



The Life of Milarepa: Developing a Relational Database with Nodegoat

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Introduction



TSANGNYÖN HERUKA
THE LIFE OF MILAREPA

Figure 1: Penguin Classics' Edition of *The Life of Milarepa* by Tsangnyön Heruka

The Life of Milarepa is a Buddhist text chronicling the life story of the siddha, Milarepa. The story itself is famous in Tibet with the version told by Tsangnyön Heruka being one of the most famous. While the events of the story might not reflect a historical truth of Milarepa's life, they represent a narrative truth that is valued in conjunction with the text in Tibet. Hence the actual chronology of the book can be used to analyze his life story through the twelve chapters and the various paragraphs within those chapters rather than calendrical time. Using Nodegoat, a data management and network analysis software, this chronology serves as a way to develop a database to analyze various aspects of the text across the life story. This database provides opportunity for textual, character, and geographic based analysis.

Methods

In order to create a relational database for *The Life of Milarepa*. It was important to think about important features of the text that can later serve as data points in future analysis. The first of these would be to create a chronology of the text. In order to trace these various features of the text across time. Despite have a loose birth and death date for Milarepa, it would be nearly impossible to link the events of the text with months, days, and years as the unit of time. As such, it was necessary to develop a unique chronology for the text itself. Pictured in Figure 2 is

