Memories Around the Corner

Understanding the Patterns of NYC Honorary Street Naming History

Jiahui(Jessie) Han

Parsons School of Design

Master of Science, Data Visualization

Abstract

NYC honorary street names, or co-names enacted by the City Council, can be found above or below the primary street-name signs throughout the five boroughs of NYC. Over the 30 years of enactment of this practice documented officially, communities, local activists, and politicians have petitioned more than 2500 honorary street names, to honor people or organizations of special significance to a particular community or neighborhood. Simultaneously, co-names can be seen as an approach to remap the city in a local sense, interweaving its past, present, and future. However, for consideration of legal and bureaucratic costs, honorary street names have never been accessible to the public either through an analog city map or a digital database.

How are communities in NYC preserving their heritage through commemorative street naming? And How have co-names entangled with the cultural/political atmosphere? This project surveys the NYC honorary street names, by applying both quantitative and qualitative analysis and data visualization. The source data are collected and parsed from the City Council's legislation files, and further aggregated with GIS information and text analysis. As a result, this project transforms the practice of honorary street names into a more accessible format and creates a generated city landscape of memory.

Table of Contents

Ceremonial street naming

Naming, Place-making, and Power: From the perspective of critical toponomy

Ever since the 1980s, toponomy, historically a subfield of linguistics that studies place naming as "transparent signifiers" that designate places as "objects" or "artifacts", has shifted its focus on the entanglements of place naming with power relations, arguing that toponyms are not "ideologically innocent" but rather "power-charged semiotic dynamos". Therefore, the perspective of "critical toponymy" has emerged, which holds that place names that have "performative power to shape place" (Rose-Redwood) by drawing insights from social and cultural theories, such as Michel Foucault and Edward Said, to help conceptualize the power relations inherent in geographical place naming.

The key concepts with regard to critical toponomy involve redefining and re-evaluating three components: naming, place-making, and power (Berg). In contemporary capitalist urbanization, place names are not only used for administrative purpose and normalizing strategy, but also have implications for categorizing, classifying, hierarchizing, and prioritizing and is "central to contemporary forms of the commodification of the city". (Madden). Recent

interventions in critical geography and fields of social theory have adopted the conception of "social spatiality". For example, Doreen Massey has influentially defined place as a unique conjunction of social relations (Berg).

The power dynamics of place naming differ from population segments of different social-cultural situations. For segments that support the status quo of power relations, it is of high possibility that toponymies have been taken for granted as the populations' intuitive "common sense", such as "Wall Street" as a symbol of global financial markets and wealthy lifestyles. On the other hand, in cases of high socio-cultural tensions or stakes, the struggles of toponymies can be seen in everyday life, such as campaigns for re-naming rights and the use of alternative names and pronunciations.

Honorary street naming in New York City

The place naming of New York City has long expressed political power dynamics, especially in the naming of neighborhoods and public housing projects. Campaigns to rename neighborhoods have been adopted as a form of political action against or resulting from inequality and gentrification. In the 1930s, parts of the Brons were known as the Communist Quarter. And in the 1960s and 1970s, with the booming of real estate development in Downtown Brooklyn, the "Brownston Brooklyn" was coined to promote a picture of middle-class residents

living in historical reconstructed brownstone buildings (Lechtzin). Still, there are also cases where toponymy is a form of positive political action. For example, Southside Williamsburg in Brooklyn is known as Los Sures, the name of a largely Puerto Rican housing activist group. Street co-naming, or Honorary street naming in NYC, can also be viewed as a positive toponymic move.

Honorary street naming, or ceremonial street naming policy, is a Local Low by the City Council where a person or group proposes the ceremonial name to the local Community Board to honor the person or organization who made significant contributions to the community. According to the New York City Department of Transportation (DOT), it is highly suggested that the "the Council Member designate a small block stretch for the naming" and "the naming may only contain 36 characters and spaces" to be fitted into a street sign.

For over thirty years of the enactment of this Local Law, more than 2500 honorary street names have been established. The intentions of street namings have shifted over the years, as a result of the socio-political atmosphere, spanning from historical figures who are associated with a certain neighborhood, to 9/11 heroes after the tragic event in 2001, to historically under-represented people and groups in efforts of activism movements such as Black Lives Matter. Thus, what social, cultural, and political impacts of NYC street co-naming have, as discussed from the perspective of critical toponomy? What can be learned by the public from examining the honorary street names? First and foremost, it is important to have an accessible collection of the records of street names.

