A VIRTUAL SUMMER

CESTA 2020

RESEARCH

ANTHOLOGY

Director's Welcome

The Summer Undergraduate Research Program is one of the activities I most looked forward to when I became CESTA's faculty director last November. In a typical summer, the Program fills the fourth floor of Wallenberg Hall with day-long energy for ten special weeks, as undergraduates work together and with their project leaders on a variety of DH research. The summer of 2020, however, would be a summer like no other — for CESTA as for everybody else. With COVID-19 closing down campus, we had to adjust by moving to a remote format. It is with great pride and admiration that we share in this volume the work that students completed under these challenging circumstances and at a very trying time.

In the following pages, students describe their participation in the 2020 Summer Research Program. It is humbling to encounter here — in their own words, and in a publication itself designed by a team of students — the fruits of their hard work, achieved while simultaneously gaining experience in cutting-edge digital humanities research across a variety of fields.

None of this could have been possible without the inspiring scholars, students, senior researchers, staff, and faculty who make CESTA such a supportive and productive community. I want particularly to thank our extraordinary Graduate Mentors, Rachel Dubit and Erik Fredner, and our tremendous CESTA staff, Amanda Wilson-Bergado and Erik Steiner, who managed to keep things going and to hold everyone together under difficult conditions. We are all grateful to Stanford's Dean of Research, Vice Provost for Undergraduate Education, H&S Dean's office, the Stanford Humanities Center and our generous donors, whose support is essential to the running of our programs. Please enjoy the accounts of CESTA research that follow, as told from the perspective of the students who helped keep that research moving in the summer of 2020.

CESTA FACULTY DIRECTOR
Giovanna Ceserani

Mentors' Note

It hardly needs to be said that 2020 has been an extraordinary year: millions around the world have fallen ill, from which far too many have died; millions peacefully protested racism, from which far too many have died; millions faced poverty, from which far too many have died. An often-remarked paradox of the internet is that it has made us more connected and more alienated, one of many paradoxes that Covid-19 has accelerated. We remain grateful for all the ways this summer's work brought us closer together during a time when we all needed to find a sense of purpose with others.

In our role as graduate mentors, we had the pleasures and faced the challenges of coordinating research with thirty-seven undergraduates and thirteen project leaders across twenty-five projects and nine timezones without ever meeting in person. We were helped tremendously by CESTA and the Stanford community, particularly the grace under pressure that everyone gave us, and which we did our best to give in return. Being together has made it possible for us to acclimate to, as one of this summer's projects puts it, life in quarantine.

As we all know by now, virtual life has real limitations. But it also has its joys: PowerPoint parties—where students gave brief presentations about their eclectic interests, from pickling to anime—reminded us how the constraints of video calls can create new ways of getting to know each other. Research benefitted, too. Though documenting our decisions has always been important, digital collaboration produces its own record.

It is a testament to the strength of the CESTA community that being so far removed from one another only made us more creative in finding ways to come together. Our gratitude goes out to everyone who made this summer a success, through actions large and small.

GRADUATE STUDENT MENTORS
Rachel Dubit and Erik Fredner

Anthology Introduction

As the team in charge of designing this year's anthology, we wondered how we could best highlight CESTA's impressive span over space and time. We wanted to maintain a modern aesthetic to match the current virtual age, but also to make sure not to forget about textual materiality and experience.

The cover, with images from various projects displayed in "slices" of the CESTA logo, offers a taste of the center's diverse research interests. Within the book itself, each page margin contains a unique layering of two maps of San Francisco, moving from a hand-drawn, older style to one that is modern. If you quickly flip through the pages with your thumb like a flipbook, you will see the two maps transition from hand-drawn to modern until you reach the end — and if you flip the other way, it transitions back in time, from modern to hand-drawn. This gives the book a dynamism that we believe is representative of the research at CESTA.

We continued this theme of a simulated passage of time by ordering the projects in a roughly chronological order. However, the anthology is bookended by two projects out of chronology: Life in Quarantine and Urban Ecology of the Pandemic. This is a small nod to the overwhelming *presence* of the present that we are all experiencing together.

We hope you enjoy reading about the latest innovative digital humanities research being done at CESTA. Welcome to our 2020 Summer Research Anthology.

ANTHOLOGY DESIGN TEAM
Krain Chen and Lily Nilipour
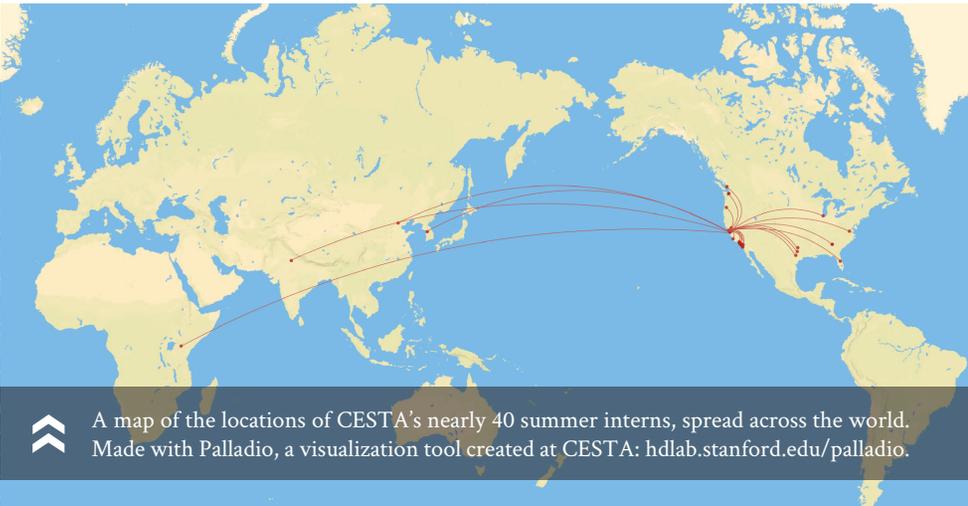
A map of the locations of CESTA's nearly 40 summer interns, spread across the world. Made with Palladio, a visualization tool created at CESTA: hdlab.stanford.edu/palladio.

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Process Makes Perfect: Behind the Design

by Krain Chen and Lily Nilipour, Anthology Design Team

Starting from the end of summer and through fall quarter, we worked on creating and implementing design concepts to ensure that this anthology would be a unique object celebrating the summer's research. On the following pages is a breakdown of our design principles and processes.

Creating the Cover

1 The starting point and guiding principle is the intersecting ovals within the CESTA logo.

2 The intersecting ovals overlay the rectangles of the front and back covers. Various project images are masked to fit the curving structure.

3 The title and the word "CESTA" lie on top of the Main Quad, where the lab is physically located.

A VIRTUAL SUMMER
CESTA 2020
RESEARCH ANTHOLOGY

Building the Book

Every page of this anthology is constructed around standardized layout principles, and then customized to best showcase each project's specific materials. We love that even amidst a virtual summer, this anthology is a physical product. We paid tribute to that by giving special attention to the margins, creating a flipbook-like effect that is best experienced with a printed copy. Flipping quickly through the pages takes the reader through time, whether forwards or backwards, via the maps of San Francisco.

Left: Faust's Map of the City and County of San Francisco California (1894); Right: OpenStreetMap, view of San Francisco (2020). The vertical strips are the margin images for the first and last pages, respectively, and are taken from the same geographical extent of each map.
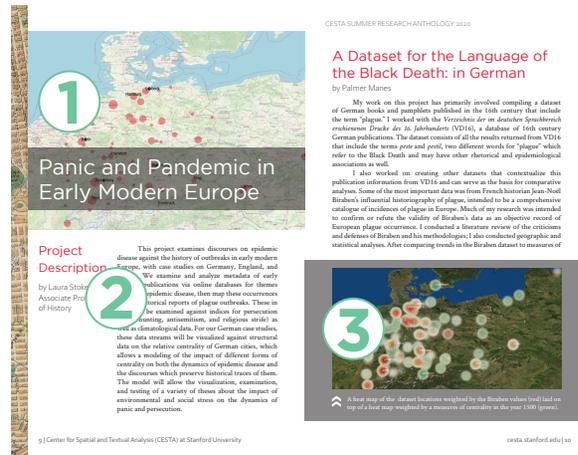
1 Title and cover image for the project.

2 Titles for project and student descriptions are set, in rotating order, in one of the four colors of the CESTA logo.

3 Images and captions are offset from the text by a gray box, or in other cases set against the white background for contrast.

Student Researchers

Elias Aceves is part of the class of 2023 and hopes to major in Economics and Mathematics. Elias is involved with two projects at CESTA. For **Life in Quarantine**, Elias is in charge of outreach to art initiatives surrounding the pandemic, prison and the pandemic stories/initiatives, and mutual aid societies which have sprung up in response to COVID-19. For **Global Urbanization and its Discontents**, he is focused on HTML interface coding and a literature review.

Manya Bansal is a rising sophomore from New Delhi, India, pursuing a major in Mathematics. She has worked with CESTA before on the Global Medieval Sourcebook Project and is currently working with the **Computational Border Studies** team as a full-stack web developer. In addition, she is also working on developing a classification algorithm that can help predict asylum court decisions.

Karunya Bhramasandra is a rising junior majoring in English and French, and is currently holed up in her hometown of San Ramon, California. She's working on parsing out the intricacies of Egyptian aesthetics in South Africa for her CESTA project, **Egypt in South Africa**. She'd love to say she writes long, eloquent philosophical treatises in her free time, but she doesn't.

Kimmy Chang is a rising junior majoring in Computer Science and minoring in Creative Writing. Kimmy is part of the **Land Talk and Urban Ecology of the Pandemic** project. Her primary roles include web development for the Land Talk website and creating a dynamic data visualizations applicati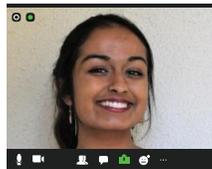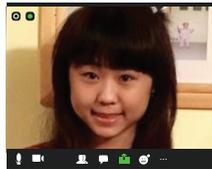on to study the impact of COVID-19 on animal behavior for a research presentation at the 2020 Animal Behavior Society Conference.

Leah Chase is a rising sophomore, who plans to major in Computer Science and/or English. She works on two projects at the **Literary Lab: Novel World-Building and Personhood**. Her primary roles include data entry and text mining and analysis while learning more about word embedding and working in R. She is also a part of **Life in Quarantine**.

Krain Chen is a rising junior with majors in Computer Science and Architectural Design. This summer, she is working on geo-spatial analysis, map layer creation, and gathering research metadata for the **Interactive Nolli Map** project. She is also one of the designers of this anthology.

Cat Fergesen is part of the class of 2023 studying Linguistics and Biology (or maybe something else). Cat works with Dr. Laura Patricia Stokes on the **Panic and Pandemic** project and is passionate about many different types of storytelling, including presentation of historical research through data visualization. Cat has been meeting all kinds of beautiful old books, learning unfortunate words in French and German, and picking up new programming tricks since starting this project.

Karen Ge is a rising sophomore planning on majoring in Symbolic Systems. She is working with the **Grammar of Gender and Personhood projects in the Literary Lab**, as well as on **Land Talk & Urban Ecology of the Pandemic**. This summer, she hopes to unravel theories and discover patterns through machine learning and data visualization.
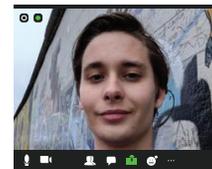
Joshua Goodwin is a junior studying History and Philosophy on the Pre-Law track. He works on the **Senegalese Slave Liberations Project** translating, transcribing, and analyzing a dataset of over 25,000 slave liberations in colonial French West Africa, identifying demographic trends within a period of over 50 years. He hopes to align the dataset's location information with spatial maps as well as create infometrics and other forms of data visualization for future presentation.

Zhuoer Gu is a senior (class of 2021) majoring in Math with a minor in History. Zhuoer joins the project **Voortrekker Monumentality**, which records information of images about the Voortrekker history based on the book *From Memory to Marble* by Elizabeth Rankin and Rolf Michael Schneider.

Khuyen Le is a rising senior majoring in Symbolic Systems and Comparative Literature. Khuyen works with Dr. Alice Staveley on the **Modernist Archives Publishing Project**, a digital archive for publishing houses in the early 20th century. This summer Khuyen is working on a redesign of the website for the project.

Sean Lee is a rising junior at Stanford University studying International Relations and History. At CESTA, he is a research assistant for Professor Ana Minian with the **Immigration Detention Team**, searching for survivors of the Angel Island Immigration Station to conduct oral history interviews and record their experiences for a forthcoming publication on immigration detention in the United States. He is currently working remotely from Los Angeles.

Miranda Liu is a first-year student interested in studying literature, creative writing, and how to tie both to social change. Miranda is collaborating on new project, **Counter-Surveilling the State**, where she is helping to develop an ethnosurvey and working on understanding R and text mining. Miranda enjoys storytelling, being in nature, and finding new sources of inspiration.

Olivia Manes is a junior majoring in International Relations and Comparative Literature from Cathedral City, CA. As part of the **Latin American Borders** project, she researches events and policies in Latin America that have driven migration to the US since 2008. In her free time, she likes practicing her Spanish, reading, writing, hiking and spending time with friends and family.
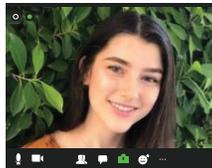
Palmer Manes is a member of the class of 2021 and majoring in Religious Studies, with interests in early Christianity, theology, and philosophy. This summer he is working on geospatial visualizations for both the **Social Networks in the Early Islamic Middle East** and **Panic and Pandemic in Early Modern Europe** projects.

Alana Mermin-Bunnell is a rising sophomore at Stanford (class of 2023) passionate about visual art and bioscience. She has been working as a research assistant for **Life in Quarantine: Witnessing Global Pandemic** since Spring quarter. Alana helps with outreach, writing blog posts, and creating graphics for the website and social media.
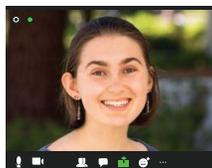
Barry Migott is a rising sophomore and hopes to major in Computer Science and minor in Management Science & Engineering. He is also part of the project team for **Life in Quarantine: Witnessing Global Pandemic**. His interests include listening to podcasts, reading contemporary African literature and finding new sources of inspiration.

Lily NIlipour is a rising senior majoring in English Literature and minoring in Creative Writing. She is currently working on the **Modernist Archives Publishing Project** (MAPP) with Professor Alice Staveley to redesign the project website. Her independent research involves looking at punctuation and rhythm in modernist, and particularly Virginia Woolf's, novels. She is also one of the designers of this anthology.

Emilia Porubcin is a rising senior majoring in history, with a focus on Russia and Eastern Europe. She is presently working on Dr. Algee-Hewitt's **Text Mining Bias** project, investigating how to quantify racial bias in Supreme Court asylum adjudication cases. Her other work investigates the intersection of business and human rights, particularly how companies can be incentivized to better protect consumer privacy.

Ashwin Ramaswami is a rising senior majoring in computer science. He's worked on several projects at CESTA, including **Layered Translation** and **Grand Tour Explorer**. This summer, he's helping with data collection and analysis relating to asylum proceedings with Dr. Algee-Hewitt. In his free time, Ashwin likes to do full-stack website development and mobile app development. He is also interested in ancient Indian philosophy.

Riley Seow is a rising junior majoring in Comparative Literature and Symbolic Systems. She is interning at the **Literary Lab** and hopes to get involved with a few projects, like **Short Stories and Fan Fiction**. While this was a crazy summer, in Riley's spare time you can find her listening to music and jamming out.

Ravi Smith is an undergraduate studying philosophy, literature and computer science. This summer he is building a new version of the **Poetic Thinking** website, a social network for collaboration in the humanities. The Poetic Thinking platform provides a space for students, instructors and researchers to engage in communal discourse "without a bannister" and exchange their thoughts about a course over the span of the quarter.

Carolyn Stein is a sophomore planning to major in Psychology and double minor in East Asian Studies and Creative Writing. This summer, she is working on a **Text Technologies** project that involves examining how archivists build digital archives and how those digital archives affect our understanding of history. She is also a member of the Stanford Band, the Stanford Storytelling Project, and the Leland Quarterly.

Regina Ta is a rising sophomore with interests in Comparative Literature, Digital Humanities, and Symbolic Systems. Working with the **Literary Lab** has introduced her to methods for textual analysis, and she is fascinated by the possibility of extracting new stories and patterns from language.

Ryan Tan is a rising senior majoring in Computer Science with a double minor in Comparative Literature and Philosophy. On campus, he's been involved in acting and directing for student theater and is interested in game design. Ryan is collaborating with the **Grand Tour Project** team for a second summer, with the goal of completing the digital publication.

Audrey Ward is a rising sophomore, potentially majoring in Product Design and Urban Studies. Audrey researches with the **Urban Studies Lab** led by Professor Ato Quayson, investigating the "high streets" and literary representations of New York and London.

Lily Taylor is a Symbolic Systems major and Modern Languages minor. She loves working with her mentor Dr. Bridget Algee-Hewitt and the other collaborators for the **Latin American Border Project**, and is passionate about creating accessible research for the voices that go unvalidated without a formal platform. When she's not working, she enjoys sleeping in, reading, and watching movies.
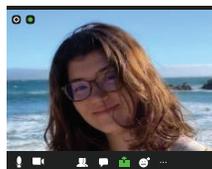
Katie Yoon is a rising sophomore and is studying International Relations and Symbolic Systems. Under the guidance of Dr. Bridget Algee-Hewitt on the **Latin American Borders**, Katie is text mining bias in judicial asylum decisions in addition to investigating the factors contributing to deaths and apprehensions along the U.S.-México border.

Brooke Tran is a rising senior and majoring in Management Science & Engineering. Brooke is collaborating on the new project **Counter-Surveilling the State**. Her role within the project is to build a mapping platform to track ICE raids throughout the U.S. using geospatial data, which will also incorporate ethnographic surveys of undocumented immigrants.