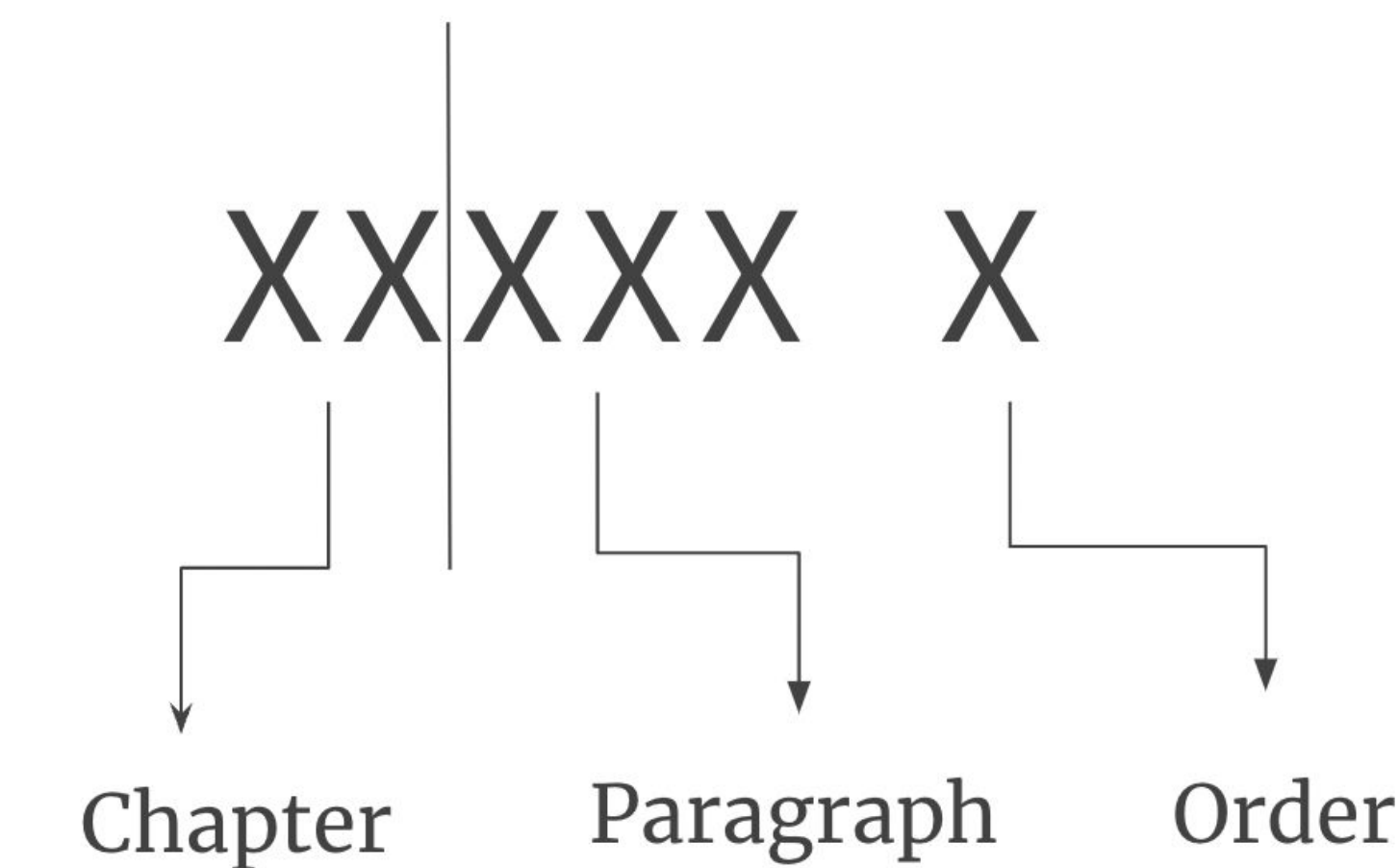


Figure 2: Format of the Chronology Used to Convert Chapters and Paragraphs into Years for Nodegoat Implementation

the specific format used to turn the text into a chronology. For implementation into Nodegoat, it was necessary to convert the paragraph into a year. As such, we used the year 1001 to start with chapter one, paragraph one and increased the year by one for every subsequent paragraph in the chapter. For the next chapter, the millennium would change. For example, chapter two, paragraph ten is notated as year 2010. Finally, Nodegoat allows for one additional number, which was used in order to notate different line numbers of songs or split paragraphs up further, if necessary.

The next important feature of the text is the characters. For the most part, *The Life of Milarepa* is told by Milarepa, narrating chronologically through his life story. However, this is not always the case. There are moments where other figures like Milarepa's aunt, Khyungtsa, and Milarepa's teacher, Marpa, take the focus of the narrative. Thus, every character mentioned throughout the story is linked to the chapter/paragraph that they are mentioned both explicitly (literally in the story at that time) or as a reference (a character or narrator mentions that person). To be able to successfully trace a specific character's arc throughout *The Life of Milarepa*, it was also necessary to understand when a character was implicitly part of the "scene" occurring in the text. For example, not all dialogue between characters mention who the speaker is, but through the context of paragraphs before and after, it is possible to determine who is speaking. If this was not included, important data would be lost. Having this data on characters across the text allows for analysis about relationships between characters. For example, the relationship between Milarepa and Marpa through both the location in the text and how much of the text they share together could serve as a study into the Buddhist teacher/student relationship.

The third important feature studied is text type. A big part of the text is the songs that various characters sing. These are distinctively different than prose of the text and thus part of the Nodegoat implementation was marking these various text types which include: prose, songs, letters, prayers, vows, quotations, and framing text (usually the last sentence of each paragraph summarizing the events of the chapter). This data allows for analysis about the text's compositions, looking at the way that the text changes across the story.

The final focus was location. Similar to the implementation of character, the text could explicitly reference the movement to a place or reference a place. Much of the time, however, the place is implicit. These places include both coordinates and names, so that future geographic analysis can be done, looking at the importance of location throughout the text and notably tracing Milarepa's journey across the text physically.