Despite the communities efforts and the Mayor's endorsement of establishing these co-names, public access to records of the honorary street names has been very limited. For consideration of legal and bureaucratic costs, the honorary street name will not appear on the City map, although the co-names are officially recognized. The only way to access the records is through the City Council's legislation files published via an online database. However, these files are collections of meeting notes and committee reports, which require extra effort in deciphering and parsing the information. By the time of the completion of this paper, Honorary Street Names (http://nycstreets.info/) is the only accessible database listing records of NYC street co-names, collected and organized by Gilbert Tauber, a retired urban planner who worked as a volunteer guide for the Museum of the City of New York and for the city's Convention and Visitors Bureau (Roberts).

Design Treatments

The purpose of this data visualization project has two folds, one is to provide an educational tool for the public to view and study the history of honorary street names, and the second is to build a generated landscape of NYC using honorary street names as an artistic practice. Precedents and practices from multiple fields have been referenced in the creation of this project, including data visualization projects which use mapping as the primary methodologies, projects in the applications of multi-dimensional visualization modes, and projects specifically about street names that emphasize storytelling and narratives.

The praxis of mapping in data visualization

Throughout history, maps have played a significant role in the development of humanities, which have long been used for generating information and knowledge, for spatial orientation and exploration. With modern technology such as Geographic information systems (GIS), the world has become more accurate and accessible than ever before. At the same time, the monopoly of commercialized mapping services has raised more and more concerns about systemic biases in recent years.

Maps have also been adopted as a tool and practice for many artists and activists with the convenience of mapping technology. Participatory mapping is one approach to alternative mapping making which synthesizes collective knowledge and unveils what has long been ignored by the modern standard GIS mapping.

For example, the St. Louis Map Room is an experiment in collaborative mapping as a source of community engagement, created by Jer Thorp in collaboration with COCA. Participants were asked to draw a map of St. Louis using their own knowledge and background engaging with the local environment, thus individual experiences, such as bicycle traffic, routes to schools, and community gardens, were put into the "general map" and the power of map-making was given to each participant.

(image source: https://www.jerthorp.com/stlmaproom)

More related to the subject of this project, Streetonomics
(http://social-dynamics.net/streetonomics/) studied and visualized the histories of
the four intercultural cities – Paris, Vienna, London, and New York – encoded in
the names of the streets.
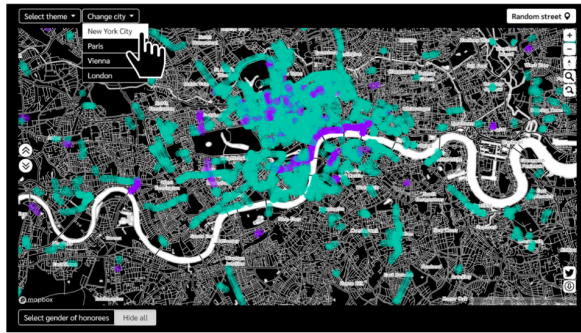
(a) S1: selecting a city of interest   (b) S2: changing the map's theme

(image source: E. Bogucka)

By selecting cities and the various themes predefined by the researchers, users can
see how the color pattern has changed on the map across cities. Besides navigation
purposes, the cultural street map gives users agencies to discover patterns in these
cities with regard to gender biases, the diversity of professions, and the openess of
foreign cultures from the lenses of street names.

In the design process of the cultural map, the team has adopted visual storytelling
tropes such as "Pointilisim" and "Zoomy-telling" (E. Bogucka). Pointillism, the
metaphorical impressionist technique, in the context of the cultural map can be
understood as overlapping points of single, seemingly unconnected streets to form
a representation of the colored landscape of the city as indications of patterns.
Zoomy-telling, coined by the team, means to adjust visualization content and level
of details depending on the zoom level of the map.