Mark York is a rising senior and communications major, who is involved in both the **George Horton Project**, where he constructs and programs virtual reality sequences, and **Text Technologies**, where he is in charge of revamping the official website.

Panos Vandris is a rising senior and has majors in Biology and Comparative Literature, a minor in Sociology, and a coterm in Epidemiology and Clinical Research. This summer he is researching with the **Literary Lab on the Epidemics, Personhood, and Short Stories** projects.

Dongming Zhang is a rising junior from China, with a major in Philosophy and a minor in Classics. She is researching with the **Urban Studies Lab**, collecting geographical information on commercial districts around the Victoria Harbour from Open Street Map and gathering background information on Hong Kong's colonial, migration and commercial history in order to understand the city's development.

Hannah Walton is a rising junior majoring in English and minoring in Human Biology. She is working on website design and archive development for **Life in Quarantine: Witnessing Pandemic**, a project producing a historical public archive documenting the COVID-19 pandemic. Hannah loves reading, music, and dogs.

Emily Zhang is a senior and is majoring in Symbolic Systems and minoring in Philosophy. She enjoys writing, drawing, and surfing. She has been a research assistant for **Life in Quarantine: Witnessing Global Pandemic** since Spring quarter and joined the project team for **Land Talk** this summer.

Glede Wang is a rising sophomore from Shenzhen, China, and is pursuing a double major in Gender Studies and Data Science. Glede is primarily organizing and archiving unpublished works from a talented African writer and political activist, Regina Twala, for the **Visible Bodies** project. She is also a part of **Life in Quarantine.**

Zuyi Zhao is a rising senior and Religious Studies major from South Florida. As an intern on the **Social Networks in the Early Islamic Middle East** project, Zuyi primarily contributes to the character network analysis component of the project, charting the connections between different figures as they are documented in the 9th-century hagiographical text, "The Book of Governors."

Life in Quarantine

Witnessing Global Pandemic

by Elias Aceves, Leah Chase, Alana Mermin-Bunnell, Barry Migott, Sade Oyekenu, Hannah Walton, and Glede Wang

At its heart, Life in Quarantine (LiQ) is an open, online historical archive that houses personal written accounts documenting how the COVID-19 pandemic is changing the lives of people from various backgrounds across the globe. These stories, written in a wide range of languages from many different countries, show the human side of this time of global crisis. The LiQ website also provides a space for other types of creative expression, including creative writing, poetry, and visual art. Our "Poetry in Pandemic" series, for example, pairs poems from our archives with paintings and photographs to create a dialogue between artistic responses to life during the pandemic.

New Website as Resource

One of our goals for the website is for it to serve as an open education resource for students, educators, governments, organizations, and businesses seeking to promote cultural solidarity and global interconnectedness, with a special emphasis on inclusivity. We're constantly striving to make our content as representative as possible, and we can't do this without the engagement and participation of our communities.

Our team has been working on creating a new website for LiQ. In addition to web design, graphic design, and transferring content from our old to the new site, we worked on outreach to start collaborations and our five new initiatives: Art in Quarantine, Words in Quarantine, Blogs in Quarantine, Mutual Aid and Relief Funds, and Prison during Pandemic. This summer also launched our collaboration with NoiseFilter (a podcast) and covid9teen; we will be launching more collaborations with other projects soon! Finally, members of our team kept up LiQ's social media presence, helped post stories to our archive and other initiatives, created new submission forms, and continued outreach for archive story submission. Visit us at http://liqproject.org/ .

Project Description

by Nelson Endebo, Farah Bazzi, and Ellis Schriefer

LiQ is an online community platform that addresses the transformations we're experiencing in the age of COVID-19. At the core of the project, we have an open, online historical archive that houses personal written accounts in a wide range of languages from various countries. These stories document how the COVID-19 pandemic is changing the lives of people from various backgrounds across the globe. Additionally, our website provides a space for different types of creative expression: personal stories, creative writing, blogs, and visual art. Our website is designed as an open education resource for students, educators, governments, organizations, and businesses to promote cultural solidarity and global interconnectedness with inclusivity at its center.
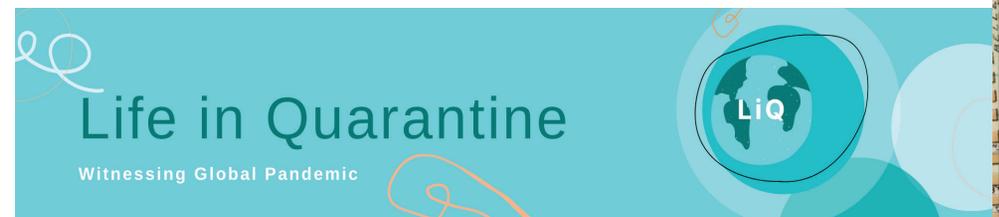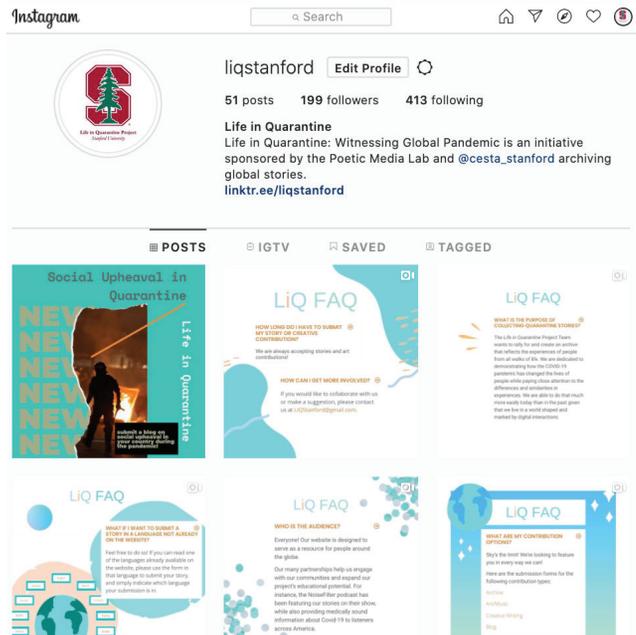
ONE pandemic... a WORLD of stories

Words in Quarantine

Another LiQ initiative "Words in Quarantine" looks to showcase creative writing produced during the pandemic.

The Covid-19 crisis has impacted everyone, and writers are no different. *Life in Quarantine* provides a space for writers in our communities to share how they are responding to this new historical moment. What better way to understand the rich and varied ways they are reacting to our changed life conditions than reading what they write? We want to celebrate them, their resilience and ingenuity, and help their voices reach others.

Welcome to Words in Quarantine, a virtual literary salon where we showcase creative writing! Our goal is to introduce and feature authors at various stages in their careers to the *Life in Quarantine* community: from published professionals to aspiring wordsmiths, from prize-winners to simply enthusiastic practitioners of the written word. We invite you to share your work! A community of words: Words in Quarantine.

All of the contributions published here were produced during the pandemic, even though only some address it directly. They provide us glimpses into the creativity of our time, and we encourage our community to engage with the authors and invite others to participate.

We're eager to read what you've been writing under quarantine conditions! This could include fiction or non-fiction in the form of poetry, short stories, essays, etc. We accept multi-genre submissions, as long as they comply with our guidelines (for prose works, a maximum of 2,000 words; for poems, up to 10).

We hope you will share your work with the *Life in Quarantine* community!

I want to share my creative writing!

A map with the locations of the stories collected so far by LiQ (top). The project's new Instagram page, part of the initiative to expand social media presence and reach more people (left).
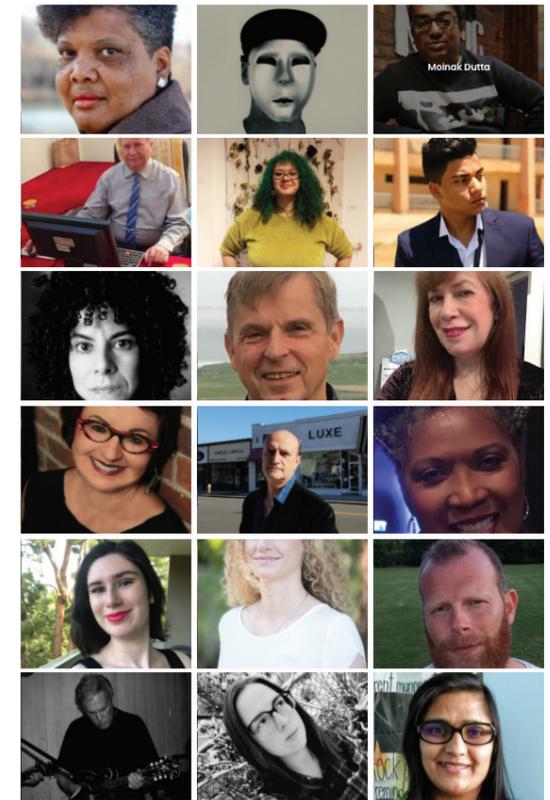
The Life in Quarantine project logo.

STUDENT RESEARCHERS

Social Networks in the Early Islamic Middle East

Project Description

by Michael Penn,
Professor of
Religious Studies

This project stems from the world's largest alumni newsletter: in the mid-9th century, Thomas, the East Syriac Bishop of Marga (a region in modern day Iraq), decided he would collect as many stories as he could concerning those who graduated from his home-monastery of Beth Abhe. Titled *The Book of Governors*, the resulting hagiography runs 685 pages and has just shy of 500 characters. It contains a treasure trove of information on topics ranging from Christian-Muslim relations, to medieval economic history, to ecclesiastical politics, to ancient pilgrimage routes.

In recent years, humanists have increasingly applied techniques associated with social network analysis to historical sources. Social network analysis is a set of visualization and quantification tools that helps scholars display and analyze how groups are structured and how members of a group interact, but has rarely been applied to pre-modern history. *The Book of Governors* makes for a particularly intriguing and productive case study for pre-modern social network analysis because it is an amalgamation of data for what we'd consider historically plausible interactions (e.g. well-known abbots, caliphs, and theologians) alongside what we'd consider less plausible (e.g. teleporting trees, petrified dragons, and — in one case — a temporarily resurrected dog).

Mapping the Book of Governors

by Palmer Manes

This summer, I took the geospatial component of this project into some new experimental directions. Working with the first five volumes of *The Book of Governors*, I completed a frequency index — a catalogue of each direct or indirect mention of a location in the book. Since frequency of mention is one metric for gauging importance, I used this index to identify the twenty most important locations mentioned in the text, building upon my previous geographic identification work. I also used this frequency data to update and

redo my geospatial and non-geospatial visualizations, including a series of QGIS visualizations (QGIS is an open-source mapping system).

I also completed a monastery edge list, a dataset that records relationships between monasteries in source-target format. This dataset will serve as the basis for a social network analysis of the monasteries mentioned in the text. My work has given us a good understanding of the geographic content of *The Book of Governors*, in both its broad scope and its specifics. This is a useful supplement to the social network analysis part of this project, as it locates the people and events of the text in space. While we have not yet integrated this project's geospatial
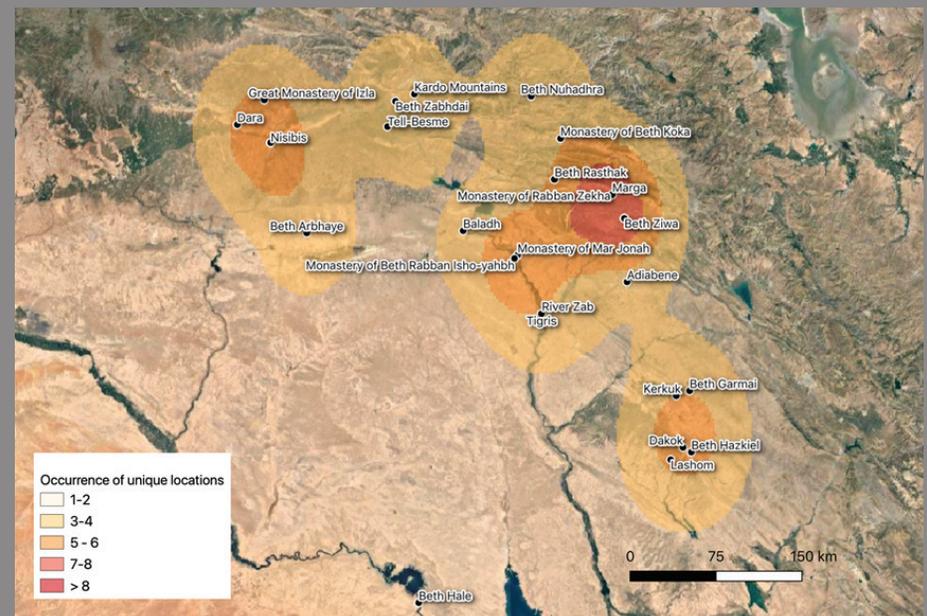
A zoomed-in heat map of the unique occurrence of locations in the key, central area where most of the locations are clustered.

analysis and social network analysis aspects, we now have a pilot case for this integration: the monastery social network analysis. Next steps include filling out the geospatial database by locating the geospatial coordinates for all named locations, as well as by completing the frequency index for Book 6. This data will allow us to continue our development of novel visualizations and modes of analysis.

Social Network Analysis

by Zuyi Zhao

As the intern in charge of this project's social network analysis component, this summer I conducted a robust literature review on historical and character networks and refined the database I had previously built.

I first explored the approaches and theoretical considerations of similar social network analysis projects, primarily those that focused on literary texts and character networks. I equipped myself with new perspectives and knowledge about common pitfalls when utilizing node-edge graphs as well as about the power of conveying information through dynamic social network models. I found that many comparable character network projects built co-occurrence networks rather than manually extracted networks (as I had originally done), so I reverse-engineered a co-occurrence network based on each chapter of *The Book of Governors*. Here, co-occurrence means that any two nodes appearing in the same chapter share an edge. Since I included chapter-of-appearance as an attribute on the manual edge-list, the co-occurrence data were simple to compute.

I also refined the edge-list of the manual network for each section of the text. This consisted of translating each edge into a verb that categorizes said edge and removing or adding edges on the list or from the text, depending on whether they "count" as an edge proper. This contributed to my efforts to articulate a formalized definition of an "edge" for this project.

Visualizing Connections

After I finished cleaning the edge-list for each volume of T*he Book of Governors*, I used Gephi and Cytoscape to create visualizations of the manual and co-occurrence networks of each book. A comparison of the networks revealed that going through the text by hand was worthwhile, as the differences in modularity and node importance were not insignificant. For the manual networks, which used different network statistics such as "Degree" and "Betweenness Centrality", I isolated the most important nodes: those that were in the top 10 of at least three of the five statistics considered. I then created bar graphs charting the relative statistics of the top 7-10 nodes for each book. I also used the cleaned edge-list to create numerous graphs and visualizations that can answer questions regarding the text's main characters, the value of social network analysis and distant reading to ancient literature, and the surprising features of the text that a normal, linear readthrough might obscure.

With a fully cleaned edge-list for *The Book of Governors*, additional steps and explorations for this project can be completed much more quickly.
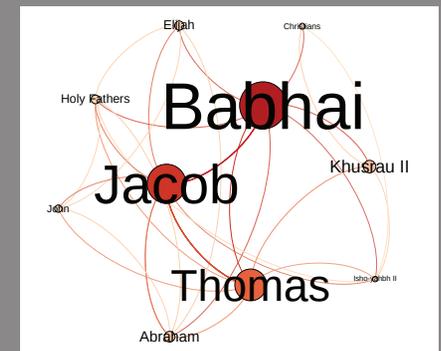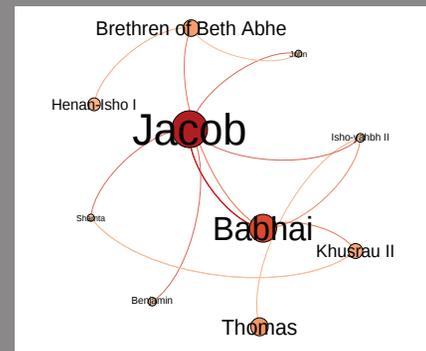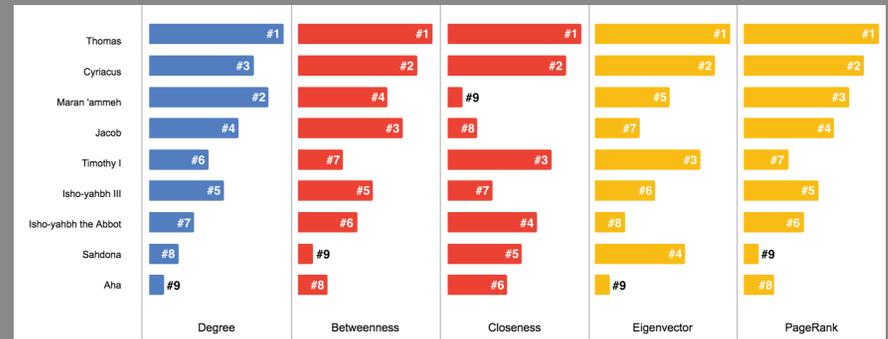
A comparison of five different statistics for the seven most "central" nodes in the first book of *The Book of Governors* (top). Two visualizations, one in the Co-Occurrence graph (left, above) and one in the manually extracted network graph (right, above) showing the top ten nodes by Betweenness Centrality in Book 1.

There is also room for additional database cleanup of the entire text's node list: adding and developing node attributes will further improve the amount of investigative work that can be done quickly using the database. We can also now ask additional questions about the data, such as the difference between the inclusion and exclusion of unnamed characters or the absence and presence of various minorities (for example, those of gender or faith), that complement close readings of the text.

