Relocating Rembrandt: Provenance Visualization

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Background

- Efforts to restore art looted during World War II have led to increased focus on provenance data.
- Governments, museums, and private collections are publishing provenance records.
- Visualizing provenance data enables the exploration of the narrative of art pieces. However, little has been done to consolidate, standardize, and visualize the available provenance data.

Approach

- Due to the time constraints of this project, only paintings by Rembrandt Harmenszoon van Rijn, a Dutch painter from the 1600s, were visualized.
- The data from the Getty Provenance Index included 688 of entries representing 83 art pieces at 91 unique locations.
- Handling missing data:
    - Dates: Unknown dates are extrapolated from known dates of the previous and next location. The resulting uncertainty is visualized by including "(est.)" when extrapolated dates are shown.
    - Locations: When the location of a piece is unknown, the known information about the piece is displayed without visualizing geographic location.
- Tools:
    - Tableau - visualizing one painting as an initial exploration
    - Excel - manual data cleaning, including parsing initial text data, estimating unknown dates, and calculating latitude and longitude for each city
    - R - automating data-cleaning process by assigning latitude and longitude to corresponding cities
    - Javascript and the D3 library - mapping the geographic information and handling interactive features

Visualization: After choosing a year, 1873, and a piece, "Lucretia", the locations of the piece throughout time are indicated with black dots. The location in 1873 is represented with a blue dot. The lines indicate the paths travelled by the art, where the color transitions from red to yellow as years progress.

References

- Getty Provenance Index® databases. J. Paul Getty Trust

Challenge

- Provenance records are frequently published as transcriptions of handwritten notes and sales record. This format is difficult to manipulate in data-processing tools.
- Information on dates and locations are frequently missing from the data.
- Lots of manual work is needed to prepare data for visualization.
- This data requires the visualization of art pieces across the dimensions of time and location, which can be challenging to highlight for individual pieces and for many pieces as a whole.
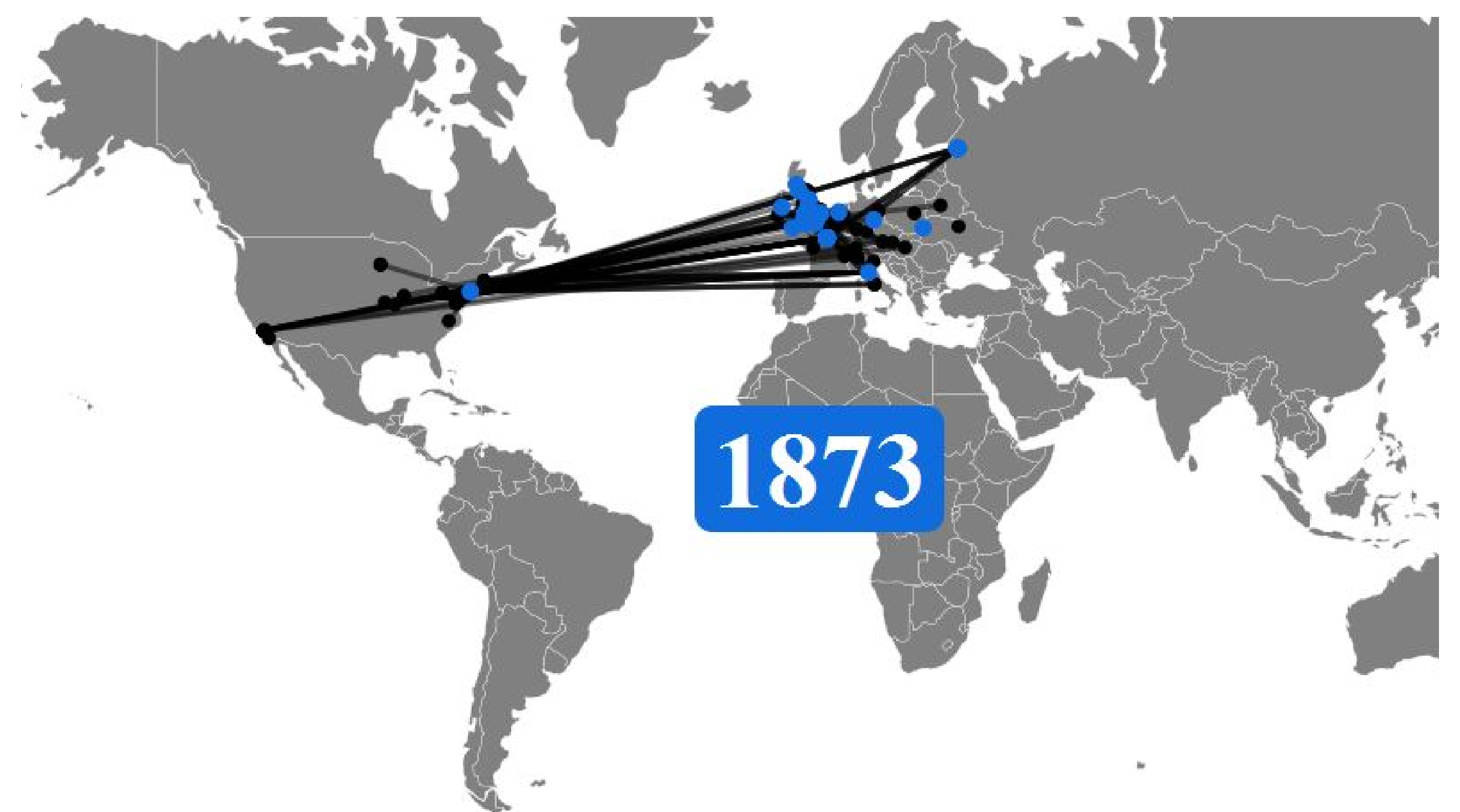
Visualization: The blue dots represent the locations of Rembrandt art pieces in 1873. The black dots represent the location where Rembrandt art was located at any point throughout time. The black lines represent paths the art has travelled.

Results

- Producing this visualization required the establishment of a specific format for provenance data required for such a visualization, including the accession number, title, years at the location, location name, location latitude, location longitude, owner, and an indication of whether a date has been extrapolated.
- This visualization illustrates the general movement of Rembrandt art pieces over time. Up until the 1900s, most of Rembrandt's art was clustered in Western Europe. As the 1900s progressed, art began to trickle into the east coast of the United States. Following World War II, many pieces were relocated to the United States.
- In addition to visualizing the general movement of Rembrandt's art, this visualization also allows the user to see where a specific piece was located in a specific year and how that location was related to the piece's other locations throughout time.

Future Work

- Develop a text processing tool to automatically clean and format provenance data
- Experiment with alternative methods of visualizing missing locations and dates
- Incorporate additional interactive features, like allowing viewers to examine provenance patterns for a particular art style (eg. Baroque) or in relation to major historical events (eg. WWII, Industrial Revolution)
- Prepare and include additional data in the current visualization