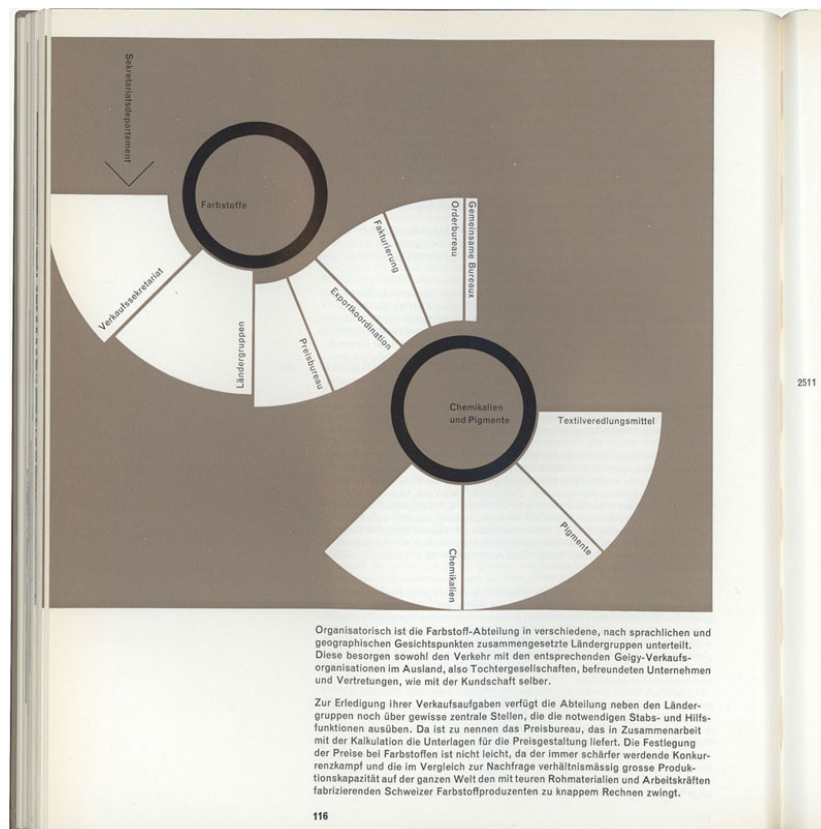# Modes of multi-dimensional data visualization

Infographics, as an early form of data visualization, tended to appear on ephemerals such as booklets and posters. Nevertheless, attempts to create multi-dimensional modes of visual representation emerged frequently. The legendary Minard's Visualization Of Napoleon's 1812 March, which has seamlessly combined geographical information with a time-series:

(image source: https://www.edwardtufte.com/tufte/minard)
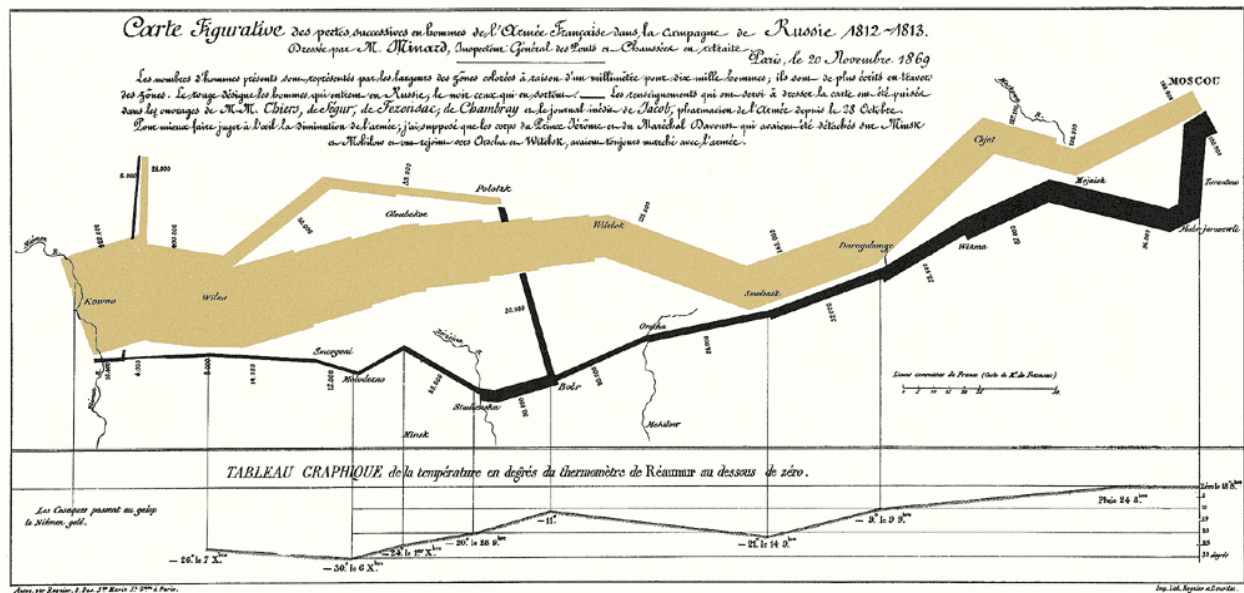
In the 1950s, in a brochure explaining some chemical activities for the Geigy company, the Swiss graphic designer Karl Gerstner was able to use contrast in sizes, colors, and shapes to explain the complicated procedures in a precise and intuitive