STUDENT
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Panic and Pandemic in Early Modern Europe

Project Description

by Laura Stokes,
Associate Professor
of History

This project examines discourses on epidemic disease against the history of outbreaks in early modern Europe, with case studies on Germany, England, and France. We examine and analyze metadata of early modern publications via online databases for themes related to epidemic disease, then map these occurrences against historical reports of plague outbreaks. These in turn will be examined against indices for persecution (witch-hunting, antisemitism, and religious strife) as well as climatological data. For our German case studies, these data streams will be visualized against structural data on the relative centrality of German cities, which allows a modeling of the impact of different forms of centrality on both the dynamics of epidemic disease and the discourses which preserve historical traces of them. The model will allow the visualization, examination, and testing of a variety of theses about the impact of environmental and social stress on the dynamics of panic and persecution.

A Dataset for the Language of the Black Death: in German

by Palmer Manes

My work on this project has primarily involved compiling a dataset of German books and pamphlets published in the 16th century that include the term "plague." I worked with the *Verzeichnis der im deutschen Sprachbereich erschienenen Drucke des 16. Jahrhunderts* (VD16), a database of 16th century German publications. The dataset consists of all the results returned from VD16 that include the terms *peste* and *pestil*, two different words for "plague" which refer to the Black Death and may have other rhetorical and epidemiological associations as well.

I also worked on creating other datasets that contextualize this publication information from VD16 and can serve as the basis for comparative analyses. Some of the most important data was from French historian Jean-Noël Biraben's influential historiography of plague, intended to be a comprehensive catalogue of incidences of plague in Europe. Much of my research was intended to confirm or refute the validity of Biraben's data as an objective record of European plague occurrence. I conducted a literature review of the criticisms and defenses of Biraben and his methodologies; I also conducted geographic and statistical analyses. After comparing trends in the Biraben dataset to measures of

A heat map of the dataset locations weighted by the Biraben values (red) laid on top of a heat map weighted by a measures of centrality in the year 1500 (green).

the centrality and importance of a set of German cities, we ultimately concluded that the dataset was more viable as a historical record of plague than we initially thought.

However, some caveats remain: because in Biraben's records there is a stronger correlation between reported incidences and cities' economic centrality than between reported incidences and cities' cultural centrality, these records cannot be taken to indicate publishing trends or hot spots of textual production and record-keeping alone. Additionally, Biraben's data has lacunae, something we attempted to adjust for by focusing on specifically defined regions (roughly, French, German, and English-speaking areas) and subsets of cities within those regions.

An initial comparison of the Biraben data to the VD16 data demonstrates that there are significant parallel trends, especially in the latter half of the 16th century. My subsequent work building databases that aggregate and interpret raw publication data — for example, a database that records the number of texts published per year with *peste* or *pestil* in the title — will serve as the foundation for further comparative geographic and chronological analyses.

A Dataset for the Language of the Black Death: in French

by Cat Fergesen

My work on the "Panic and Pandemic" project has focused on French-language data, as I can read French. I collected the data from Gallica, the digitized record of works in the Bibliotheque Nationale Francaise (the National Library of France). I recorded this data in Google Sheets, and analyzed it through Sheets, Tableau, and ARCGIS. In working on this project, I also wrote a data-wrangling tool in Python, for the purpose of cleaning the German-language data. I read a number of French-language pamphlets in order to get a general sense of what kind of texts I was working with, and assigned genres to the titles to facilitate analysis. My
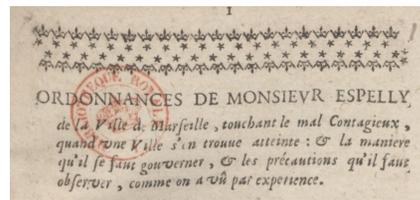
Some titles from the French database.

work with the French-language data focused on determining the frequency with which certain texts and genres were printed in major French cities between 1348 and 1750. I also arranged and visualized data on outbreaks and outbreak proximity.

This visualization shows number of pamphlets printed (in the red halo around each city's dot) and outbreaks (indicated by the city's dot turning red).
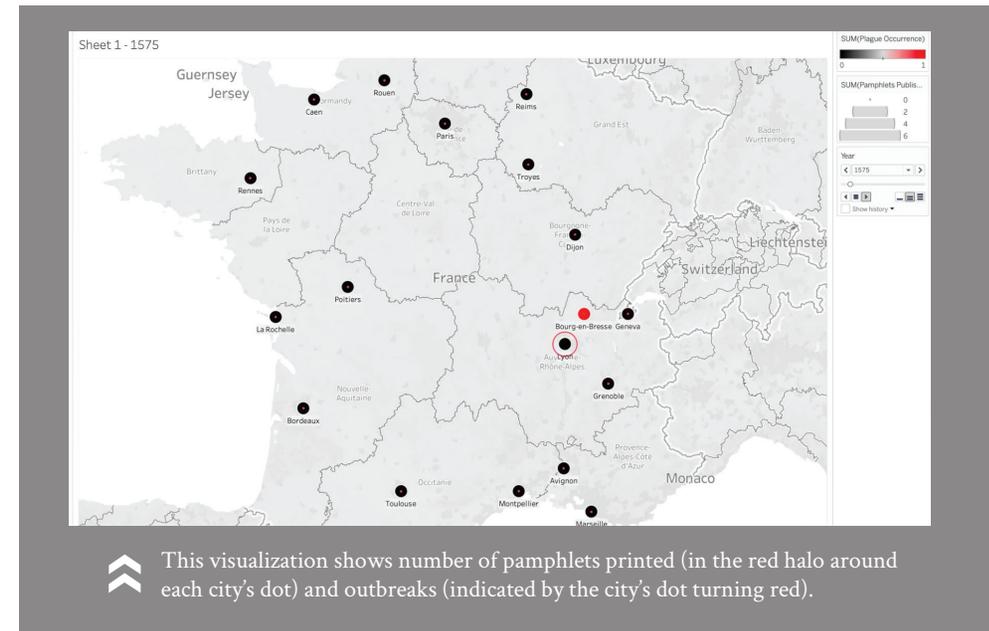
Due to the small size of the dataset — particularly an issue once I had separated publications into genres — I was not able to draw strong conclusions about the frequency with which certain genres were printed. However, my analysis did suggest that certain cities in France were printing centers, while printing was more widespread and evenly distributed among German cities. I was also able to contribute meaningfully to the project due to my ability to read French, which allowed me to engage deeply with the French data. Moving forward, my methods for analyzing genres in the French data might be applied to the German data, which exceeds the French-language dataset in size.

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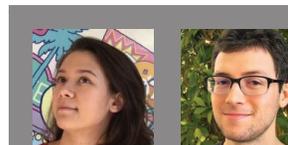
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Grand Tour Project

Digital Dynamism: Taking the Grand Tour Online

by Ryan Tan

I was thrilled to be able to continue my work and help finish the Grand Tour Project. This summer, I worked on the map visualization in the Grand Tour Explorer, which displays locations visited by travelers, and on the design for *A World Made by Travel,* the digital book that will accompany the website.

Creating the Interactive Map

I overhauled and improved the rough implementation of the map visualization I worked on last year. I learned Mapbox, a digital mapping tool, and created an interactive map featuring all of the documented locations from John Ingamells's 1997 *A Dictionary of British and Irish Travelers to Italy 1701-1800.* On the map, each location is represented by a dot and colored according to the Italian state it belonged to during the Grand Tour, giving viewers a better sense of what travel was like in pre-unification Italy. This design was further enhanced with new features, including a hierarchical label display that scales as one zooms in on less popular locations and a search bar that pans to a queried location.

My work on the digital book, meanwhile, gave me valuable experience with web design, and I learned to use new web-development tools, including Jekyll and Ruby. I improved the UX design of the website, incorporating features requested by others as well as some I developed myself. In particular, I adapted markdown files of scholars' essays so that they could be seamlessly displayed on the new website — a key step in allowing us to feature contributions to the

Project Description

by Giovanna Ceserani, Associate Professor of Classics, Faculty Director of CESTA

In the eighteenth century thousands of northerners traveled to Italy for a journey of cultural and symbolic capital they called the Grand Tour. These travels were a formative institution of modernity, contributing to a massive reimagining of politics and the arts, of the market for culture, of ideas about leisure, and of practices of professionalism. Since 2008 the Grand Tour Project has worked to create and use digital tools, analysis, and visualizations to bring us closer to the diverse travelers, elites and otherwise, who collectively constituted the world of eighteenth-century travel to Italy. We have been working with the five thousand printed entries from *A Dictionary of British and Irish Travelers to Italy 1701-1800,* digitally transforming and enhancing them to create a dynamic searchable database of more than six thousands digital entries along with digital visualizations of these travelers' journeys and lives. The project's current focus is on public release of the interactive database, alongside a companion digital volume of related chapters and scholarly essays.

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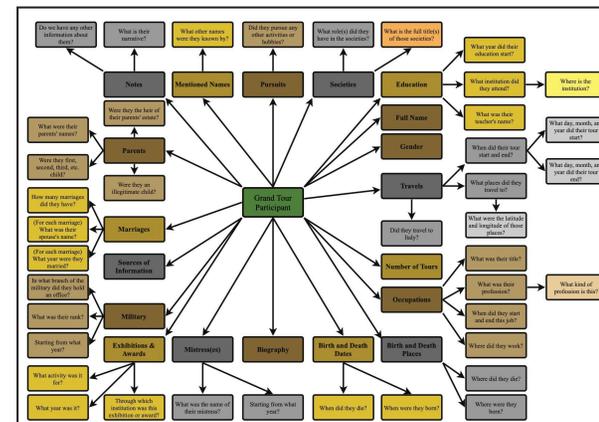
A data schema map showing all fields and dimensions in our database for each traveler, as well as how they relate to each other.
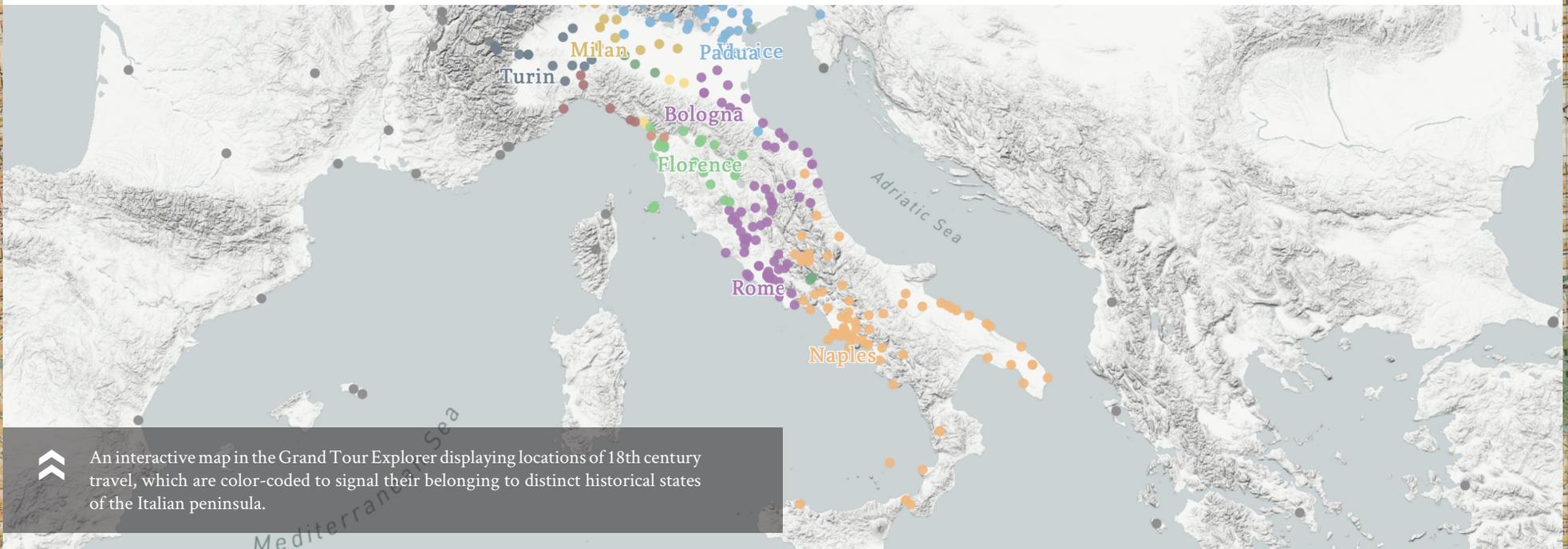
An interactive map in the Grand Tour Explorer displaying locations of 18th century travel, which are color-coded to signal their belonging to distinct historical states of the Italian peninsula.

Grand Tour Project.

Both of these tasks contributed to the project's dual goals. The map demonstrates the large-scale power of using digital humanities methodologies to navigate over five thousand entries from the *Dictionary* and uncover previously undetected trends and patterns in the travelers' movements. The book reveals how digital media can help us access the personal perspectives inherent in the foundational stories of the eighteenth-century Grand Tour of Italy, by displaying the original work scholars have produced using the Grand Tour Explorer database.

I am grateful to have taken part in the project as it comes to a close this year. Following my work on the map and book, the Grand Tour Project will undergo review and then finally reach publication, after a decade of hard work. I look forward to seeing the ultimate realization of everyone's work on the project, with many thanks to Ashwin Ramaswami, Mark York, Annie Lamar, Giorgio Caviglia, Rachel Dubit, Cody Leff, Jake Coolidge, and especially Giovanna Ceserani, who has been an incredible leader and inspiration during my work at CESTA.

Cataloguing Data for the Grand Tour Explorer

by Ashwin Ramaswami

Previously, I worked on improvements to the Grand Tour Project website, including adding new features, improving reliability, storing and calculating more data, and helping with deployment. This summer, I helped catalogue a data schema for all data stored in the Grand Tour Explorer. To do this, I noted each field stored in the database, and then made a list of the fields along with their corresponding descriptions. This should be one of the last necessary steps before the Grand Tour Explorer can finally be published. Please check at https://grandtour.stanford.edu for announcements related to release.

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Interactive Nolli Map Website of Rome

Reconstructing Rome with QGIS

by Krain Chen

This summer, my work on this project involved using QGIS, an open-source Geospatial Imaging Software tool, to draw polygons that matched the original extent of each Nolli building at the time the map was created. These drawings were based on art history and metadata research I conducted.

Some of the resources I used for this task included the Lanciani Archive Collection, the Letarouilly website, and the Mapping Medieval Rome site, all of which include historic building plans, especially plans for palazzi and churches. I also used the Vasi Plates, 220 views of Rome drawn by Vasi, a contemporary of Nolli. In some cases, by examining architectural changes between buildings seen from Vasi's street-view drawings, I was able to determine boundaries between buildings that were not apparent from the ichnographic plan.

Another useful reference was a catasto layer I imported to QGIS to underlay my polygons. "Catasto" is Italian for "register," and this was in fact a "land register" map used for tax purposes. A surprising number of maps I used were related in some way to taxation, census collection, and other bureaucratic uses—which goes to show that taxes really are inescapable. Next I describe my process for one church in particular, Santa Maria sopra Minerva.

Project Description

by Erik Steiner, Co-director of the Spatial History Project, and Nick Camerlenghi (Dartmouth College)

The goal of this project is to revitalize, preserve, and assure universal open access to the Interactive Nolli Map Website, a pioneering but nearly 15-year-old website that is reaching its end of life. The "Nolli Map"—a highly accurate ichnographic plan (as opposed to a bird's eye perspective typical of earlier representations)—was a milestone in the art and science of cartography, and a touchstone for Roman and urban studies and a prototype for the study of spatial history.

Today, advances in geospatial web technology bring new opportunities to reinvigorate this important resource. We are developing a new site that features a redesigned user interface and interactive map consistent with current web design, coding, and accessibility standards. We are transforming the graphical presentation of the map into a geospatial web app, allowing us to overlay a trove of already georeferenced data spanning from antiquity to modern days. Included in this is a renewed effort to digitize the outlines of some 1320 historic building plans, develop richer metadata records, and link them to open data authorities.

Nolli structures as color-coded 3D polygons on top of the original Nolli map.

Images from the Nolli Map Engine 2.0

« Modern buildings as 3D blocks on top of the original Nolli map (top). Color-coded Rioni (regions) of the Nolli map; Rione Pigna, in teal, was a focus for my work this summer (middle). Zoomed-in section of the Nolli map showing Ecclesiatical buildings overlaid with purple and light blue, residential with dark blue, and public with yellow (bottom).

Case Study: Santa Maria sopra Minerva

To start, here is a description of the church, found on a Wiki page (https://romanchurches.fandom.com/wiki/Santa_Maria_sopra_Minerva): "The enormous convent was north of the church, and as mentioned occupied the entire city block. The Palazzo to the left of the church (north side of the piazza) was for public functions… The main cloister is just next to the left hand aisle side chapels, and has arcades on all four sides. A large garden court is to the north-east, and a third court with a smaller garden is to the north."

By parsing this description and using various floor plans, I determined which parts of the building belonged to the convent and which to the church proper. Then, after setting up basemap layers in QGIS and creating the polygons for the church, I updated our master file and prepared it for the interactive site.

Contributions and Next Steps

The metadata research I did helps the team draw more accurate polygons. This in turn improves the user-facing level of the project, since the extents of the Nolli buildings that visitors to the site see are determined by my metadata research. Next, we will create a complete, accurate "Nolli layer" for the website using the same process I developed for the Rioni Pigna, S. Eustachio, and S. Angelo buildings. I also provided feedback for the user interface and usability of the site; even over the course of this summer, the site went through several different versions. Next steps for this project will include finalizing design choices for the website and refining the overall user experience. To see our work, or to experience the engine for yourself, visit the new Nolli Map website at http://nolli.uoregon.edu/.

