Data Visualisation Final Report: London Lit Map

Kyle Dase and Brendan Swalm

Data Visualisation [G0R04a]

Professor Katrien Verbert and Francisco Gutierrez

**Motivation**

This project combines Charles Booth’s 1889 map of poverty and criminality in London with significant locations in *fin-de-siècle* horror fantasy, creating a geographical representation of the 19th-century reader and author’s perception of space in London. This method of visualization allows readers to explore relationships between the London of the late 19th century, perceived as a deterministically economic space in which wealth and status were negatively correlated with criminality, and the fantasy of horror, the uncanny, and the invading Other that threatened to destabilize or subvert established relationships of power and society in the city at the turn of the century. The situation, and potential mobility, of the Londoner/protagonist (and, in many cases, the reader themselves) as Self, and that of the destabilizing Other take on a unique *legibility* when their places and paths are not only textually, but visually marked on and within the mapped city.

**Dataset**

Our dataset is best understood in three categories: Booth’s own map, a 19th-century visualization that associates poverty with criminality in a way that is different from the associations made by a modern reader; significant locations selected from 19th-century horror fiction novels (currently *Dracula, The Strange Case of Dr. Jekyll and Mr. Hyde,* and *The Beetle*); and significant crimes and events that impacted and reconfigured the concept of space in the mind of the London public (currently only the locations of the Whitechapel murders of ‘Jack the Ripper’). These data are placed on top of the base map of London provided by the Google Maps API.

**Visualization Design and Implementation**

As Booth’s map is itself a visualization of economic data, we decided to use it as a base upon which to expand. The value of our additions to this visualization are in understanding the correlation between different aspects of horror depicted in these works and the perceived relationship of geography to poverty and criminality. The ways in which this relationship is borne out by both Booth’s map and the contemporary literature become visually identifiable.

**Reflection**

One of the core principles of visualizing data is that it allows the mind to easily grasp patterns and relationships in information that would be difficult or impossible to grasp otherwise. This is at the heart of our project: while the majority of 19th-century readers of these works would have been Londoners with a well-developed sense of space and geography in the city, today these works are read all over the world by people who have never even been to modern London and certainly have no concept of the spaces and geography of 19th-century London. Our visualization remedies this by providing notions of regions in which works take place, the distances traveled in significant scenes, and relationships between history and fiction.

For this project and future projects of a similar nature, the use of an accurate and high-quality overlay map contributes to the user experience and exploratory interaction encouraged by the Google Maps API. Using a high-quality overlay image for this project required the stitching-together of the twelve separate map sections produced by Booth in order to create a single map of London. This necessarily led to some inaccuracies and loss of data in the overall visualization, as well as an imperfect match in certain areas between the overlay and base maps. If the project were to be redone, a better assemblage of the maps would have to be sourced or produced to minimize dissonance between the two presented maps. In addition, future projects of this type could benefit from automated mining of place-names and paths in the texts used, although their context and significance to the texts being mapped would nonetheless require critical (non-automated) interpretation.

**Effort**

Each aspect of the project required work of a different nature to complete, but the main challenges in preparing the project were sourcing and assembling the map and finding a method for accurately overlaying the map within the Google Maps API. The task of assembling the separate maps into a single high-resolution image while minimizing inaccuracies introduced in the process, such as misaligned streets or areas lacking the colouration indicating their level of wealth or poverty, was time-consuming and difficult to accomplish, and produced a map that is less than exact in certain areas (although this inaccuracy is mitigated somewhat by the inclusion of an opacity control). For minimizing potential difficulty in overlaying the map accurately, we resorted to the MapTiler application, which provides an interface for placing synchronized points on both the overlay map and the base map before creating the ‘tile’ images of the overlay map for each level of zoom. In this way, the overlay can be placed accurately overtop of the base map when (as in our case) the overlay map is irregular in shape and knowledge of exact geographic coordinates for the overlay map is lacking or inadequate.

The other primary activities in preparing the project, gathering location data from the literature, populating the map with locations and descriptive information, and designing the interface, were time-consuming but relatively trivial. In particular, while automating the gathering of location data from the texts would lighten the workload, the significance of the locations and the context in which they are given would still require consideration. This project provides a certain perspective for distant reading of multiple texts and of the London in which they take place, but does not and cannot replace or obviate the reading of the texts themselves.

We each took on responsibility implementing different aspects of the project then, once these aspects were achieved, worked together to move the project from first prototype to the state it is in now. At first, Kyle created a single image of the Booth map from the dozen images available by cropping them and stitching them together while Brendan learned how to add custom regions, paths, and markers to a blank Google map. Next, Brendan found a way to impose the Booth Map over the Google map with a functional opacity filter while Kyle created a functional navigation bar that filtered the user’s selection by work.

**Conclusion**

Considering our limited experience with data visualization and certain technical aspects of the project at its beginning, the final product achieves that which we set out to do and provides a reliable proof-of-concept for future projects of a similar kind. The outcome of the project can be greatly attributed to not only the information and resources provided in class, but also to the great assistance and practical learning environment provided by the instructors of the course, without whom we would have taken much longer to figure out certain aspects of the design of the visualization.Considering the challenges in creating the visualization, future projects of this kind would benefit from more readily-available resources for high-resolution map images that would not require as much pre-processing, and potentially some manner of automated text-mining for location names and data. However, the project in its current state demonstrates the potential for visualizations of the geographic and urban spaces represented in a body of literature to add to both the reading experience and critical analysis of that literature, and to realize and visualize the unseen interactions between space, themes, and concepts both in and among contemporary and explicitly located literary works.