way. This style has been wildly adopted in the modern idealism of graphic design, but it was rarely seen in infographics afterward. (Stoll)

(image source: http://www.swissinfographics.com/archives/275)

Up until recent years, digital media especially the screen, has again inspired many designers to continue the experimentation in multi-dimensional data visualization. The Climate Regime Map (https://climateregimemap.net/) is an interactive map created by design agency LUST in collaboration with the Institute for Ethics, Governance and Law of the Australian Griffith University in 2016. In order to provide insights into the complex networks of climate change-related treaty

between different institutions and entities that are involved, the visualization utilized an imaginative space and constructed layered pie charts to allow users to examine the issues from different perspectives and angles. The map also has a built-in filter allows further data selection and comparison. As a result, "This map is an excellent example of how good information design can bring understanding to complicated issues that affect us all." commented FastCompany.

(image source: https://climateregimemap.net/)
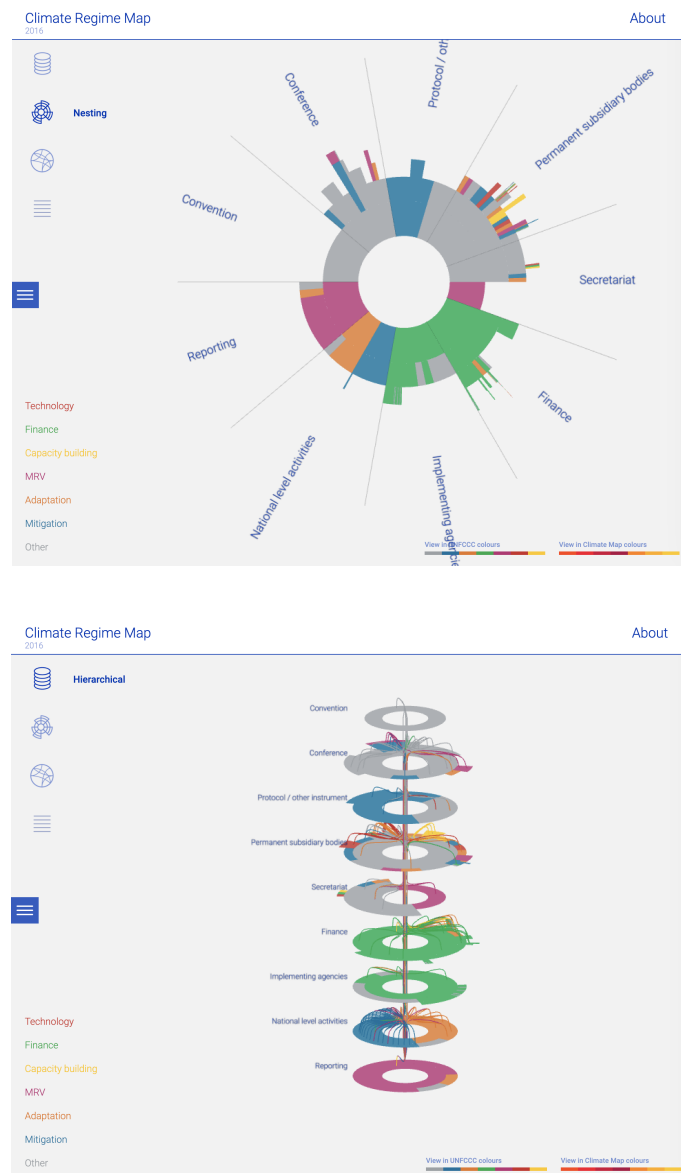
A generated NYC landscape

This project has taken inspiration from the precedents mentioned above. Fundamentally, the final visualization is a humanistic map that is not intended for navigation purposes, but for exploration and the Pointillism ideal of overlaying seemingly irrelevant dots to form general patterns, which is the generated landscape.