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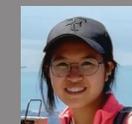
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George Moses Horton Project

Project Description

by Zephyr Frank, Professor of History, and Cecil Brown (Independent Scholar)

Who was George Moses Horton? What is his significance to American culture today? An African-American slave (1797–1888) challenged by laws that prevented him from learning to read and write, Horton developed a method of composing poetry orally. Like contemporary rappers JayZ, Common, and the Last Poets, he created a new way of making poems, generally called "free-styling." Students paid 25, 50, or 75 cents for Horton's poems, depending on the level of passion toward their object of affection. Using AR (augmented reality) and VR (virtual reality), the Horton Project will transport viewers to the antebellum world of the University of North Carolina, helping us to recover aural and spatial dimensions of oral poetry and performance in the 19th century.

The Life of a Visionary — in Virtual Reality

by Mark York

This project is concerned with the life of George Moses Horton, an early 19th century poet, visionary, and slave. Horton was an oral poet, yet he is studied primarily through the written form. We believe that this does not do him justice. Thus, our team aims to bring his works, experiences, and world to life for viewers through the use of virtual reality. The George Moses Horton Project is less research-oriented than it is creative, and our focus is on continuously refining an artistic experience. We hope to make the most of virtual reality — and, later, to incorporate augmented reality, motion capture, and other new technologies — in order to educate the user and allow them to experience, to some degree, George Moses Horton's reality.

Throughout the summer I was responsible for the technical side of the project. I used the video game software Unity to build 3D digital environments and to animate the project's non-playable characters. I also found free or affordable assets and used Adobe Mixamo to create free, smooth animations for our models (graciously created previously, by the intern before me). Finally, I helped with storyboarding and scripting, as well as with recruiting and directing voice actors.

Before my involvement in the project, a demo was created and made available on YouTube. Since then, the script has been revised, and I used the demo as a backbone to make continual additions to the story as a whole.
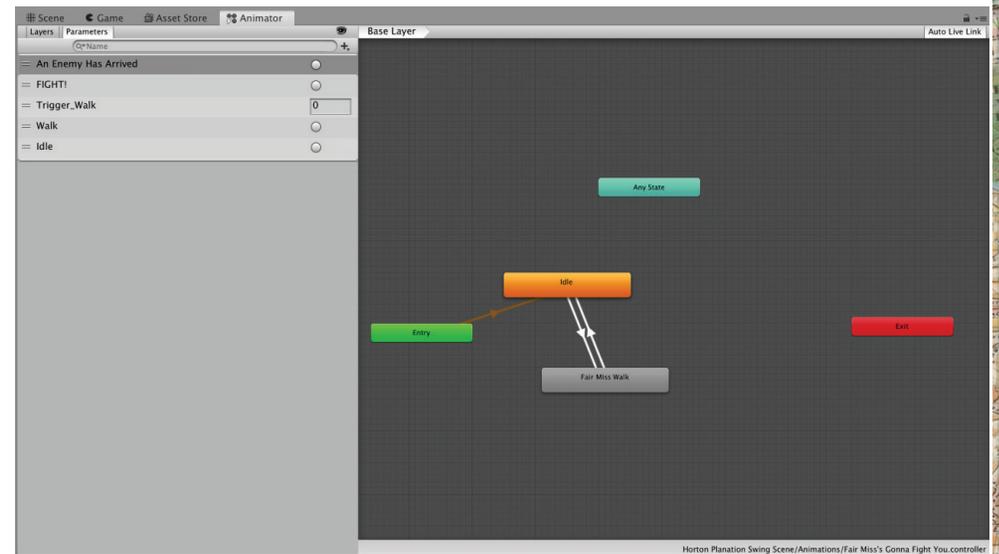
This summer, I saw the project through its first act. We begin with Horton reciting poems to himself as he works on the plantation. Then, the son of the plantation owner enlists Horton's expertise, having Horton write a love poem for a "Fair Miss" that he can pass off as his own. By this point in the story, we have introduced George Horton as a character and established his poetic talent. By the end of the act, Horton will wind up on a university campus.

Now we are in position to dive more fully into the story, exploring Horton's experience in an academic setting and establishing the American South's reaction to him. The script for this second act has been finalized, and the project team is ready for their curtain call.

« Screengrabs from the 3D digital environments and animated character of George Moses Horton, built using the video game software Unity.

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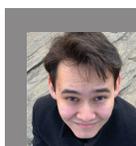
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Senegalese Slave Liberations Project

Project Description

by Richard Roberts, Professor of History, and Rebecca Wall (Hamilton College)

The Senegalese Slave Liberations Project builds on the Slave Voyages Database, which has transformed the study of the trans-Atlantic slave trade by presenting the most comprehensive collection of individual slave trade voyages and the most complete set of evidence of African ports of embarkation and American ports of disembarkation. The Slave Voyages Database, however, tells us virtually nothing about slavery and the slave trade within Africa. The Senegal Slave Liberations Project provides a crucial counterpart to the Slave Voyages project in presenting evidence of slavery and the slave trade in the Senegambian, Mauritanian, and Malian region of West Africa during the second half of the 19th century. The evidence from the registers of liberations focuses on slaves who sought their own liberation under French colonial authority from 1857-1904. Our project involves three linked stages: it provides unique identification for each case of liberation, analyzes the data, and develops visualizations of the data to support academic research and innovative pedagogy.

Centering Liberation in the Narrative of the Slave Trade

by Joshua Goodwin

As a research assistant for the project, this summer I worked on expanding the size of our transcribed dataset and on creating a new framework for analyzing our findings for future research and publications. I increased the size of our dataset to over 10,000 individual entries of liberated persons — extending our coverage of the original data source to the years 1894-1904

— by collating the data and entering it into Excel. The project team also made significant progress in gathering additional data connected to minors who were liberated into custody of the state, a group of particular relevance to our future research goals and to our understanding of this previously marginalized and historically overlooked population.

In addition to expanding the dataset, I developed data visualizations using Tableau and other tools. These visualizations will help us showcase specific changes in demographic statistics over the 1894-1904 period; our eventual goal is to extend this project's coverage to the entire 50-year period contained within the original data source. Finally, this summer we also created a new
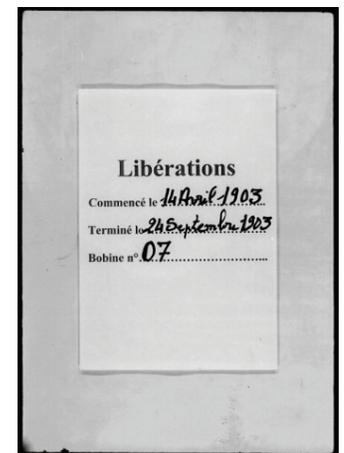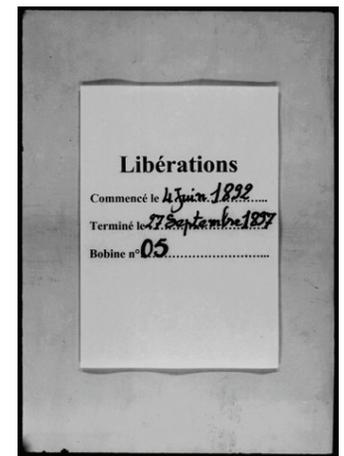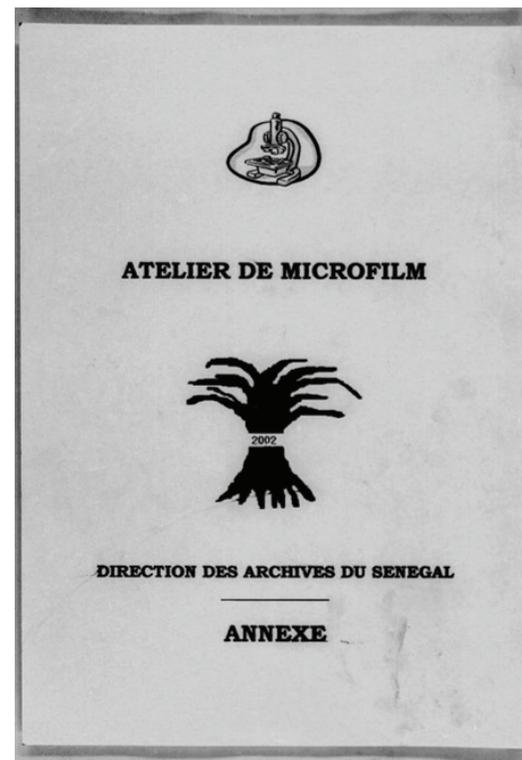
Digitized records of slave liberations from the National Archives of Senegal.

Age Distribution by Year

Scanned cover and pages from logbooks with information about liberated slaves from the National Archives of Senegal.

LOCATION OF LIBERATION AND OFFICIAL IN CHARGE

Charts showing the breakdown by age group of slave liberations in Senegal from 1894 to 1903 (top) and the locations of liberations and the Senegalese officials who processed them (left).

website through Stanford Sites; this website will allow the team to present our visualizations and research updates to the public.

Next steps for the Senegal Slave Liberations Project include creating new data visualizations, expanding our review of the research literature on the topic, which in turn will allow us to start the paper-drafting process. As the project is slated to be presented on a panel at the November 2020 African Studies Association Conference, I plan on having a paper draft completed during early Fall Quarter.

Our site is still under construction, but can be visited at https://senegalslaveliberations.sites.stanford.edu/ .

STUDENT RESEARCHERS

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Egypt in South Africa

Project Description

by Grant Parker, Associate Professor of Classics

Egypt has held an exceptional place in the western imagination: located within the world's largest desert, the country is an elongated oasis along the Nile river. This setting nourished one of the world's earliest civilizations, its monumental architecture and writing system conferring a distinctive cultural status. Westerners have viewed Egypt as timeless and exotic, an 'orientalist' fantasy. In South Africa's history, ancient Egypt has been implicated in colonial ideologies, offering a template for monumentality and for antiquity itself.

The Aesthetics of Egypt in Art, Literature, and Imagination

by Karunya Bhramasandra

This summer, I worked with Professor Grant Parker and Dillon Gisch on Egypt in South Africa, a project devoted to understanding and complicating Egyptian aesthetics in South Africa.

I've been working on this project since February. Our initial goals were to investigate the ways in which Egypt appears in South African culture, and to display our findings in an online exhibition through Spotlight, an open-source digital exhibition tool developed at Stanford. Because of the variety of material we encountered, much of which made reference to Egypt and South Africa in more oblique ways, the project has evolved, taking on a slightly more philosophical cast. The question we seek to answer has shifted from "Why does Egyptian influence appear in South Africa?" to "Why does Egypt matter in South Africa, and why?" Our new question is more academic, less passive, and generally more interesting, and it came out of research I did this summer.

»

E. L. Sambourne, 'The Rhodes Colossus,' *Punch Magazine* (1892): Egypt is presented as the counterpoint to the Cape of Good Hope, marking the extent of Rhodes' territorial ambitions.

«

(Laerskool) Gymnasium,
Paarl, South Africa (1858).
The Egyptianizing style of this
building, in the shape of the
central tower, many friezes and
other decorative details, stems
from the interests of its founder,
Rev. G. W. A. van der Lingen,
Dutch Reformed minister of Paarl
for an extended period (1831-69).

⌃
The Donkin Memorial Pyramid and Lighthouse. In the background are Port
Elizabeth harbor and the suburb of Humewood in the distance. The stone
pyramid was built at the behest of Acting Governor of the Cape, Sir Rufane
Donkin (1820-21), in memory of deceased young wife, Elizabeth Frances née
Markham, and also named the new port after her. The choice of Egyptian style
for the monument is in keeping with the orientalizing fascination that attended
British military presence in Egypt around the Battle of the Nile (1798). Picture
postcard ca. 1977: Protea Colour

Investigating Metadata and Material

We began during the school year by looking through the work of Isak
Cornelius and Anlen Boshoff, scholars who researched Egyptianizing architecture
and artifacts some years ago, and cataloguing the objects that appeared in their
work in an extensive spreadsheet. From there, our search became more varied.
We went through *Punch* magazine, looking for 19th- and 20th-century political
cartoons that drew the Egypt-South Africa link while making reference to India
or the Suez Canal. We read several letters from upper-class British travelers
who compared features of South Africa with the exoticized features of Egypt.
We also read *King Solomon's Mines*, *She*, and *Smith and the Pharaohs* by the British
novelist Rider Haggard. These sources shed light on a more implicit, symbolic
connection between Egypt and South Africa. It wasn't just that Egyptian symbols
were being used on South African buildings — Egypt appeared in the popular,
hereditary imagination.

This method came with its share of complications. One of the main
issues we've encountered is that our exhibition will include very controversial
material. Many of the items I read this summer are racist, sexist, and generally
problematic, and we've been discussing ways to display this material that will
suit our purposes while also acknowledging our deep awareness of its flaws.
Instead of passively displaying material and letting viewers make of it what they
will, our exhibit will ideally be self-reflexive, self-conscious, and explicit in its
intentions in displaying problematic material.

Next Steps

By the end of the summer, we cleaned the metadata in our spreadsheet
and prepared it for uploading onto Spotlight. Our next steps include finding
visuals to stand in for some of our non-visual sources and obtaining licenses to
use them. We want to take advantage of Spotlight's powerful interface, which
allows viewers to peruse our material with as much or as little guidance as
they would like. We've also discussed creating educational resources for South
African students, so that they get a more nuanced picture of the ways Egypt
appears in South African culture. The intracontinental connection between
Egypt and South Africa is not often talked about, but we hope people will come
away from our exhibit with a better understanding of its complexity and beauty.

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Immigration Detention: A History

Project Description

by Ana Minian, Associate Professor of History

This project tracks the history and growth of immigration detention in the United States from Ellis Island to the present. In particular, it focuses on the detention of European migrants in Ellis Island, Chinese migrants in Angel Island, Cuban migrants in the Atlanta penitentiary, and Central American migrants who have experienced family separation. Through these case studies, it hopes to tell the broader history of immigration detention.

Tracing an Oral History of Angel Island

by Sean Lee

While working on the Immigration Detention project with Professor Ana Minian this summer, I was responsible for finding a survivor of the Angel Island Immigration Detention Center with whom we could conduct an oral history interview. Even under normal circumstances, this search would have been difficult: Angel Island closed in the 1940s, and many survivors have passed away, while those remaining are advanced in age. Remaining survivors also have varying levels of English fluency, and might be uncomfortable sharing their stories, since for many the experience of being detained and interrogated, often for months and with a language barrier, remains traumatic. The search for a survivor would take time.

Searching for Survivors

Since we believed Angel Island survivors might be found among the Chinese Consolidated Benevolent Association's membership, I originally planned to visit the association in San Francisco and meet with the Chinatown community. However, once the Covid-19 pandemic hit, I had to find survivors remotely.

I first reviewed previous oral history interviews done with Angel Island survivors. I wanted to get a glimpse into the history we hoped to document, and understand what style of interview questions would be most respectful and effective. After ranking these interviews and discussing what kind of oral history
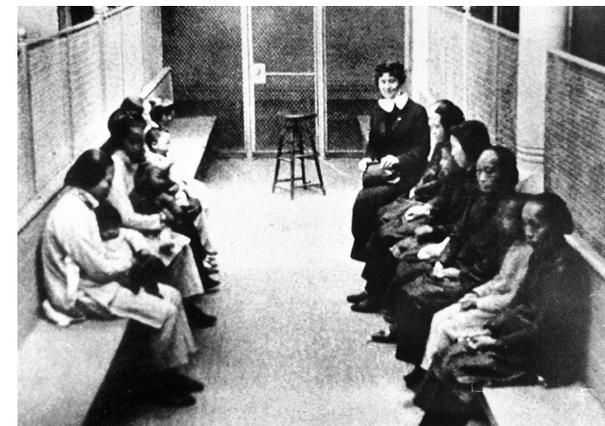
« Detained immigrants await processing at the Angel Island Immigration Station, circa 1925.

interview we hoped to conduct, I set out to find Angel Island survivors through remote outreach.

Reaching Out to Asian Diasporic Communities and Museums

In recent years, the Asian diaspora has coalesced to form large community groups on Facebook based on shared culture and identity. I am a member of many of these groups, so I submitted posts in both English and Chinese asking for leads. These posts yielded many comments, but very few actual follow-ups. As I had guessed, many people had relatives who had gone through Angel Island, but most survivors had passed away. A few were still alive, but under pandemic conditions family members were unable to visit or ask about sitting for an interview. Some people in these groups had contacts with nonprofit and historical research organizations that had previously worked with Angel Island survivors, and I sent emails to these organizations. I managed to contact

Administrative buildings at the Angel Island Immigration Station, circa 1917.

historians, documentary filmmakers, and even the president of the Angel Island foundation, but many of the survivors they had worked with had passed away or were out of contact due to the pandemic.

Next Steps

Even once I reached out to larger organizations like the Chinese Historical Society of America and the Chinese Consolidated Benevolent Association, I was redirected to people I had already contacted. Ultimately, my search did not result in an oral history interview. Nevertheless, I was able to contribute to the project by creating a compendium of contacts and leads for Angel Island survivors, which can be pursued after the pandemic has passed. Next steps for the project include reconnecting with these contacts, visiting the Chinese Consolidated Benevolent Association, finding an Angel Island survivor who is willing to speak about their experiences, and conducting an oral history interview. This interview will then be condensed and incorporated into Professor Minian's book on immigration detention in America.

Detained immigrant boys undergoing a medical examination, circa 1920.

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RESEARCHERS

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Modernist Archives Publishing Project

Project Description

by Alice Staveley, Senior Lecturer of English

The Modernist Archives Publishing Project (MAPP) is a critical digital archive of early 20th-century publishing history. The site displays, curates, and describes with rich metadata documents that contribute to the 'life cycle' of a book. It uncovers the often invisible industry actors — editors, illustrators, reviewers, printers — who bring works into the public eye. The collection contains thousands of images from archives and special collections relating in the first instance to Virginia and Leonard Woolf's Hogarth Press — letters, dust jackets, financial records, paper samples, illustrations, sketches, production sheets, and other 'ephemera' — but we are actively expanding into other presses, with the long term goal of building the infrastructure currently lacking in book historical studies to engage a comprehensive comparative landscape of 20th-century book publishing. Our newly digitized materials are presented with peer-reviewed summaries, biographies, bibliographical information, and other scholarly materials. A major project within MAPP, but not yet ingested into the operating system, is a large-scale transcription and data analysis project detailing all sales and purchasing records of the Hogarth Press, the first comprehensive quantitative and cultural historical project on the totality of a press's sales history in modernist studies.

