

Mapping Charlemagne's Movements and Infrastructure Projects

Introduction

Charlemagne has been examined and studied by historians for years... Charlemagne ruled from 769 A.D. to 814 A.D. during the Carolingian Era and ruled over Gaul, which is known today as France, Northern Italy, Western Germany, and a small portion of Spain. His kingdom stretched over 800 miles from east to west and included many diverse peoples. It was his quest to unite the kingdom and he tried to do so through military conquests, spread of Christianity, and standardizing education, but he mostly focused on military campaigns. While reading the *Royal Frankish Annals (RFA)* we noticed that Charlemagne was really investing in building infrastructure projects to help travel, communication, and trade throughout his kingdom. After seeing mention of many infrastructure projects he had built and most of which he personally oversaw, we decided that these projects would be the main focus of our research and came up with the following questions to explore:

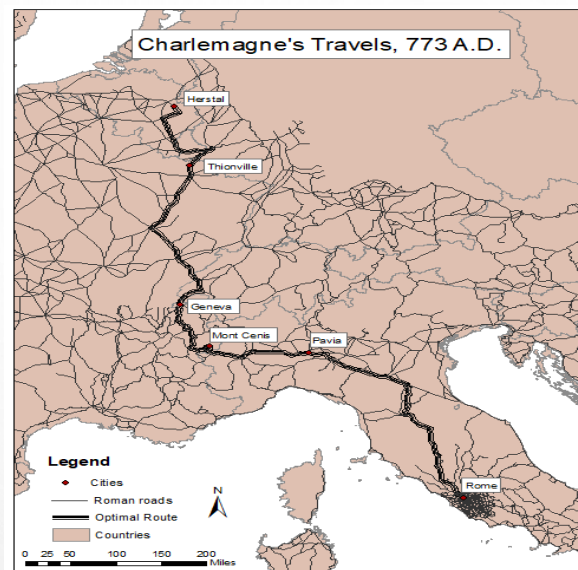
- Why did Charlemagne build (or attempt to) these projects where he did?
- Why were they built during that specific year?
- Are there any geographical links between these buildings (i.e. clustering?) or to Charlemagne's movements?

Research Objectives

Working with Dr. Torgerson's team from Wesleyan University we wanted to learn the process they were doing with the *Chronicles of Theophanes* but with a different primary source. Taking a geographical approach to the infrastructure Charlemagne built is something that has not really been done before and by doing it we hoped to aid in the understanding of the how Charlemagne ruled, how his infrastructure projects affected and helped him in his goal to unite the empire, and learn more about the Carolingian administration by taking a ground up approach instead of a top down viewpoint.

References

_____, *Royal Frankish Annals*, trans. Bernard Walter Scholz and Barbara Rogers, in *Carolingian Chronicles: Royal Frankish Annals and Nithard's Histories* (Ann Arbor: University of Michigan Press, 1970).



Abstract

Using MAXQDA, a text mining software, and Geographic Information Systems (GIS), we planned to look at the geography of Charlemagne's travels and the infrastructure projects he has built over his reign. A translated copy of the *Royal Frankish Annals (RFA)* was our main primary source throughout the project but we also used the *Life of Charlemagne* by Einhard to supplement our understanding of Charlemagne. Infrastructure we were mostly concerned with were bridges, castles, a lighthouse, and a canal he started in 793 A.D. but never completed due to weather conditions. Starting out with text-mining we used a system of tagging words and sentences to find spatial patterns between Charlemagne's movements and the projects and between the projects in the *RFA* themselves. We had hoped to move on to using a GIS after our text mining was complete but it looked like we would not have enough time in the semester to go that far so we decided to stick with just using MAXQDA for the text. MAXQDA, however, crashed and we lost all of our research for the semester. After this happened we decided it was not possible to recreate our data in the time we had left so we pushed on and borrowed data from a GIS project from another class to focus on just looking at Charlemagne's movements across the empire.

Method

Even though we were working with a different text than everyone else on Dr. Torgerson's team, we decided we would go through the same steps and processes his team did. Starting with MAXQDA we wanted to text mine the section of the *Royal Frankish Annals* that covers Charlemagne's reign. This text is part of the *Carolingian Chronicles* and goes year by year to describe what happened that year that was worth writing down. We planned to use MAXQDA to look at the overall geography of the text and also focus in the infrastructure to find any patterns in the text before we moved on to a GIS. Unfortunately, after almost text mining our entire document, MAXQDA crashed and lost our file with all of our data in it. We had copied folders in a shared drive with Dr. Torgerson but even those would not open. Dr. Torgerson also lost about two years of research and data so this crash was a bit of a group disaster. Although we were shocked and upset that our work has completely vanished, we decided to push on and move directly to mapping to salvage some part of our project and hopefully return to text mining at a later date but using a different software. Because of this setback we decided to turn our attention to mapping Charlemagne's movements across Gaul.

Results

Our results from text mining are still inconclusive but switching our focus to mapping Charlemagne's travels across the kingdom allowed us to visually see how his focus on certain areas of the kingdom changed over time. We chose to map the years 773, 800, and 811 A.D. We chose 773 and 812 A.D. because they were right at the beginning and end of his reign and 800 A.D. because it was one of the few times he traveled to Rome and it was for his crowning as emperor. We ran a network analysis in a GIS of these years using a Roman roads shapefile downloaded from the Digital Atlas of Roman and Medieval Civilizations website from Harvard and discovered that he traveled over 3500 miles during just these three years alone.

Conclusion

Although our original project took a crash we were still able to come back from it and create some maps that gave us interesting numbers about Charlemagne's travels and allowed us to visually see the patterns we were finding of Charlemagne's travels in the *Royal Frankish Annals*. We would like to find a new text mining software and restart text mining in order to analyze the text that way in addition to our maps.