The 3-D nature of this visualization provides different camera perspectives in order to demonstrate the dataset from multiple points of view, including a top-down map view, and a time series view from the side. Besides, by rotating the camera, visitors are able to customize the orientation of the map. By historical convention, a modern map always has the northern hemisphere on the top. This visualization gives visitors the agency to determine their own orientation, whether the south on the top, thus the journey will have the Bronx in front of the Manhattan instead of the opposite, or even to view the continent from upside down.

From the visual aesthetics perspective, the visualization has taken the approach of minimalism and modernism, which provides necessary colors, shapes, and layout to support information precisions. On one hand, the intention was to encourage

the exploration of the dataset itself, without the distractions of visual ornaments, and to support the concept of generated landscape, presenting only the generated elements rather than those of ornamental purpose. On the other hand, due to the considerations of technology limitations, reducing visual graphics as much as possible will avoid the over-consuming of computation power and thus provides a more reliable and robust user experience.

From the user experience perspective, the visualization has a built-in filter allowing the user to customize the data selection and to query the desired information. The query criteria include the theme name, year, borough, postal code, and keyword search. Besides, a selectable bar chart representing the quantities of themes has been built in, with the intention to have data-driven user interface. In this way, users can not only have a short path of selecting and comparing the different themes but also are able to get insights immediately about the data being selected. The visualization also adopted a progressive user journey. The default view presents only a portion of the data by pre-filtering. In this way, to introduce the application in a case-study-like fashion to avoid cognition overload and encourage self-exploration.

Data Collection and Analysis

Dataset selection

As discussed in the previous chapter, the access to NYC street co-name record data is pretty limited. Therefore, this project traced back to the online database of the City Council and parsed data from the original legislation files. A small portion of the legislation files has missing information, which has been crossed manually referenced from the NYC Honorary Street Names project by Tauber.

The above image shows how to query the legislation records that are related to the honorary street names. The settings of the filter include:

Date: All Years,

Legislative text: street naming,

Type: Local Law.

In this way, 49 legislation records will show up. Then, the next step is to go through each record to parse information about the street names. The information is composed of two folds:

1) information of street co-name, the street present name, and location details, which can be found under each legislation record:

Section 1. The following street name is hereby designated as hereafter indicated.

New name	Present name	Limits
Jack Fitzgerald Parkway	Shore Front Parkway	between Beach 108th Street and Beach 109th Street

2) information on the background and context of the street co-name, which was submitted by the local committees before the approval of the local law. This can be found in the Committee Report that is attached to each legislation record.

SECTION 1 – JACK FITZGERALD PARKWAY, BOROUGH OF QUEENS

INFORMATION PROVIDED BY COUNCIL MEMBER ADDABBO

Jack Fitzgerald was born on March 10, 1922 on Beach 106th Street in Rockaway, Queens to John Fitzgerald and Anne Foley of Limerick, Ireland. His hard working parents had come from Ireland looking for a better life, and settled in Rockaway to raise their family.

Jack attended St. Francis DeSales in Belle Harbor, and Bishop Loughlin High School in Brooklyn. He then attended Manhattan College in the Bronx and moved on to the Academy of Aeronautics, across from LaGuardia Airport. His education helped him in service as a Sergeant in the United States Army from 1942 to 1945. He was an aircraft mechanic and trainer during the Second World War, and proud of being chosen to guard President Harry Truman during a visit to New York.

After the War, he married Ellen Hancock in November of 1947, and soon after purchased Fitzgerald's Hotel on Beach 108th Street and Shore Front Parkway in Rockaway. He served as a member of the Chamber of Commerce and a President of the Rockaway Rotary Club. He loved serving his community, and taught this dedication to his four children.

The stories about Jack Fitzgerald are part of the history of the Rockaways. Jack had a great sense of humor, and always saw the best in people. For instance, when a group of neighborhood teens broke into his business, he decided to give them a job rather than a police record. He was the perfect example of the "it takes a village" philosophy. He loved people and telling stories of his world travels; especially the story of meeting a person in Tokyo, Japan wearing one of his "Fitzgerald's Tavern" tee shirts. Jack sold Fitzgerald's Hotel in 1982 and retired. Jack moved from Rockaway in 1995 to be cared for by his children until his death on May 13, 2001 from Parkinson's disease.