Redesigning an Online Archive

by Khuyen Le and Lily Nilipour

This summer we redesigned the Modernist Archives Publishing Project (MAPP) website to make it more intuitive and user-friendly. We thought critically about the site, conducted comparisons to similar projects, and crafted a guidebook for our new design. The interface of an online archive or digital humanities project is essential, especially one which opens access to the collections of brick and mortar archives or aggregates materials from archives dispersed by institution and country.

Big-Picture Brainstorming

We began by conducting interviews with each member of the MAPP team to gather opinions on the current site and visions for its redesign. These interviews highlighted the fact that we all shared general concerns. Members also brought to light more specific site aspects and potential improvements which we might not have considered otherwise. Ultimately, we decided that the website had one central problem: its organizational structure was unintuitive, and many of MAPP's most interesting innovations were hard to find.

We tackled this problem in several ways. First, we moved the tab bar from the side of the screen to the top. Although the sidebar design was meant to invoke an archival aesthetic by resembling a bookmark, it did not permit easy navigation. By moving the bar to the top, we could break up the website's categories into drop-down menus, increasing the number of pages accessible with one click. Other sites that use this model are the Modernist Journals Project and the Mina Loy Project.
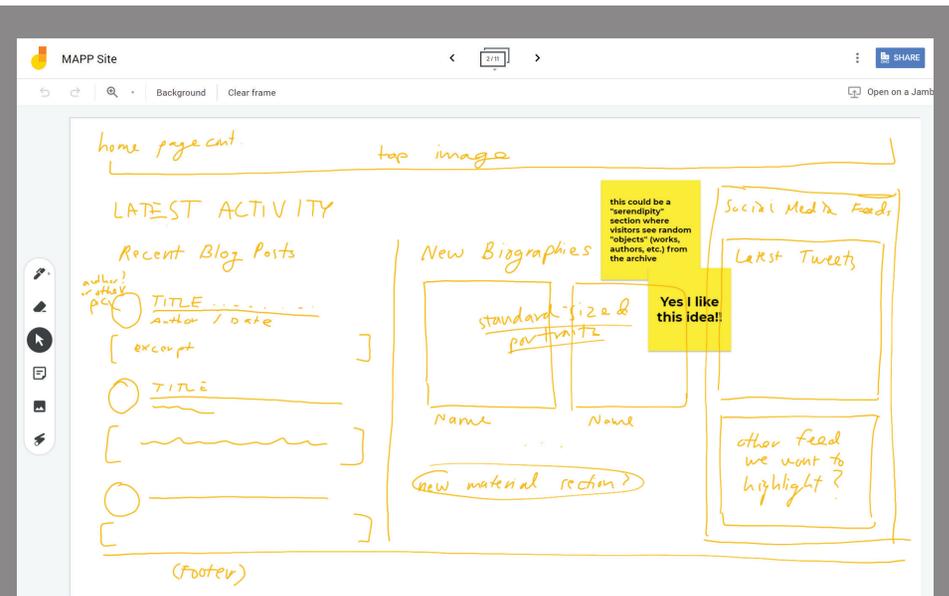
1 Screenshot of a slide on Jamboard, a platform for creating and sharing digital and collaborative whiteboards, used to brainstorm, draw design sketches and comment on each others' ideas, eventually landing on the final designs.
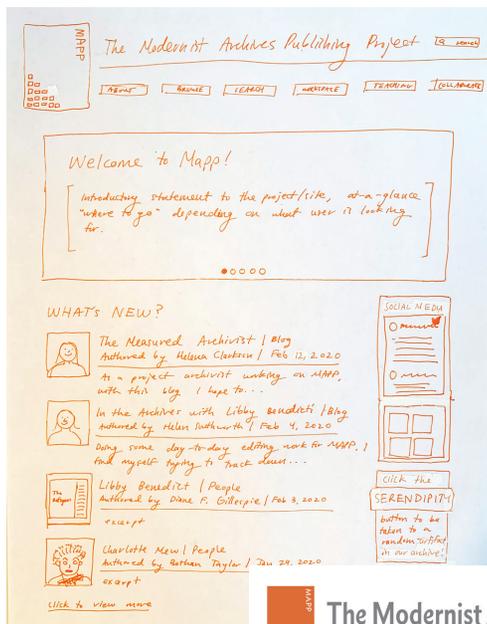
2

A hand-drawn mock-up of the new idea for MAPP's home page. These drawings served either as templates for the new design or as more concrete visualizations before creating a mock-up on InDesign.

3

A mock-up for the design of one landing page on the new MAPP website. Multiple mock-ups were created on InDesign to visualize different layouts.

Organization and Details

We then reorganized the site's tabs and rethought page layouts, facing a challenge particular to digital humanities projects. Previous work on the MAPP site was aimed at creating a way to examine archival data. But the MAPP team's goal is not only to preserve the information in the archive: we also want to maintain the *form* and *experience* of being in an archive. How can site users experience the serendipity and circularity of archival work, when most websites hierarchically categorize information to make navigation as efficient as possible?

We hoped to balance these two concerns. The new homepage features a "serendipity" button, which takes readers to a random page on the site. We further emphasized serendipitous discovery by featuring random people, businesses, and works on each category's landing page. At the same time, elements remain neatly organized into grids and are visualized whenever possible (for example, book cover thumbnails or business logos). We wanted the site to be useful both for visitors looking for specific information and for those wanting to explore the archive.

The original MAPP site contained many resources related to other modernist authors and works outside of the archive itself. We concluded that these resources were too extensive to be housed within MAPP. Instead, we included resources that make use of MAPP or are otherwise directly relevant to MAPP in a new "Resources" section. For materials outside of MAPP, we created a "Beyond MAPP" tab that features a search bar with filters for various types of resources. The background of this page features images from these outside resources in order to entice visitors to explore other sites.
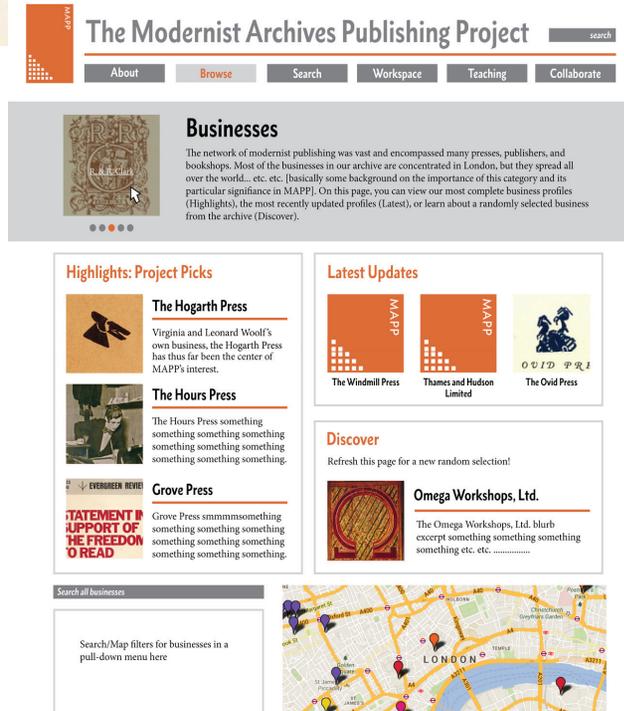
Next Steps

Now that we have completed the site redesign, the MAPP team will look for a web developer to implement the design, using a "Lookbook" we created which includes mock-ups for specific page layouts as well as detailed annotations about features and functionality.

The MAPP site can be found here: modernistarchives.com.

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Voortrekker Monumentality

Project Description

by Grant Parker, Associate Professor of History

The Voortrekker Monument, inaugurated in 1949, marks the high noon of Afrikaner nationalism. Loved and loathed, today it remains the country's monument par excellence in the conventional sense. Located on a hill that overlooks the southerly entrance of Pretoria, its block-like structure of steel and concrete stands all of 62 meters tall. Grandiose as it is from the outside, the inside 'Hall of heroes' contains something no less imposing: a 92-metre frieze, one of the world's largest historical narratives 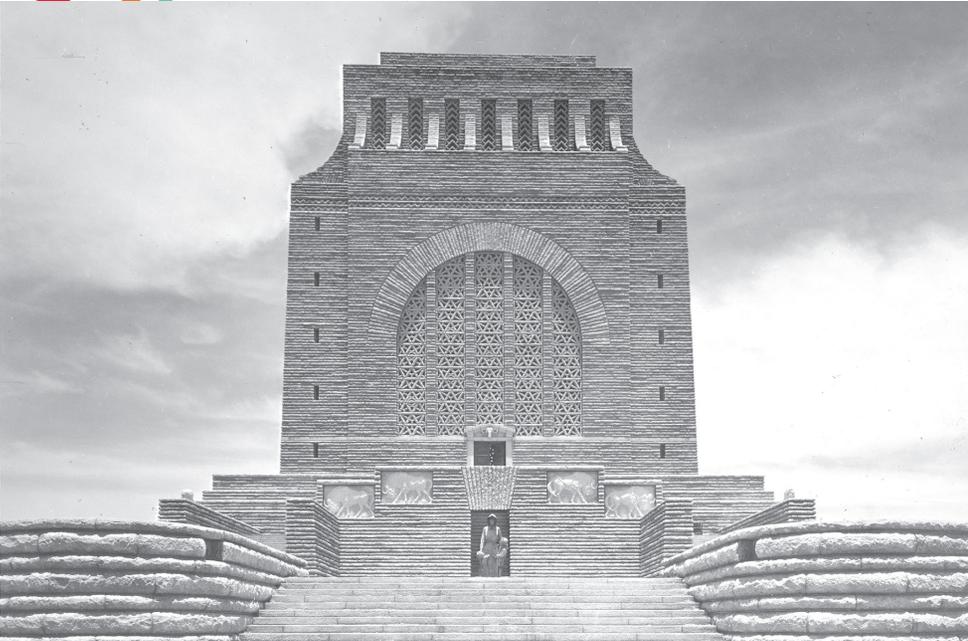in marble. It depicts the Voortrekkers or Boer pioneers who conquered South Africa's interior during the 'Great Trek' (1835-52).

The genesis of the monument and frieze can be traced, directly and in detail, to the country's socio-political debates of the 1930s and 1940s. Proceeding step by step, Elizabeth Rankin and Rolf Michael Schneider have charted its evolution from the earliest discussions through all the stages of its design to its physical realization in marble in post-war Italy and final installation inside the Monument. *From Memory to Marble: the historical frieze of the Voortrekker Monument* (De Gruyter and African Minds, 2019-2020) is a two-volume study based on unpublished documents, drawings and models. The book examines how visual representation transforms historical memory in what it chooses to recount, and the forms in which it depicts this. It also investigates the active role the Monument played in the development of apartheid, and its place in post-apartheid heritage.

Voortrekker Monumentality is a curated archive related to *From Memory to Marble*, providing high-resolution images and documents on which the book was based, most of them previously unpublished. The website provides unique insights into political imaginations and debates of mid-20th-century South Africa. At a time when public commemoration is under discussion, their content will contribute to broader discussions about the nature and limits of public commemoration amid political change, their susceptibility to reframing and greater inclusiveness, and the nature of monumentality itself.

Preparing an Online Archive

Zhuoer Gu

This summer we laid the groundwork for the Voortrekker Monumentality online archive. First, we defined the contours of the project by studying key texts on the history of the Voortrekker Monument, including "Copy Nothing: Classical Ideals and Afrikaner Ideologies at the Voortrekker Monument" and From Memory to Marble by Elizabeth Rankin and Rolf Michael Schneider. These texts, which trace the history of the Voortrekker Monument and the ideological currents that it represents, are an important resource for the project, since they pay particular attention to the ways in which Voortrekker historical memory was translated into monumental form. A central goal of Voortrekker Monumentality is to give the public greater access to the images and documents that prefigured the monument itself, and which Rankin and Schneider bring to light in their work.

Our next step was to study other online exhibitions, particularly those run on Spotlight, a Stanford-developed open-source digital exhibition tool. We picked six Spotlight-run exhibits and studied their features, paying close attention to what messages they were intended to convey and how they went

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The domed ceiling and arched windows of the interior of the Voortrekker Monument (left). Assegai tips on a fence, with the Voortrekker Monument in the background (below).

⌃ A statue by Anton van Wouw depicting a Voortrekker woman and two children.

about conveying them. This led to a set of design principles that we will follow when constructing the Voortrekker Monumentality online archive.

Finally, we began the process of converting historical evidence related to the Voortrekker Monument into exhibit-ready content. In the main, this meant categorizing images and documents from *From Memory to Marble* and using these categories to create a data schema that could be used to organize all of the items in the archive. For example, a preliminary sketch for the Monument's well-known frieze could be categorized according to type of artifact, date of creation, author, historical references, etc. Once we had a workable schema, we began digitizing artifacts and adding them and their attributes to our database.

Next steps for the project include completing our database of artifacts related to the Voortrekker Monument and designing the exhibit using Spotlight.

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Visible Bodies

A Digital Archive of Twentieth-Century African Female Writers

by Glede Wang

This summer, I used Notion, a digital collaboration tool, to archive and organize Regina Twala's works. I sorted 4,300 images of documents into 590 letters, 200 photos, 29 newspaper column publications, and one collection of essays called "Untitled Manuscript," pairing handwritten texts with corresponding transcriptions and translations. Next, to enable more specific classification of each entry, I added metadata, such as author, receiver, location, and organization. At this stage I used Notion's formula feature to create a unique ID for each entry by combining numbers corresponding to each entity's attributes and time of creation. Lastly, I trained a Handwritten Text Recognition (HTR+) model for Regina Twala's handwriting with 97.5% test accuracy and put it to work transcribing documents in the database.

Project Description

by Joel Cabrita, Assistant Professor of History

Where are the African female writers of the 20th century? This project addresses the critical issue of the invisibility of female authors within established canons of 20th-century African literature, and it urgently seeks to remedy the extent to which women-authored bodies of work from this period continue to be lost, misplaced, forgotten, and ignored. Entitled "Visible Bodies", the project thus aims to give greater visibility to hitherto marginalized bodies of work. Assembling an interdisciplinary team of historians, literary scholars, and archivists, the project will create a critical digital archive displaying the key work of largely unknown 20th-century African female writers. The archive will be aimed at scholars and the general public, especially emphasizing audiences on the African continent. Phase One of the project will digitize and curate the output of Regina Twala (1908-1968), an important South African-Swazi politician and activist who wrote four manuscripts, none of which were published. The project will be launched at a high-profile public symposium, disseminating the key findings of the archive and increasing public awareness of the literary and cultural importance of African female authors.

A gathering at the Bantu Social Center, Johannesburg, South Africa (top) and a portrait of Regina Twala (left). These are part of the larger database containing around 200 photographs.

Newspaper Gallery ⊞ Gallery view ⌄   Q Search ⤢ ⋯ New ⌄

- Masterpiece in Bronze
- Umteteli Wa Bantu
- The Man Who Gets Things Done
- Mrs. R.D. Twala

Certificates and Publications Gallery + Add a view   Q Search ⤢ ⋯ New ⌄

- Flower Show Diploma
- Menoi Memorial Scholarship Fund General C…
- Mgudlu African Co-operative Association M…
- Graduate Transcript

Financial Documents Gallery + Add a view   Q Search ⤢ ⋯ New ⌄

- Subscription
- Hendrie's Stores Bills
- The Stanley
- President Shopping Center Receipt

Photos Album + Add a view   Q Search ⤢ ⋯ New ⌄

- #1
- African Members of the fourth African Eiste…
- #2
- #3

Aa Name	≣ Genre	≣ Publisher Name	○ Author	● Receiver
📄 1952.5.25	Letters		Hubby	Gelana
📄 1952.7.21	Letters		Others	Dan
📄 1953.2.25	Letters		Others	RD Twala
📄 1953.6.30	Memo		Others	Others
📄 1953.7.11	notes		Others	Others
📄 1954.2.14	Newspaper	Sunday Times	RD Twala	
📄 1954.12.13	Letters		Others	Others
📄 1954.12.31	Letters		Others	Others
📄 1955.1.26	Letters		Others	RD Twala

⌃⌃ Organization of visual aids in the Notion page, split into categories based on genre (top four). Sample data organization of around 4,300 documents (above).

My work has laid the foundation for the next phase of this project, which will include launching a website with our classifications and findings. Now that Twala's works have been sorted and labeled in chronological order, I can export the cleaned data, including photos and transcriptions, to the new website. This is why each item's unique ID is important: the website will use the IDs to provide quick and accurate access to each item, regardless of how many documents there are.

Next Steps

We have plans to expand the current project in a few ways. We will add professionally digitized photos to the database, and we will proofread transcriptions to ensure accuracy. The HTR+ model has proved to be a significant improvement on the general Optical Character Recognition (OCR) model, and one of my next steps is to train an HTR+ model for Dan Twala, Regina Twala's husband and a significant contributor to her work. I also plan to use the photographs we have sorted and categorized to provide context for readers and create visual aids, such as portraits, family trees, and biographies of key characters. Lastly, I will further sort and categorize text documents using sentiment analysis, create a section for photos and texts of special significance,

⌃⌃ Dan Twala, Regina Twala's husband and co-contributor.

and continue expanding the size of the database by incorporating more of Twala's publications, such as columns she wrote for the newspapers *Umteteli Wa Bantu* and *Izwi lama Swazi*.

Explore my database of Regina Twala's work in Notion here: https://www.notion.so/Visible-Bodies-a9609a7ca89d416f92df5b7fc9cadf56 .