Results

I. Text Composition

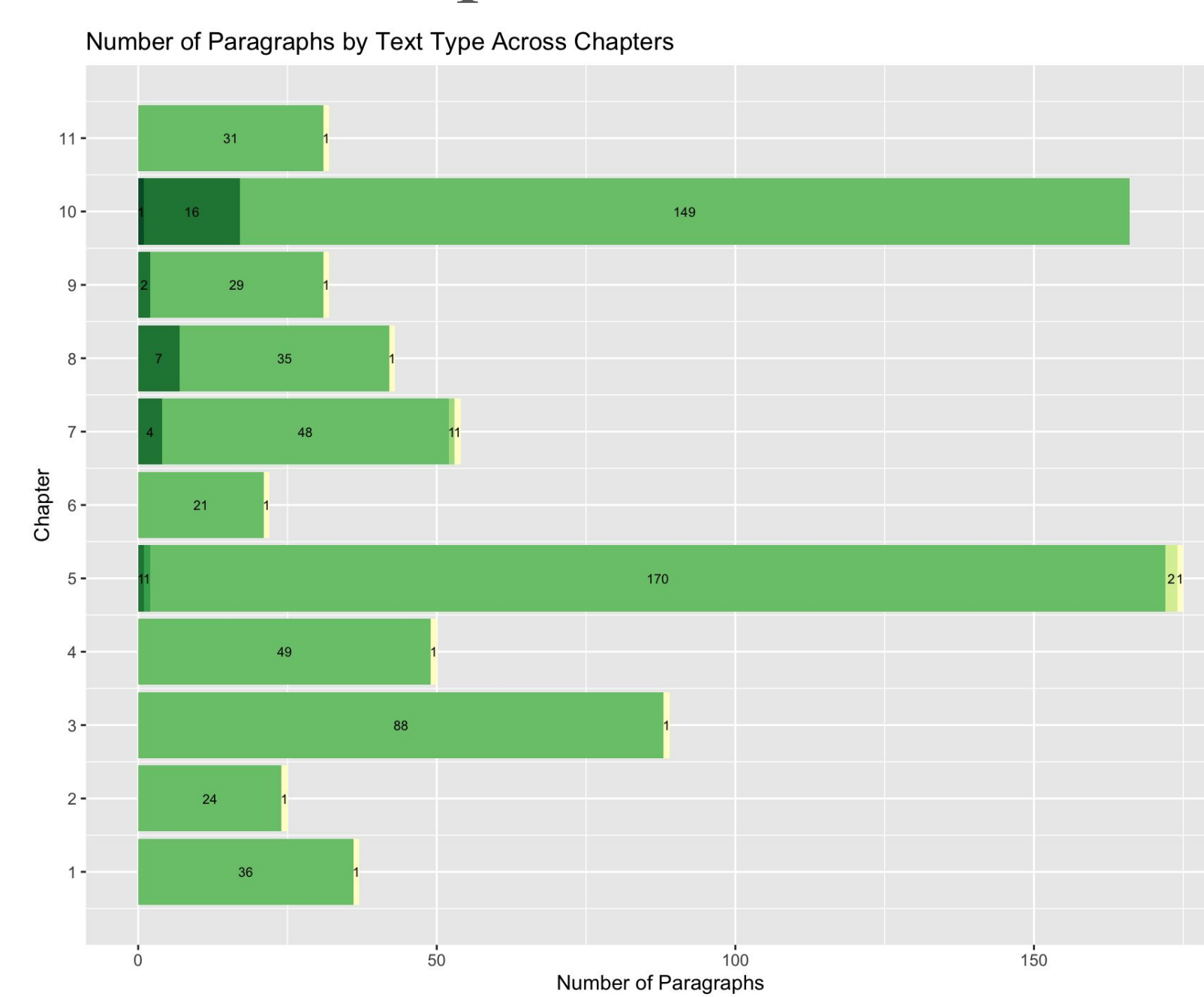


Figure 3: A Comparison of the Text Type of Paragraphs Across Chapters

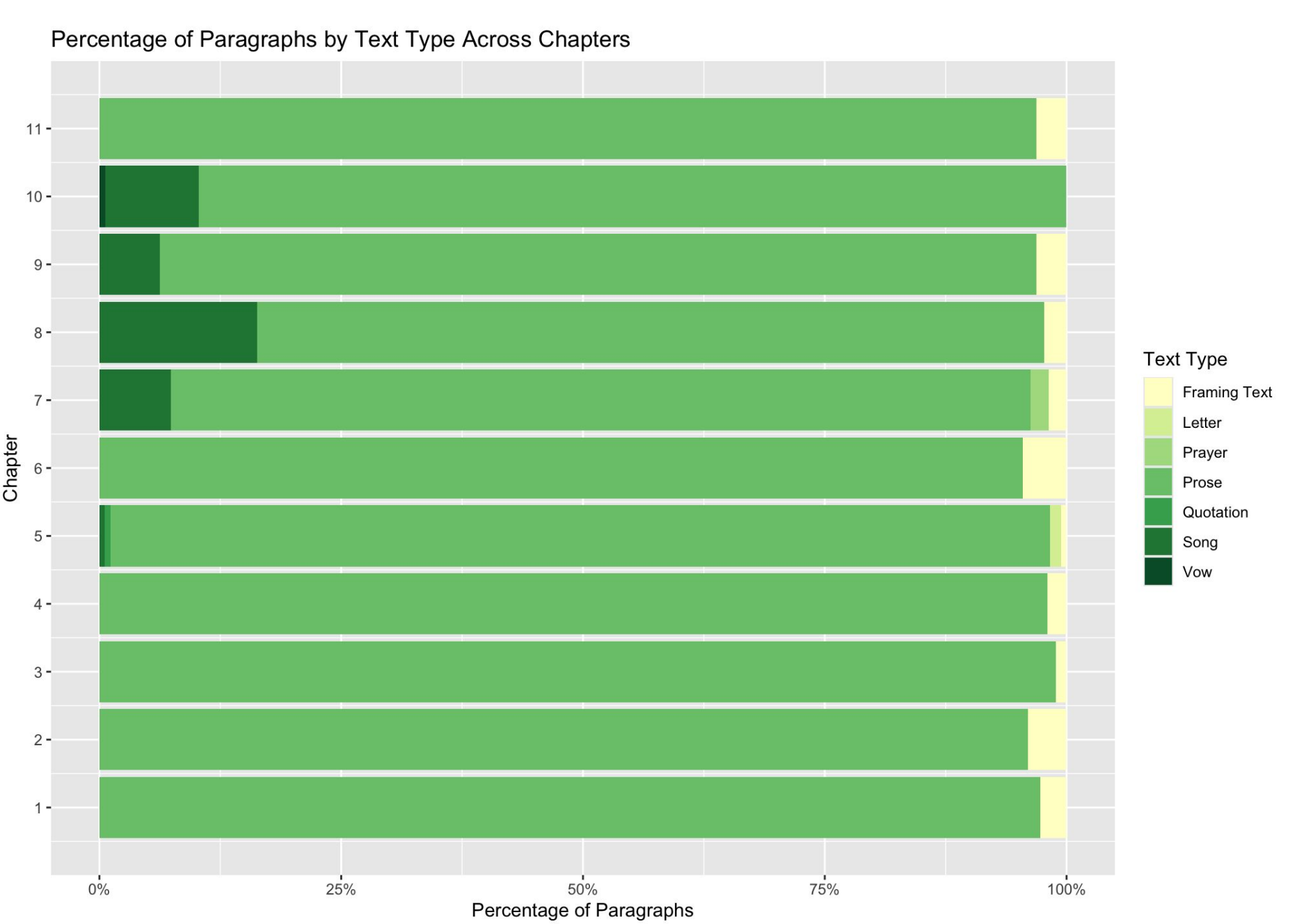


Figure 4: A Comparison of Percentage of Text Type of Paragraphs Across Chapters

II. Character Analysis

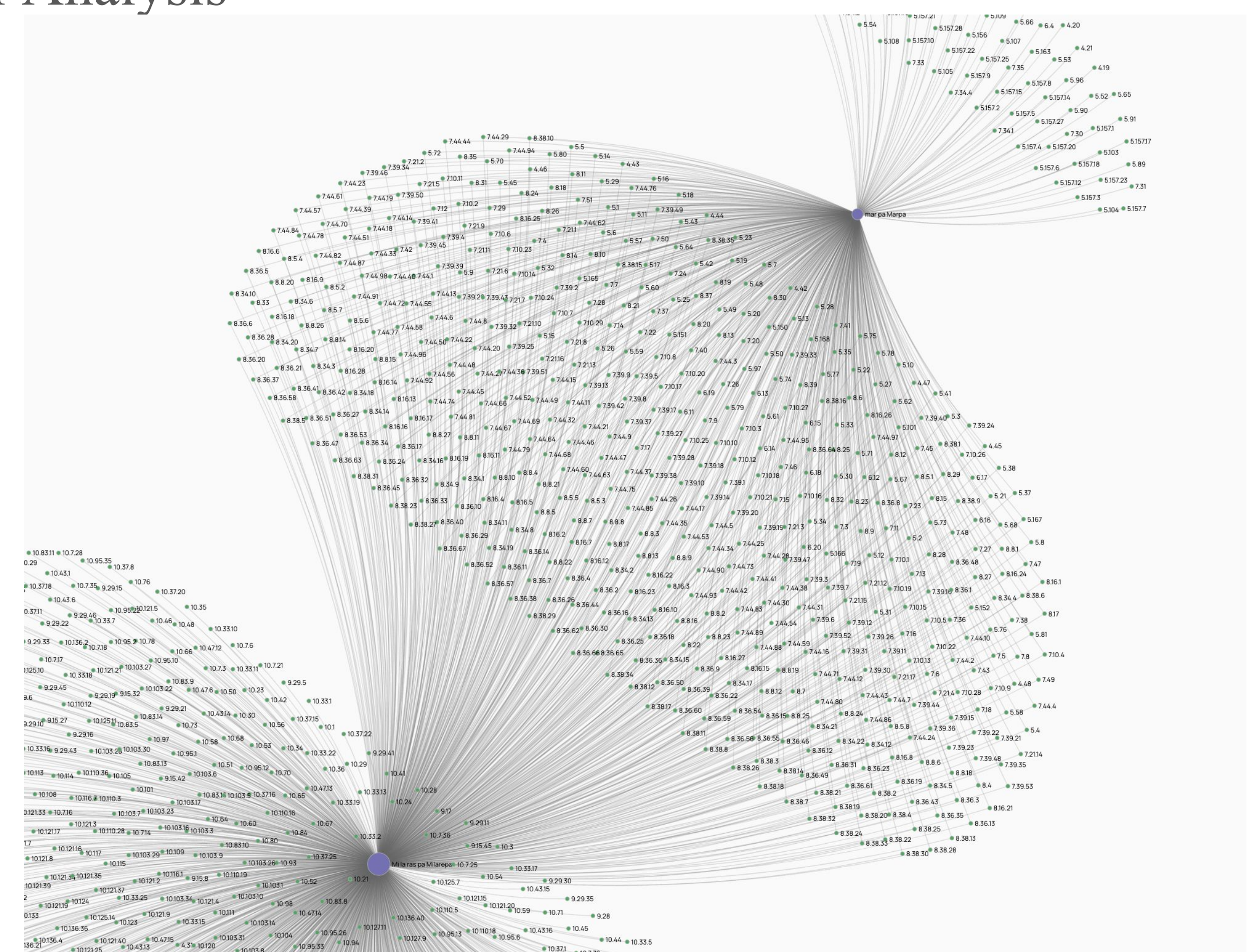


Figure 5: Social Visualization Showing the Connections Between Milarepa and His Master, Marpa

Discussion

As this project is still in progress, much of the results are not finalized. However, these preliminary results demonstrate some of the possibilities of the database for future analysis. First, by downloading information from Nodegoat, the two bar charts created in R demonstrate some of the potential for analysis about the makeup of the text. As songs are critical to the latter half of the text, the percentage of songs in the text in Figure 4 show the ways