The final step is to combine the above information by matching the street names. After going through the 49 legislation records which span from 2001 to 2022, there are 2,496 honorary street names being collected.

Address geocoding

After getting the relevant information for the legislation file, the next step is to add latitude and longitude to each entry through address geocoding. Many of the location data are less structured and include semantic expressions that might yield inaccurate information. After comparing the performance of several open-source and commercial APIs (OpenStreetMap, Nominatim, Google Map), Google Geocoding API has outperformed the other APIs and therefore be selected for this

task. Nevertheless, roughly 30% of the address need additional reformatting before being sent to the Google Geocoding API, due to the semantic expressions of the location.

Specifically, the rules applied to the reformatting include:

1) get rid of descriptions such as "at the intersection of", "at the NW corner of". For example, in case of "At the intersection of Avenue B and East 6th Street", the location that is used for geocoding will be "Avenue B and East 6th Street"

2) for locations that describe a range of the street, such as XXX Avenue between XXX street and XXX street, use intersection on either end for geocoding. So in case of "Scranton Avenue between Pompey Avenue and Wainwright Avenue", the location that is used for geocoding is actually "Scranton Avenue and Wainwright Avenue"

3) For any location that falls out of the two patterns above, manual adjustments will be applied. There are occasions where the locations cannot be identified by the API, or require because of specific definitions. For example, "an existing park located on West 156th Street, between Riverside Drive and Broadway".

Text analysis

Abstracting themes using the background(context) property value abstracted from the legislation files is a key feature of the visualization, which will be used for the exploration of the dataset. The approach combines both the applications of state-of-the-art machine learning models and a manual process of curation and categorization.

Topic Modeling

To get a general understanding of the dataset, unsupervised machine learning has been applied to generate topics. Specifically, the techniques used are common practice in Topic Modeling from the field of data science.

The first step is to use a pre-trained language model to encode the text from the datasets. Then, using dimensionality reduction methods to bring the encoded high-dimensional representation of the text to three or even two dimensions. Next, clustering can be applied for identifying the groups of texts that are "close to" each other, which means they are believed to be semantically similar. And eventually, to interpret the composition of groups, which are generated through this unsupervised process, TF-IDF will be applied for calculating keywords for each group.
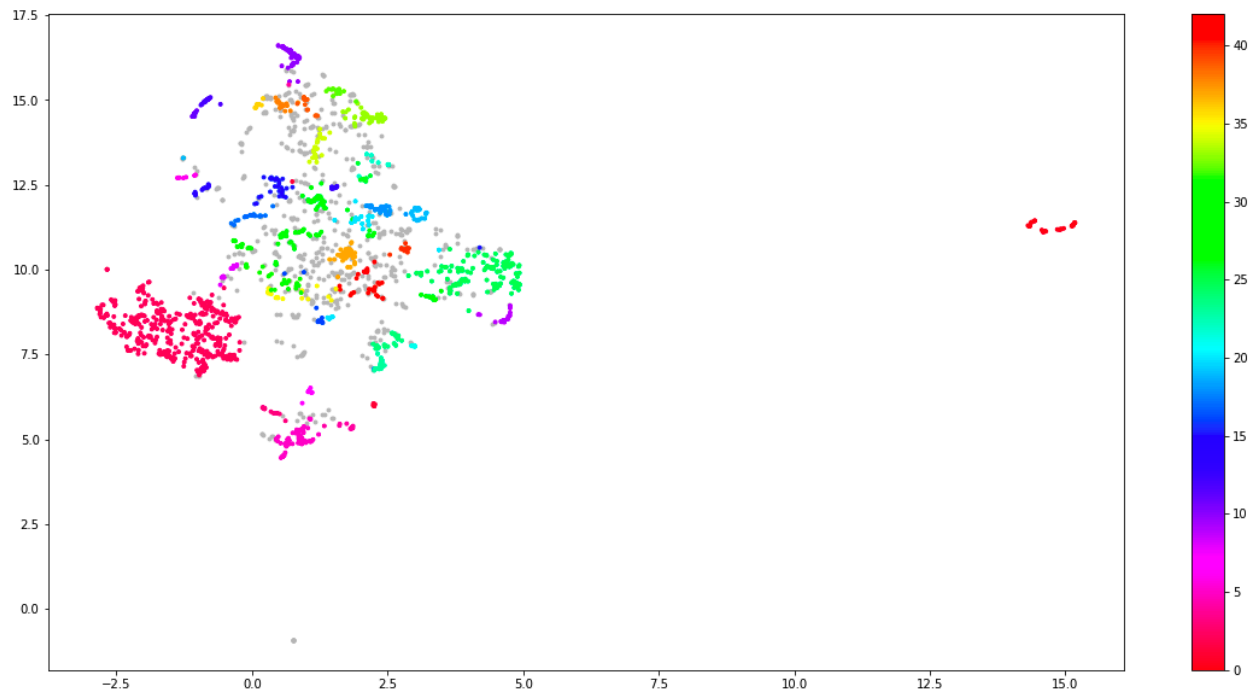
After fine-tuning parameters, the image shows a visual representation of the optimized clustering output. Each dot represents a body of text. Those of the same color belong to the same clustering group. Notice that texts that are in grey color mean they don't belong to any of the groups.