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Text Technologies

Project Description

by Elaine Treharne,
Professor of English

Stanford Text Technologies investigates all forms of human communication from 70,000 BCE to the present day in order to determine trends and characteristics of information systems from the cuneiform tablet to the scroll to books, film, and mobile devices. There are several sub-projects under this umbrella, such as Recollections: Reviving Personal Archives, which seeks to uncover and investigate the lives and networks of people through archives of vintage ephemera that belonged to individuals, who kept notebooks and documents filled with artwork, stories, letters, images, names and incipient networks. CyberText Technologies is another major funded project, which focuses on the long history of information devices from c.3000 BCE to 2015. Our analyses reveal the underlying systems and patterns that define each technology's lifecycle. Through Machine Learning exploration of big data, excitingly, we are able to predict how future technologies might evolve from the visualization of these patterns.

## Presenting the Personal in Digital Archives

by Carolyn Stein and Mark York

Recollections: Reviving Personal Archives is dedicated to preserving the stories of ordinary people. This summer, our team mainly focused on determining the best way to present digital archival materials to online users. Our long-term goal is to create a publicly accessible digital archive of personal ephemera.
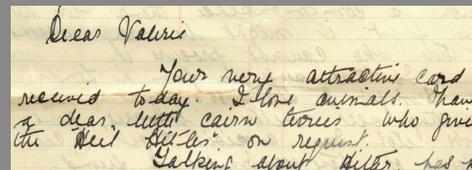
Working With the Archive

We explored other digital archives, paying particular attention to how they present their materials. Some of these archives were funded by large research institutions, while others were small and community based. We observed that there is no single, consistent standard for displaying digital archival materials. This is due to several factors: first, every digitized item requires different metadata and tools for user interaction. Since every digital item has its own needs, layouts and formatting across digital archives vary. Another factor is that technology is always changing, sometimes at a faster pace than archivists can keep up with.

We took these concerns into account while considering possible layouts for the Text Technologies website, focusing mainly on how best to display modern archival materials such as letters and notebooks. One of the archives we have published online is a collection of personal ephemera and letters addressed to a woman named Valerie Layton, a Jewish-Austrian immigrant
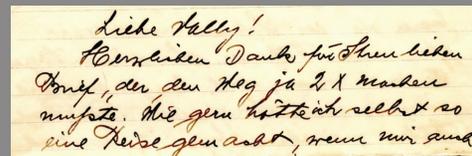
«

These two images are both excerpts of letters, in German and English respectively, sent from Austria. The first was written by a woman named Edith from Stockholm in 1938. The second was by a man named Pat Kennedy from Cork, written in 1939.
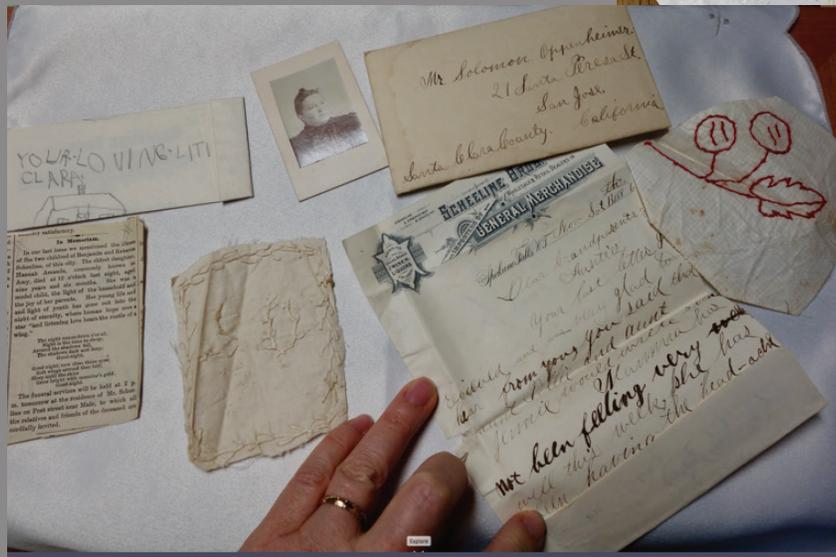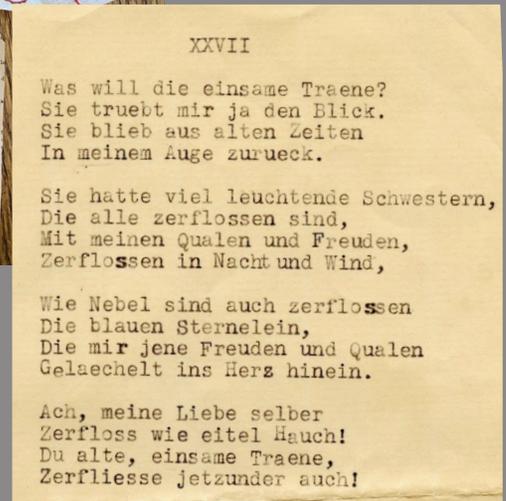
Collected ephemera from the Recollections: Reviving Personal Archives collection

A short poem written in German, unknown author and date.

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Was will die einsame Traene?
Sie truebt mir ja den Blick.
Sie blieb aus alten Zeiten
In meinem Auge zurueck.

Sie hatte viel leuchtende Schwestern,
Die alle zerflossen sind,
Mit meinen Qualen und Freuden,
Zerflossen in Nacht und Wind,

Wie Nebel sind auch zerflossen
Die blauen Sternelein,
Die mir jene Freuden und Qualen
Gelaechelt ins Herz hinein.

Ach, meine Liebe selber
Zerfloss wie eitel Hauch!
Du alte, einsame Traene,
Zerfliesse jetzunder auch!

living in England during World War Two. Since this archive consists primarily of letters, our team explored different ways of displaying digitized letters and retaining user interest. While we are not quite ready to launch the website, our work this summer has created a good foundation.

We began transcribing the letters from the Layton archive, creating a timeline of Layton's life, and collecting details about the people who sent her letters. We have only been able to transcribe about half of the archive because a significant number of the letters are written in German cursive and require a specialist to transcribe. Our inability to transcribe and translate these letters has left some gaps in our knowledge of Layton and her life.

Next Steps

Next steps for our team include transcribing and translating the German letters and creating story maps for the Valerie Layton archive. We predict that making the story maps will require the use of programs such as arcGIS and Omeka. We hope that the story maps will allow us to show the locations from which letters were sent, as well as to explore how Layton's correspondence fits into the historical context of Europe during World War Two.
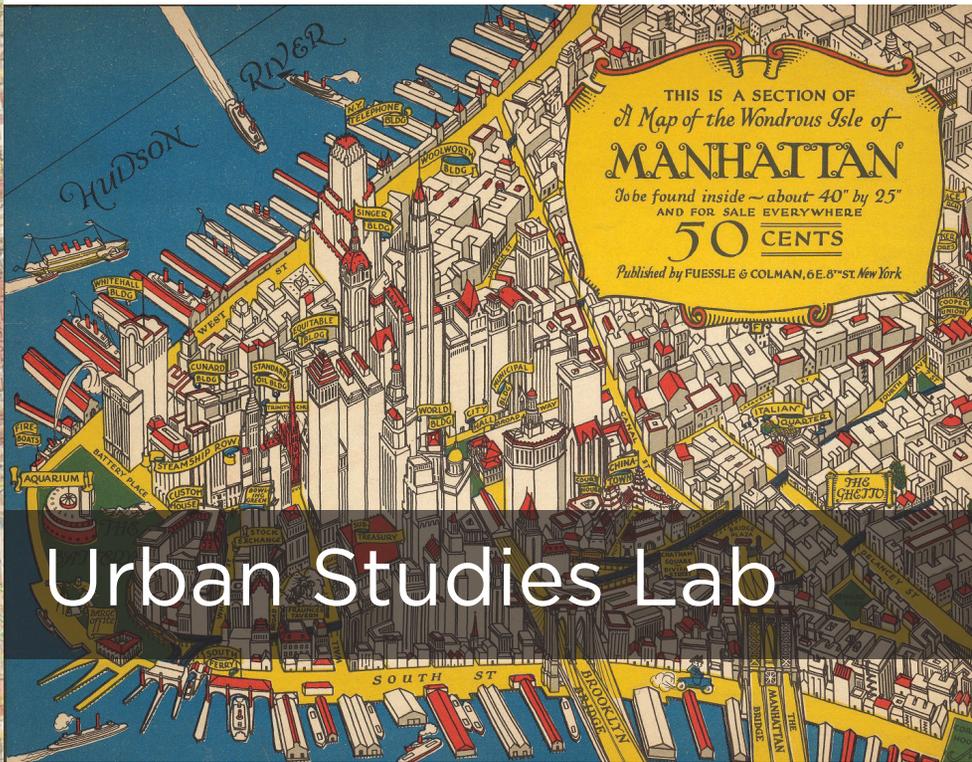
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Urban Studies Lab

Project Description

by Ato Quayson,
Professor of English

Deploying an interdisciplinary focus that draws on geography, anthropology, archival and historical research, as well as perspectives from literary criticism and cultural studies, this project refocuses the discussion of Accra, New York, London, and Hong Kong in ways that have gained scant attention in the published literature. The project marries theoretical concepts to everyday research practice by attending to the relationships between high streets and business districts, street life, spatial morphologies, and the character of inequalities that are inextricably entangled with these cities. We study how high streets and other urban phenomena intersect with various elements and vectors of urban life such as restaurants, ethnic food stores, transport systems, parks, and the real estate market, among other phenomena, even when these do not

appear to be obviously related to one another in the first instance. The project also has an interest in the apparent messiness of migration and settlement for understanding the different ways in which globalization has been sedimented in these cities in the 20th and 21st centuries. Thus, the project aims at a full-spectrum and multi-scalar approach to cities, starting from high streets and their adjacent neighborhoods, and expanding in concentric circles to embrace other urban phenomena.

The History of High Streets in the Urban Metropolis

by Audrey Ward and Dongming Zhang

This summer, our team investigated the history and evolution of high streets in New York and Hong Kong. Using online maps and databases, we extracted and catalogued information about shops in specific areas of the two cities, and dug into the data to trace the stories of minority migration in the two metropolises.

Analysis of Hong Kong

Our team started with the city of Hong Kong—a multicultural, dynamic commercial hub facilitating interaction between the Eastern and Western worlds, whose convoluted history of international migration is reflected in its shop distribution. Using Open Street Map and Open Refine, we extracted data on the distribution of businesses around Victoria Harbour, in Yau Tsim Mong, and in the Causeway Bay area, with a particular focus on jewelry stores and businesses run by South Asians. We also completed a review of literature about international diasporas in Hong Kong. Key sources included *Chungking Mansion: Ghetto at the Center of the World,* by Gordon Mathew, and *Understanding South Asian Minorities in Hong Kong,* by John Nguyet Erni and Lisa Yuk-Ming Leung.

One major challenge of this task was finding online information on little-researched topics, such as the path of jewelry exported from South Asia to Hong Kong. Although annual reports of international firms provide occasional clues, their lack of detail makes tracing routes difficult. Smaller jewelry firms may have more detailed information, but this information is less accessible online. We might have visited stores and talked to shop owners in person, but this was hardly feasible considering the COVID-19 pandemic. Nevertheless, it is this lack of resources that indicates the gap in current research that our lab intends to fill.
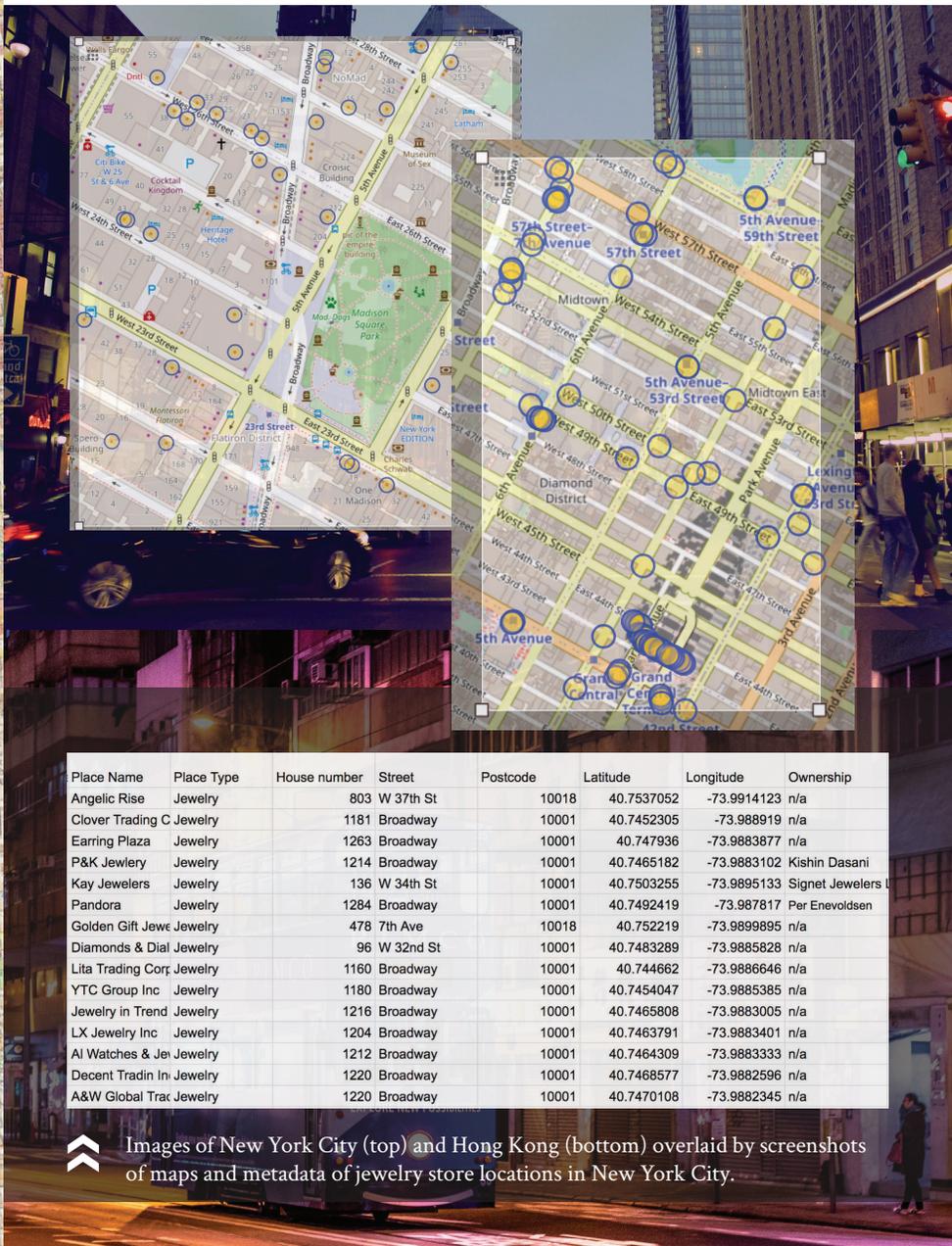
Analysis of New York City

New York City, our second metropolis of interest, also developed as a port city. The high streets we focused on here were Manhattan's 5th Avenue and Bleecker Street. We used Open Street Map and Open Refine to collect disaggregated data on the types of business on these streets. For multiple sections of 5th Avenue we created lists of place types — such as restaurants, museums, and transportation stops — and their locations. Searches ranged from the Shopping District (39th to 59th Street), to the Flatiron District, to a more northern section bordering Central Park. This allowed us to analyze street trends and provided a basis for historical research on the area. Bleecker Street offered a different perspective on what constitutes a "high street," thanks to its roots as a bohemian enclave and home of immigrants and writers and its lack of high-end and brand-name stores.

Our New York analysis also focused on the jewelry trade. The Diamond District, a block of 47th Street just west of 5th Avenue, is the most prominent jewelry district in the city, and most diamonds in the U.S. flow through this block's businesses. Our research here focused on cataloging jewelry businesses and the ethnic and immigrant groups that were prominent in this area. We gathered information on local Jewish and Armenian communities and their relation to the jewelry business. We also studied historical immigration patterns and divisions of labor.

Next Steps

Our analysis of high streets in Hong Kong and New York has laid the foundation for further research in the Urban Studies Lab. Understanding trends that appear in the physical landscapes of these streets will help us understand the history and social makeup of surrounding areas and the cities more broadly. Our research on high streets in these cities will continue, and soon the project will shift its focus to other cities and their high streets, with the aim of completing a comparative analysis of urban landscapes.

Place Name	Place Type	House number	Street	Postcode	Latitude	Longitude	Ownership
Angelic Rise	Jewelry	803	W 37th St	10018	40.7537052	-73.9914123	n/a
Clover Trading C	Jewelry	1181	Broadway	10001	40.7452305	-73.988919	n/a
Earring Plaza	Jewelry	1263	Broadway	10001	40.747936	-73.9883877	n/a
P&K Jewlery	Jewelry	1214	Broadway	10001	40.7465182	-73.9883102	Kishin Dasani
Kay Jewelers	Jewelry	136	W 34th St	10001	40.7503255	-73.9895133	Signet Jewelers
Pandora	Jewelry	1284	Broadway	10001	40.7492419	-73.987817	Per Enevoldsen
Golden Gift Jewe	Jewelry	478	7th Ave	10018	40.752219	-73.9899895	n/a
Diamonds & Dial	Jewelry	96	W 32nd St	10001	40.7483289	-73.9885828	n/a
Lita Trading Corp	Jewelry	1160	Broadway	10018	40.744662	-73.9886646	n/a
YTC Group Inc	Jewelry	1180	Broadway	10001	40.7454047	-73.9885385	n/a
Jewelry in Trend	Jewelry	1216	Broadway	10001	40.7465808	-73.9883005	n/a
LX Jewelry Inc	Jewelry	1204	Broadway	10001	40.7463791	-73.9883401	n/a
Al Watches & Jev	Jewelry	1212	Broadway	10001	40.7464309	-73.9883333	n/a
Decent Tradin In	Jewelry	1220	Broadway	10001	40.7468577	-73.9882596	n/a
A&W Global Trad	Jewelry	1220	Broadway	10001	40.7470108	-73.9882345	n/a

Images of New York City (top) and Hong Kong (bottom) overlaid by screenshots of maps and metadata of jewelry store locations in New York City.