in which the text types, including songs, change across the chapters with prose still being the dominant way the narrative of the text is told. The other main focus of these preliminary results is the way that characters can be compared using Nodegoat's social visualization tools. In Figure 5, the connections between Milarepa and Marpa are shown in the center with their other appearances in the text (both explicitly and implicitly) are display not connected to each other. This visualization can be used to better understand the master/student relationship of theirs through their relationships across the text.

Future Work

The main path forward to continue the work on this project involves continuing to perfect the database. First, the prologue and the final chapter of the book still need to be added in order to have the complete book included. In addition, a lot of work still needs to be completed to add specific coordinates to locations. These changes will allow for a fuller understanding of the analysis possibilities. Much of the database also still needs to be refined with editing. There are many questions that can be fleshed out including uniquely Buddhist questions like what to do about locations in dreams and Milarepa's traveling while he meditates. Finally, there is still room to add the other prominent Buddhist text about Milarepa to the database, *The Hundred Thousands Songs of Milarepa*. This will require some reworking of the database, but will give a fuller story of Milarepa's life story as understood in Tibet.

References & Acknowledgements

Heruka, Tsangnyön. *The Life of Milarepa*. Translated by Andrew Quintman. New York, NY: Penguin Books, 2010.

Thank you to both Professor Quintman and the Quantitative Analysis Center for continued support on this project.