No.	Top 10 words from the cluster
1	'american', 'award', 'street', 'people', 'island', 'states', 'united', 'officer', 'police', 'business'
2	'music', 'jazz', 'band', 'carter', 'cruz', 'album', 'albums', 'latin', 'singer', 'recorded'
3	tuskegee', 'air', 'squadron', 'airmen', 'fighter', 'aircraft', '1943', 'pilot', 'enemy', 'flying'
4	'italian', 'italy', 'edmond', 'safra', 'soccer', 'joseph', 'brothers', 'customers',

	'family', 'business'
5	'women', 'ms', 'education', 'children', 'worked', 'council', 'harriet', 'program', 'health', 'board'
6	'anniversary', 'commemorate', '100th', 'naming', 'celebrating', 'kips', 'sign', 'barnard', 'significance', '125th'
7	'health', 'nq', 'uhp', 'peter', 'melrose', 'regreso', 'primary', 'care', 'gay', 'development'
8	'section', 'law', 'amend', 'map', 'rename', 'accordingly', 'called', 'repeals', 'corresponds', '2004'
9	'war', 'greenpoint', 'pier', 'korean', 'ruby', 'legion', 'island', 'coney', 'sangiorgio', 'army'
10	'league', 'jonathan', 'science', 'chema', 'charities', '52', 'catholic', 'baseball', 'casitas', 'bronx'

At this point more than 600 entries are non-group, and 60% of the data points have been designated one of the twenty clusters. The above list provides a sample of results from the top modeling procedure, which demonstrates the composition of 10 clusters by showing the top 10 words from each cluster identified by TF-IDF.

The result is not immediately for representing themes, because it appears to be "overfitting" in this scenario. There are clusters that are too specific and only contain a very niche topic area, for example, group No.6 represents a cluster of 4 street names that were established to celebrate 'anniversary'. However, these clusters can be considered as an outlier in the context of around 2500 street names. On the other hand, a few correlations provide extra insights of the texts. For example, "women", "education" and "children" appear to be frequently connected in group No.5; "health", "primary care" and "gay" seems to have shown strong

connections in group No.7. In summary, topic modeling have provided a general overview of the seemingly recurrent themes and patterns that existed in the dataset. However, this unsupervised machine learning process requires further examination and validation in the source data, to ensure that the result is interpretable and balanced for pattern findings. Thus, manual curation is needed.

Manual Curation

With the result of topic modeling as foundations, the next procedure is to generate interpretable and understandable themes by merging or isolating each group based on the identified keywords. In other words, to transform the results of machine learning into a more humanistic context.

Eventually, nine theme groups have been selected. Below is a list of the theme groups and the defining keywords that are abstracted from the original words of clusters. Then, re-assign the texts with one of the nine theme groups by applying TF-IDF and the natural language processing. That's said, the words are stemmed and lemmatized, which means return the keywords to the base or dictionary form for comparison.

The keywords appear to be slightly different from what users will eventually see in the visualization. Those words that introduce repetition or redundancy in the group have been removed in the user interface.