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Literary Lab

Project Description

by Mark Algee-Hewitt, Assistant Professor of English, Laura McGrath (Temple University), and J.D. Porter (University of Pennsylvania)

The Stanford Literary Lab is a research collective that combines computational methods of textual analysis with critical inquiry to investigate questions of interest to both scholars in literary studies and across the humanities and social sciences. The lab is currently engaged in over 16 active projects which are supported by over 25 collaborators. While much of our work focuses on using computation to explore patterns of language in corpora of literature, through our collaborations we have brought our methods to bear on fields as diverse as economics, international law, and medicine.

This summer, our undergraduate researchers made major contributions as members of a number of projects, including the Grammar of Gender, Personhood, Novel World-Building, and the Literature of Social Distancing. We encourage you to visit our website, litlab.stanford.edu, to learn more about our research projects and publications.

Grammars of Gender

by Nika Mavrody

Grammars of Gender studies gender as a social syntax encoded in language and expressed through performance by cross-referencing computational responses to canonical 18th and 19th century novels with situated literary analysis. By accumulating examples of inconsistent gender assignments attributed to named character entities by the BookNLP model, we hope to form a better understanding of the computational reader: how and where do its readings of novels follow or diverge from our critical responses to the same texts? We triangulate the feedback loop of metadialogic reception by drawing on historical and biographical criticism.

Gender's Syntactic Structures

by Karen Ge and Regina Ta

This project aims to better understand gender by studying syntactic structures within literature. We analyze linguistic nuances to identify parts of a text where standard gender binaries are rendered ambiguous or subverted. Our hypothesis is that these moments of gender ambiguity and gender transference between characters can be embedded within grammatical structures.
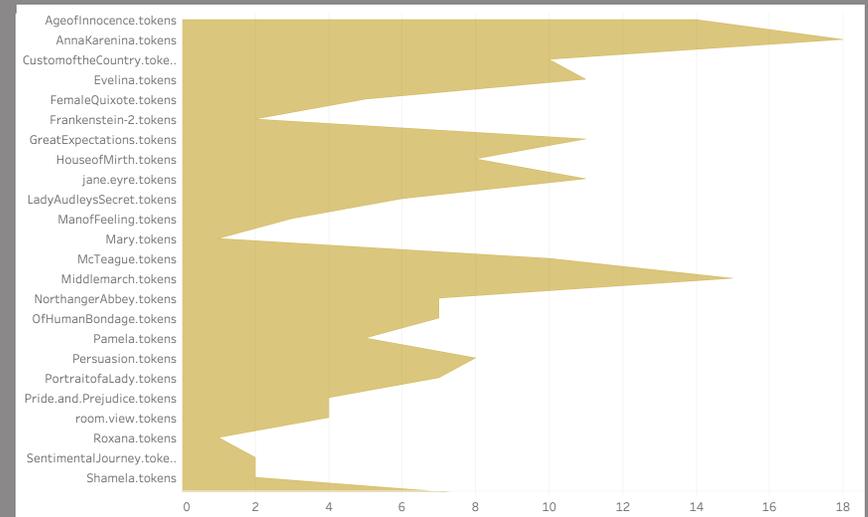
The novels in the project corpus, along with the number of ambiguously gendered characters within each novel.

We ran BookNLP — a natural language processing pipeline that can dissect texts into categories such as character entities and pronoun references — on a corpus of so-called "novels of love" written between the 16th and 20th centuries. This allowed us to analyze characters recognized by BookNLP through the lens of the pronouns that are attributed to them. In particular, we focused on passages where BookNLP produced inconsistent gender assignments. We conducted close readings of these passages, comparing BookNLP's computational interpretations to our own readings, which were informed by our knowledge of the texts' historical and authorial backgrounds.

For instance, in Mary Wollstonecraft's novel *Mary: A Fiction*, BookNLP correctly identifies Mary with female pronouns, with the exception of two instances of identifying her with male pronouns. When we dive into the passage containing one of these "misgenderings", we see that BookNLP attributes to Mary a male pronoun that refers to God:

> "Heaven had endowed her with uncommon humanity, to render her one of His benevolent agents, a messenger of peace; and should she attend to her own inclinations?"

Gendering Mary as male in this moment is a striking result, and it is related to Wollstonecraft's turn against tradition in portraying women as rational, independent agents. As we continue to uncover instances where binary terms and gender norms give way, the challenge for us is to discern whether the "misgenderings" made by BookNLP are arbitrary mistakes or meaningful signals of authorial intent. Another example of this phenomenon occurs in Thomas Hardy's *Tess of the d'Urbervilles*. In one scene, Tess's suitor Angel is identified as

female when his character is adjacent to passive verbs, as he takes on the role of a spectator.

We also used Python and Tableau to visualize trends in the computational readings, such as the distribution of male-to-female and female-to-male genderings for characters, across our entire corpus of 40 novels.

Next Steps

Looking forward, our next task is to analyze inconsistencies in gendering for each text in our corpus and to tag the corresponding passages. The long-term goal of this project is twofold: first, we aim to parse the tagged passages in order to identify the extent to which gender is constructed through syntactic structures. Second, we intend to build a model that can better understand the decisions of the computational reader: what gender paradigms, if any, are embedded within tools like BookNLP, and what gender paradigms are being built as computational tools parse large amounts of textual data?
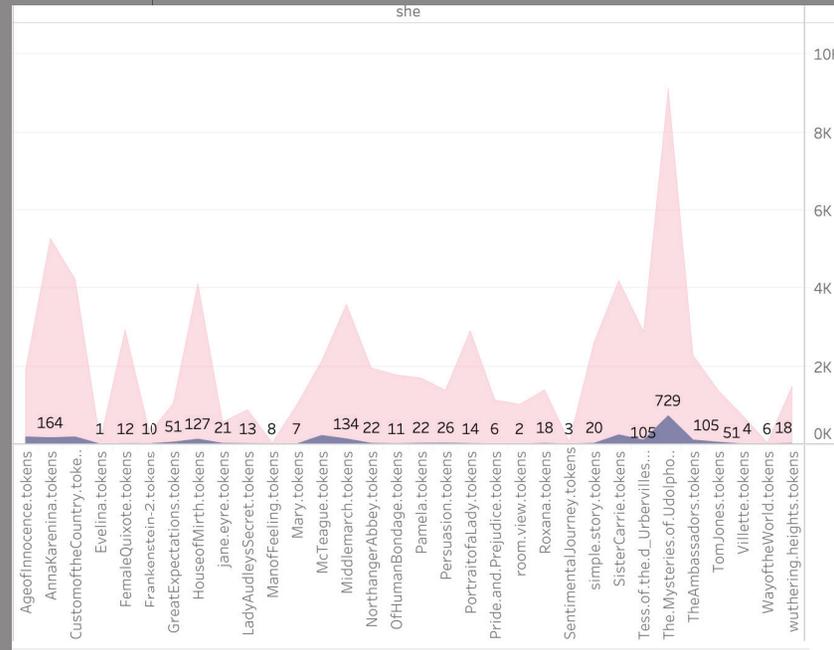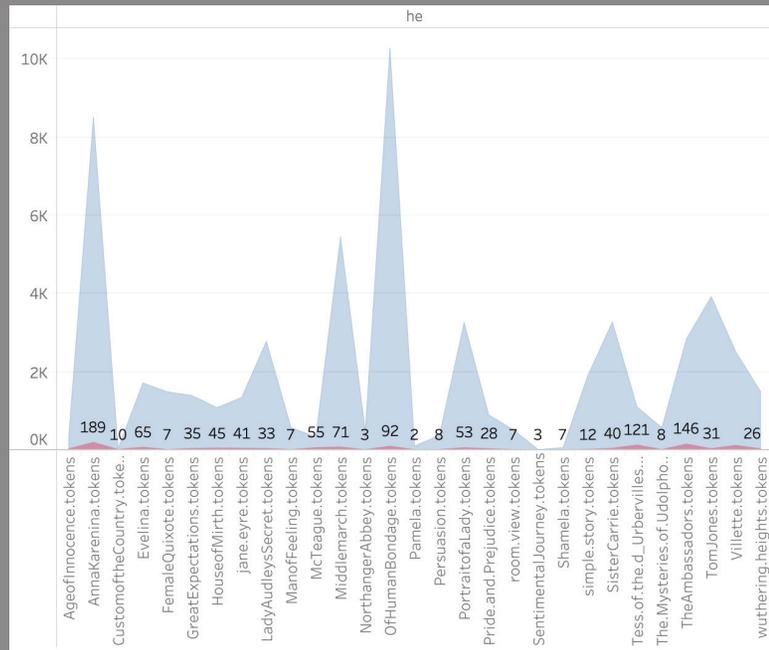
Predominantly male-gendered (left) and female-gendered (right) characters for each novel, along with their inconsistent female (left) and male (right) identifications from BookNLP.

The Literature of Social Distancing

by Matt Warner

Our project, a collaborative effort of the Stanford Literary Lab, combines quantitative and qualitative methods to investigate social distancing and the novel of isolation. Does the way that we describe isolation in literary contexts change according to the gender of the characters, whether it is voluntary or not, or whether the distancing happens alone or in groups? How has it varied over the course of literary history, or across genres? By exploring the ways in which novels have confronted the experience of social distancing, we seek to gain a better understanding of our own moment.

Tagging and Analyzing Scenes of Isolation

by Leah Chase and Regina Ta

The Literature of Social Distancing project aims to understand how isolation is portrayed in the context of the novel. We explore the factors that make a novel of isolation distinct from other texts: for example, are such novels marked by differences in spatial arrangements within the text like "character space" indicated by pronouns and dialogue, rather than "physical space" indicated by descriptions of setting? Do novels of isolation cluster around a specific genre or time period? How do the gender of characters and the number of characters change the context of isolation?

To answer these questions, this summer we assembled a wide variety of novels and marked passages of interest with XML tags. For instance, we tagged scenes of social distancing with <sd> and scenes of social interaction with <soc>. A comparison of these passages will help us understand how a text's moments of isolation differ from its moments of social interaction in terms of dialogue, setting, and narrative context.

When marking these passages, we also identified other attributes of the text: the gender of any characters present, their number, the scene's setting,

whether characters are present by choice or by force, and the narrative purpose of the text's presentation of isolation or socialization. Our hope is that these attributes will help us identify the factors that distinguish novels of isolation from other literary texts.

Our next steps include parsing the passages that we have collected and analyzing any trends that might appear. For example, it might emerge that diction differentiates scenes of isolation from scenes of interaction, or that scenes of isolation share certain attributes across literary genres.

```
Fitzgerald_F.Scott_GreatGatsbyRT_retagged.txt

And so it happened that on a warm windy evening I drove over to East Egg to see two old
friends whom I scarcely knew at all. Their house was even more elaborate than I expected,
a cheerful red and white Georgian Colonial mansion overlooking the bay. The lawn started
at the beach and ran toward the front door for a quarter of a mile, jumping over sun-dials
and brick walks and burning gardens—finally when it reached the house drifting up the side
in bright vines as though from the momentum of its run.

<soc number="4" type="visit" gender="mixed" protagonist="yes">

The front was broken by a line of French windows, glowing now with reflected gold, and
wide open to the warm windy afternoon, and Tom Buchanan in riding clothes was standing
with his legs apart on the front porch.

He had changed since his New Haven years. Now he was a sturdy, straw haired man of thirty
with a rather hard mouth and a supercilious manner. Two shining, arrogant eyes had
established dominance over his face and gave him the appearance of always leaning
aggressively forward. Not even the effeminate swank of his riding clothes could hide the
enormous power of that body—he seemed to fill those glistening boots until he strained the
top lacing and you could see a great pack of muscle shifting when his shoulder moved under
his thin coat. It was a body capable of enormous leverage—a cruel body.

His speaking voice, a gruff husky tenor, added to the impression of fractiousness he
conveyed. There was a touch of paternal contempt in it, even toward people he liked—and
there were men at New Haven who had hated his guts.

"Now, don't think my opinion on these matters is final," he seemed to say, "just because
I'm stronger and more of a man than you are." We were in the same Senior Society, and
while we were never intimate I always had the impression that he approved of me and wanted
me to like him with some harsh, defiant wistfulness of his own.
```

Tagging a social scene in F. Scott Fitzgerald's novel *The Great Gatsby*.

Novel World-Building

by Nichole Nomura

Novel World-Building explores the narrative techniques that allow authors of science fiction to create and communicate invented worlds. Using a combination of computational methods, we seek to capture worldbuilding at different scales, from syntagmatic combinations of words (such as "laser rifle") to paradigmatic inclusions of scientific grammar into the prose of a novel. We examine the relationship between these kinds of worldbuilding, and the relative prestige, award-status, and scientific domain of novels that use them, across a corpus of hundreds of science-fiction novels from the 20th and 21st centuries.

A Corpus of Science Fiction Novels

by Leah Chase

This summer I worked for the Novel World-Building project, expanding and building upon its large corpus of science fiction novels. Most of the corpus had already been assembled by past interns, so I was able to learn and apply the organizational methods for corpus building fairly quickly. Our corpus is constructed from science fiction novels that have received acclaim, and particularly those which have won or been nominated for an award. Since books nominated for three of the biggest prizes in science fiction — the Hugo, Nebula, and Norton awards — had already been identified before my time on the project, my job was to identify every book that had won or been nominated for the


```python
def match_books(nwb_titles, gbooks_titles, gbooks_filenames):
    """
    Takes in three parameters to create owned_book_filenames, a dictionary of book
    titles + authors with the corresponding CKEYs. This is done via fuzzy matching,
    in which, given a book title + author from the NWB SF corpus and gbooks_titles,
    the best match (determined by a score out of 100) is returned and added to
    owned_book_filenames.
    """
    owned_book_filenames = {}
    for elem in nwb_titles:
        best_match = process.extractOne(elem, gbooks_titles)
        if best_match[1] > 95:
            owned_book_filenames[best_match[0]] = gbooks_filenames[best_match[0]]
    return owned_book_filenames


def main():
    # Writes a .csv file from owned_book_filenames
    gbooks_filenames, gbooks_titles = make_gbooks_dict()
    nwb_titles = make_nwb_titles()
    owned_book_filenames = match_books(nwb_titles, gbooks_titles, gbooks_filenames)
    owned_file = open("owned_file.csv", "w")
    writer = csv.writer(owned_file)
```

Source code to create a dictionary of book titles and authors via fuzzy matching.

Locus Award between 1971 and 2020.

I worked closely with Literary Lab's Nichole Nomura to complete data validations in Google sheets, deciding how "weird books" that are not easily categorized should be represented in our database and fixing any errors in the overall corpus. I spent a good portion of the summer working through the corpus to make our data as accessible and error-free as possible. At one point, we realized that some of our BookIDs, the tags we use to identify books across different sheets, were not unique; we fixed this by appending a stable number to the end of each BookID.

Once the corpus was assembled, I began planning corpus acquisitions. Before we could purchase anything, however, we had to determine which books were already in the Literary Lab's possession and which were not. To this end I wrote a Python script that reads in a .csv file of book titles from our corpus and fuzzy matches them against the Literary Lab's Chicago Manifest and Stanford's Google Books Ingest.

Corpus building may not be the most insightful or exciting part of the research process, but it is an essential step nonetheless. Without a reliable and accurate corpus, large-scale textual analysis is not possible. We are currently waiting on Stanford's Google Books Ingest to complete our order; upon receiving these books, the Novel World-Building team will be able to determine what information it wishes to glean from the corpus and how it might go about doing so. My work this summer has been an invaluable experience, not only for myself and my journey in the Digital Humanities, but also for my peers in the Novel World-Building project, who will soon be able to use the books I helped record and sort for further research.

Sample of spreadsheet containing metadata for the corpus of science fiction novels.

Personhood

Hannah Walser

The Literary Lab project on Personhood seeks to understand how texts assign the qualities that we typically associate with persons to characters depicted within the text, whether human, object or animal. These qualities, which can include animacy, independence, expression, and vocalization, among others, are often those that we associate with personhood, and the rhetorical attribution of these qualities to figures depicted by texts (whether real or fictional) play a role in determining whether we understand these figures as persons, or whether they appear as less than, or different from, the human. In this project, we use computational methods to explore what kinds of rhetorical, textual, semantic, grammatical or syntactical features play a part in giving characters the qualities of a person. By discovering how texts communicate personhood, we are able to identify figures at the boundaries of personhood: both points at which non-humans are given the qualities of a person (as in animal stories, or science fiction) or when humans are depicted as less than people (as is too often the case in medical literature, or slave narratives).

The Syntactic Structures of Human-ness

by Leah Chase, Karen Ge, Riley Seow, and Regina Ta

Broadly, this project considers what personhood is, and how texts confer personhood on characters. How is personhood embodied? Is it connected to physicality — the possession of a face, body parts, or the capacity for movement? Is it connected to emotion, agency, or thought?

We have recently made progress in creating a computational model that can establish correlations between syntactic structures and human-ness. For instance, the position of the grammatical subject is correlated with human characteristics, especially when it is adjacent to active verbs (e.g. to say, to know). On the other hand, characters in the position of the grammatical object are not correlated with human characteristics. This makes sense: objects (e.g. book, window) tend to be positioned as the grammatical object of sentences (e.g. to hold a book; to pull down a window).

