helpful to have included experts in each language that is being included in this analysis. codigo

8. **mapas de Distribucion de palabras**Below Figure 1 on page 3 is the sentence "Thus, it could be said that the second most influential language among the five studies has been Italian." Is there a statistical measure or test that can be pointed towards as validation for this statement? codigo

9. **1/2 Ajuste de ley de potencias**The very last sentence of New Words reads "...within statistical fluctuations, an asymptotic power law decay with an exponent close to one." What is meant by statistical fluctuations? That infers that there was a statistical model with a measure of variance. Was there a statistical model fit with these curves to evaluate the fit of a power-law decay? codigo

10. In Accumulated Words is formula 1. The description of the formula describes using both frequencies and ranks and it is not clear how both are involved in the calculation. Also in formula 1, it is not clear how j and k differ. What does j range to since U(t) is not indexed by j so there are multiple j values being summed. How does j relate to k?

11. **Histogramas de distribucion de retornos** In the English section under Accumulated Words it states that "the use of English in French and Spanish has increased steadily in the last century whereas in Italian, it has maintained a constant level." This is an observational description of trends seen in the data and there is not a statistical model and analysis to evaluate if trends are constant or increasing at some rate. It would be nice to include those trend rates. The same is true for the French, German, Italian, and Spanish sections. codigo

12. Under Rank Diversity, why not just use the counts rather than this Rank Diversity measure. It seems that the figures shown of Rank Diversity could also be shown using the actual counts. Since the actual counts are simpler to understand, then it would be easier to describe the results. If the Rank Diversity does add a detail and interpretation that is not feasible by using the counts, then this justification should be included.

13. In Figure 5 and equation 2, the year is changed to log base 10. Please explain the rationale for this and make it clear to the reader that this is being done and why it is being done.

14. In Figure 5 and equation 2, were any other functions considered besides the cumulative Gaussian function? There are other sigmoid shapes that could be used so why was this one chosen? Also, what is meant by mu and sigma were obtained with a linear regression. This is a nonlinear function so it would be nonlinear regression to estimate those parameters and were they estimated using nonlinear least squares or maximum likelihood or something else? Then for the results of this, why can that conclusion of migrant accumulated words in the middle and high ranks are the ones that tend to change their position. How exactly was this determined because it is not obvious from the equation or from the figure. codigo

15. Although Google Books N-gram data are available for download, the specific cleaned data used in this analysis should be made available. anexo de palabras funcionales eliminadas??