Theme Name	Keywords
Arts and Culture	'music', 'jazz', 'band', 'album', 'latin', 'singer', 'art', 'arts' ,'culture', 'cultural', 'musicians', 'cuba'
Wounds of War and Violence	'tuskegee','Airmen', 'squadron', 'fighter', 'aircraft', '1943', 'pilot', 'world war II', 'Iraq', 'korean', 'war', 'army', 'infantry', 'killed', 'combat', 'medal', 'bronze', 'duty', 'nypd', 'police'
Bridging the Gap to Equality	'women', 'Ms', 'education', 'children', 'worked', 'council', 'board', 'school','committee', 'equality', 'school'
We Call It Home	'customers', 'family', 'business', 'immigrants', 'immigration', 'community'
Religion and Belief	"baptist", 'church', 'pastor', 'reverend', 'bishop','ministry', 'churches', 'bible', 'god', 'congregation'
Public Health and Civic Rights	'health', 'public', "civic",'nq', 'UHP', 'primary', 'care', 'gay', 'development', 'activists', 'hospitals', 'HIV', 'AIDS', 'HIV/AIDS', "COVID-19"
Law & Order and First Responders	'board', 'committee', 'law', 'amend','duty', 'nypd', 'police'
Era of Pandemics*	COVID-19
9/11 Heroes*	9/11

Notice that the last two groups, Era of Pandemics and 9/11 Heroes are created separately from the topic modeling procedure, in consideration that the large volumns of 9/11 related co-names will cause the dataset to be imbalanced and the relatively small volumns of pandemic related co-names will be ignored by the algorithm. However, on a humanistic perspective, have these two themes established are critical in understanding the distributions of the street co-names.

Limitations

There are a few aspects of limitations introduced by the data collection and processing procedures as demonstrated above. It is almost inevitable for a computational humanistic data project to have inaccuracies and biases due to a lack of records or human mistakes in the source data. Approximately 1.5% of the street co-names were parsed unsuccessfully from the legislation files and thus have been missing in the current dataset. Given that the total street co-names counts were 2,536, whilst the result from parsing the legislation files has 2,496 rows of records. In the process of the address geocoding, as mentioned above, again has the chance of providing less accurate results for some locations. And lastly, in the theme abstraction phase, machine error and human error are likely to exist in categorizing theme groups.

Conclusion

This project has collected and processed a dataset of NYC street honorary names and created a three-dimensional data visualization of the dataset. As a result, this visualization provides the public with a tool to explore and understand the patterns of honorary street naming on both the spatial and temporal dimensions. With the usage of machine learning and natural language processing, nine theme groups have been generated for categorizing the street co-names in the visualization, which provides lenses for users to discover, compare and understand the social and cultural background of NYC honorary street names.

Bibliography

Berg, Lawrence D., and Jani Vuolteenaho. Critical Toponymies: The Contested Politics of Place Naming. Routledge, 2017.

E. Bogucka, et al.,"Cartographic Design of Cultural Maps" in IEEE Computer Graphics and Applications, vol. 40, no. 06, pp. 12-20, 2020.
doi: 10.1109/MCG.2020.3026596

Lechtzin, Jeremy. "150 Years Ago Brooklyn Renumbered All Its Streets. It Was a Disaster." The New York Times, The New York Times, 27 Jan. 2021, https://www.nytimes.com/interactive/2021/01/27/nyregion/brooklyn-streets-numbers-renaming.html.

Leonard Bernardo & Jennifer Weiss, Brooklyn By Name: How the Neighborhoods, Streets, Parks, Bridges and More Got Their Names

Madden, David J. (2019) The names of urban dispossession: a concluding commentary. Urban Geography, 40 (6). pp. 888-892. ISSN 0272-3638

Mattern, Shannon Christine. Code and Clay, Data and Dirt: Five Thousand Years of Urban Media. University of Minnesota Press, 2017.

Medway D, Warnaby G. What's in a Name? Place Branding and Toponymic Commodification. Environment and Planning A: Economy and Space. 2014;46(1):153-167. doi:10.1068/a45571

Roberts, Sam. "Honorific Streets, Now Cataloged" The New York Times, The New York Times, 26 Feb. 2014, https://www.nytimes.com/2014/02/26/nyregion/honorific-streets-now-cataloged.html

Rose-Redwood, Reuben, et al. The Political Life of Urban Streetscapes Naming, Politics, and Place. Routledge, 2017.

Stoll, Michael. Bollmann, Benjamin. "An infographist is just a visual journalist"

Swiss Infographics. 15 March. 2012, http://www.swissinfographics.com/archives/275