This summer, we performed our analysis using two corpora: the Chicago corpus, containing the top 9,000 20th-century books in American literature across all libraries in the United States, and the American Fiction corpus (Gale), containing every novel published in America by Americans and American publishing houses between 1774 and 1920. Given that Chicago has more contemporary titles, while Gale has more historical and canonical titles,
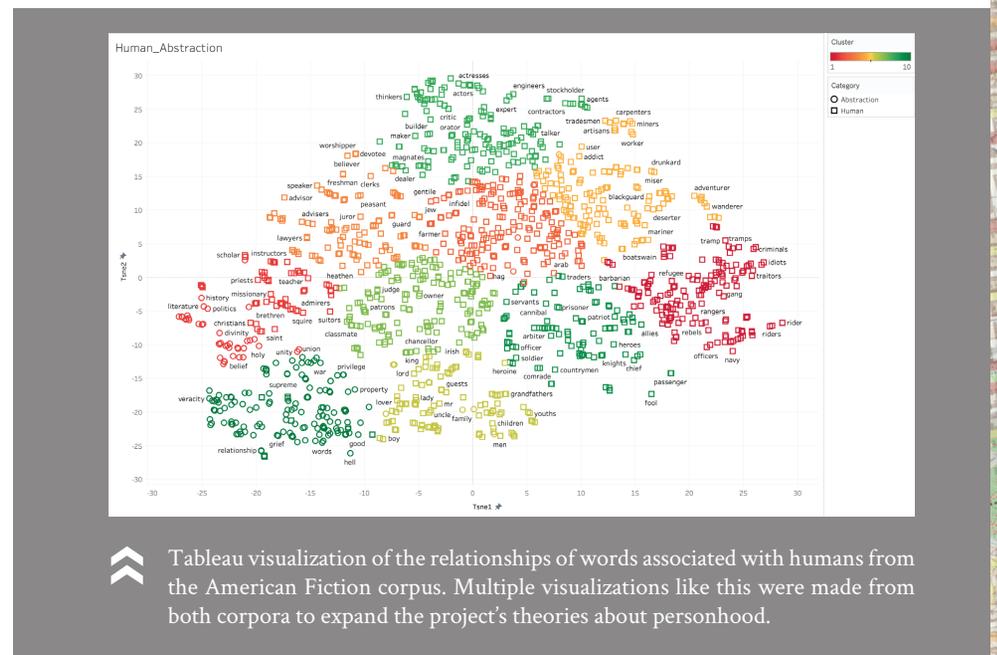

Tableau visualization of the relationships of words associated with humans from the American Fiction corpus. Multiple visualizations like this were made from both corpora to expand the project's theories about personhood.

we observed quite different results in our analyses.

We used word vector models written in R to generate lists of words from the corpora associated with humans, animals, and objects, and to visualize relationships between these wordlists. We started with a seed list of nearly 1,000 terms identified as humans, animals, and objects, and then tripled each category's number of words. The wordlists generated from each corpus differed in interesting ways, but ultimately the purpose of creating the lists was to train the computational model built by Professor Mark Algee-Hewitt to recognize humans, animals, and objects in literary texts. The wordlists needed to be as reliable as possible, so we compiled our lists into a Google Sheet and double-checked them as a team. The final wordlists, containing unanimously agreed upon terms, are now ready to be compared to other word categories, such as emotions, body parts, and organizations.

We then began comparing the relationships between words of different categories (e.g. humans and emotions, humans and animals). We used R to build TSNE-graphs (more formally known as t-distributed stochastic neighbor embeddings) and Tableau to visualize relationships. These visualizations were intended to help us expand our theories of what constitutes personhood within a text.
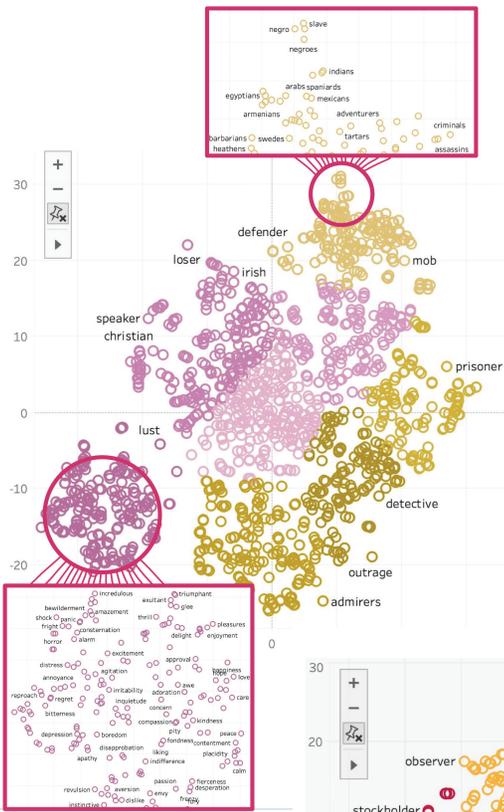
» The outcasts, the foreigners, and the disenfranchised are the humans who are farthest from our cluster of emotions, suggesting that they are portrayed with less emotional depth — and therefore possibly, endowed with less personhood.

» Family figures — specifically blood relatives and lovers — are closest to body-part terms that concern matters of the flesh and heart, such as "artery," "breast," "groin," "tendon."
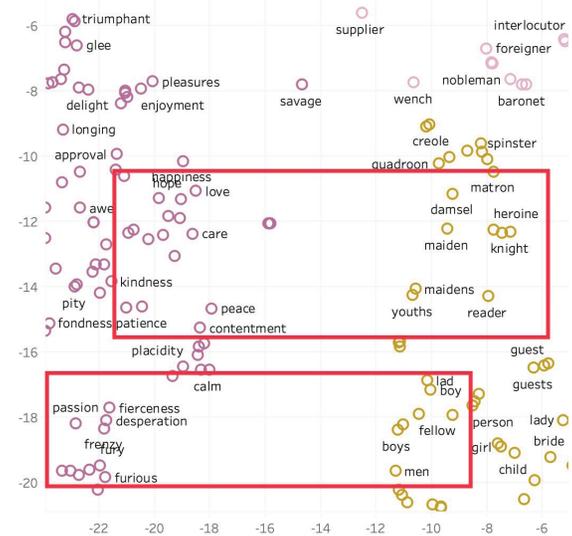
» From our list of humans, female figures (i.e. "damsels," "matrons," and "maidens") were closely associated with emotions, such as "love," "care," and "patience," whereas male figures (i.e. "lad," "boy," and "men") were closely associated with emotions, such as "fury," "passion," and "fierceness."

Our work is already producing interesting findings. A comparison of human and animal lists from the Gale corpus found that some terms related to imperialism — such as "cuban," "arab," and "savage" — were more closely correlated with the animals wordlist than with the human list. When we compared human and emotion lists from the Gale corpus, terms for slaves, criminals, and ethnic minorities were situated farthest from the cluster of emotion terms, suggesting that they are portrayed with less emotional depth — and perhaps endowed with less personhood.

Finally, we built a web scraper that will allow us to conduct personhood analysis on literature guide websites. Our first scraper gathers character and book information from Shmoop, while a more general scraper is being written to analyze LitCharts, CliffNotes, Gradesaver, and other sites. The data from these sites will help us make further observations about the way literary characters are defined and treated: for example, whether a source treats a collective pronoun as a character, and what level of personhood embodiment affords.

Thus far we have taken a bird's eye view of our analysis, looking at corpus-wide trends. Our next steps will involve examining our data more closely and gathering more specific evidence to hone our theories of personhood.

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Karen Ge, page x

Riley Seow, page xii

Regina Ta, page xii

Panos Vandris, page xiii

Spatial History Project: Global Urbanization and Its Discontents

Project Description

by Zephyr Frank, Professor of History, Erik Steiner, Co-director of the Spatial History Project, and Leo Barleta

Over the last several decades, millions of people have migrated from rural villages and towns into urban contexts which now hold over half of the world's population. The growth of cities has also been accompanied by an astonishing surge in land values and housing costs, driving housing prices upward and crowding out low-income residents. This multi-institution, NSF-funded collaboration investigates the spatial and temporal dynamics of property, rent, and displacement in multiple world cities and their hinterlands in the 20th century.

This summer, the project focused on the process of urban sprawl in Latin America and its relation to changing patterns of land use, zoning regulations, and distressed landscapes. In the past five decades, Latin America shifted from a predominantly rural society to the world's most urbanized region. Using GIS and Computer Vision, we analyze remote sense and street-level imagery of cities like Guadalajara (Mexico), Belo Horizonte, and Curitiba (Brazil) to understand how the expansion of cities produced urban vulnerability and distressed landscapes.

Visualizing Land Urbanization

Elias Aceves

Our first task this summer was to work on refining the computer-vision (CV) system the Global Urbanization and its Discontents project uses to classify street-level imagery from Google Streetview (GSV). This CV system is designed specifically to recognize visual signals of urban distress and vulnerability and to correlate the locations of these visual signals with urban growth and sprawl over the past five decades. It is able to do this with some degree of accuracy because it is based on CV models that take into account various levels of capital investment, residential density, and physical stability. We are currently testing these models in Latin American countries, but will soon expand our work to cover other parts of the globe.

Fine-Tuning Computer-Vision Models

We began by compiling an annotated bibliography on CV systems and tagging GSV images with their attributes to make our models more precise. We took the latter process a step further by creating an interface on Amazon MTurks that will allow us to train our CV models on larger datasets. Amazon MTurks allows us to hire people from around the world to tag GSV images—and specifically to hire workers from certain regions to tag GSV images related to those regions. For example, we can hire people in Colombia to tag GSV images of Bogotá. This process will help mitigate one of the major shortcomings of AI, which is a failure to account for cultural and geographical variation. Our job was to design and implement the MTurk interface that our workers would interact with, with an emphasis on presenting information in clear, easy-to-follow ways and creating a series of instructions to "teach" them what they needed to do. This is an important step forward for the project, because the more tagged GSV images that are incorporated into our models, the more accurate our CV system will be.

Charts showing error rates from the process of testing the computer-vision system.

Urbanization of Ejidos in Guadalajara

Once we had done this, we moved on to another task: helping Prof. Frank and the team draft an article on the relationship between urbanization in Guadalajara and declines in the area of land controlled by local ejidos. To this end, we used archives of the *Diario Official de Mexico* to research the histories of ejidos around Guadalajara, looking in particular for information about changes in territory over time under various administrations. We tracked these changes over time in an excel sheet that showed each change within every ejido across each presidential administration. This elucidated some trends across time: which periods corresponded to land loss, when land tended to be privatized, and the rate of urbanization of the area. This work was a valuable contribution to the article, which may in fact become two separate articles.

« An archived page from the *Diario Official de Mexico* concerning the expropriation of land from the ejido "Santa Ana Tepetitlán" (below).

⏫ Illustration of urban growth classifications. Method delineates changing urban, periphery, and rural areas over time (above). A screenshot of the Amazon MTurks interface we designed to allow people from around the world to help us tag GSV images (below).

Are these images similar?

concepts: investment, capital, money, economic status, welfare

Instructions

The landscape on the left (example) represents a certain set of concepts. We want to know if, **in your opinion**, the landscape on the right represent the similar concepts.

Steps

1. Read the list of concepts.

2. Look at the image in the left (example). Try to understand why that image is assocaited with the concepts.

3. Decide whether the second image represents similar concepts.

4. Select one of the buttons below to record your impression.

Observations

We are not expecting a right/wrong answer. Please use your judgement and knowledge about the region to interpret the images.

We value your input. Let us know if there is anything we can do to improve the HIT.

Yes   No

STUDENT
RESEARCHERS

Elias Aceves,
page ix

Poetic Thinking

RILKE: THE SUBLIME AND THE KITSCH

Posted by Ravi Smith '22 as part of the course "Myth and Modernity" taught in Spring 2020.

FINDING POETRY (& POSSUMS)

Posted by Ravi Smith '22 as part of the course "Myth and Modernity" taught in Spring 2020.

DO MACHINES BUILD HUMANS?

Posted by Jason Zhao '21 as part of the course "Myth and Modernity" taught in Spring 2020.

Project Description

by Amir Eshel, Professor of Comparative Literature

Committed to equality, inclusion, and respect for all, Poetic Thinking creates a space for users to share and discuss academic and artistic work. Participants are encouraged to see themselves as active contributors to any work they engage with, read, or listen to. Active in shaping the worlds they inhabit, they are no longer the mere passive recipients of historical wisdom or past artistic expression.

A Site for Collaborative and Intellectual Exchange

by Ravi Smith

This summer we built the next iteration of Poetic Thinking, an online platform designed to allow students in a course to exchange ideas. Poetic Thinking is also intended to encourage meditation on the kinds of humanities discourse we seek to cultivate in our classes, and on how technology can help form spaces of intellectual exchange. With these aims in mind, we had a few ideas for the next iteration, including upgrading the site's aesthetics, finding ways to encourage students to post in a wider variety of media, and adding spaces for course syllabi and student profile pages.

Choosing the Right Template

We started by selecting a WordPress template, which would determine the overall look and feel of the platform. After various trials, we departed from the original site's chronological format and decided on a magazine-style template. We felt that creating various sections for posts, like those seen in the websites for publications such as *The New York Times* or *The Atlantic*, would help students engage with each other's content at a deeper level. Thus, on the homepage, we made sections for each kind of student composition: creative writing, essays, music and film, and art. We concluded that intentional spaces created for each category would motivate students to post in less popular categories if they wanted their posts to appear on the homepage. In this way, we hoped to encourage students to post more creative content.

After settling on a magazine-style template, we recreated the template from scratch instead of using a ready-made one. This allowed us to fully customize the look and feel of the webpage and to avoid superfluous features that might slow it down.

CESTA SUMMER LIFE

HOME   COMMUNITY   ALL POSTS   HOW TO USE

ANNOUNCEMENT

Yard Signs: The New Small Talk
Ravi Smith | 1 Comment

All Hollywood classics are...the same?
Lily Nilipour | 2 Comments

These days, Tik Tok is my safe space.
Riley Seow | 2 Comments

Posting Instructions
Ravi Smith | August 6, 2020
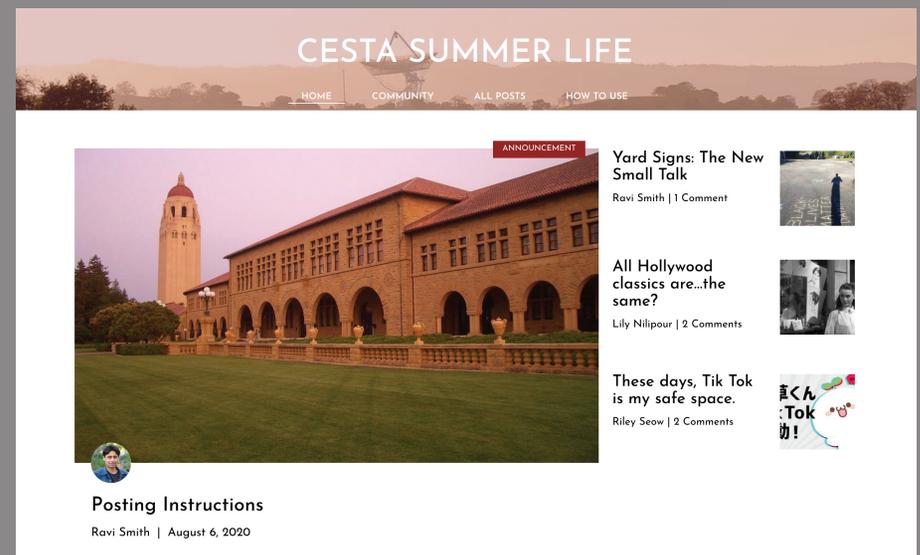
A screenshot of a template for the Poetic Thinking site. CESTA interns this summer posted on this sample template to test the functionality of the site as well as share their thoughts and experiences from a summer in quarantine.

THINKING DIARY

CREATIVE WRITING   CRITICISM   ART   FILM & MUSIC

ALL POSTS

CRITICISM   CRITICISM   CONTEMPLATION   CREATIVE WRITING

Elections, Promises, Action   "Quarantine" by Eavan Boland and our own pandemic

READ MORE ›   READ MORE ›

A Misunderstanding of Arendt in the Current Climate

READ MORE ›   By A. Student
November 11, 2020
No Comments

By A. Student
November 11, 2020
No Comments

Two poems by Rilke

READ MORE ›

By A. Student
November 11, 2020
No Comments

By A. Student
November 11, 2020

ART

CRITICISM

⌃⌃ The final design of the home page for Poetic Thinking, featuring a "Thinking Diary" of students' writing.

RECENT COMMENTS

Test Ravi Smith on What are questions?: "Excuse me, this is Mr. Hyde speaking."

Ravi Smith on Some aphorisms about my day: "More comments about my day to test BuddyPress."

Ravi Smith on Some aphorisms about my day: "How long can this go? This is a test comment!!! This is a test comment!!! This is a test comment!!!.."

Ravi Smith on Some aphorisms about my day: "This is a test comment!!!"

Some aphorisms about my day

July 22, 2020

By Amber

Lorem ipsum dolor sit amet, unum consul ne pro, ut inen... facete option, ei sit quaeque vituperata. Ut vel noster inter... expetendis ne. Eos repudiare suscipiantur ut, an vocent sa...

«« A sample reflection and some comments to test functionality of individual posting (left). Source code for the website (below).

single.php   [PHP script; ASCII text]

```
<?php get_header(); ?>
<div id="content">
    <div class="padder">
        <?php do_action( 'bp_before_blog_single_post' ); ?>
        <div class="page" id="blog-single" role="main">
            <?php if (have_posts()) : while (have_posts()) : the_post(); ?>
                <div id="post-<?php the_ID(); ?>" <?php post_class(); ?>>
                    <div class="author-box">
                        <?php echo get_avatar( get_the_author_meta( 'user_email' ), '50' ); ?>
                        <p><?php printf( _e( 'by %s', 'Post written by...', 'buddypress' ), str_replace( '<a href=', '<a rel="author" href=', bp_core_get_userlink( $post->post_author ) ) ); ?></p>
                    </div>
                    <div class="post-content">
                        <h2 class="posttitle"><?php the_title(); ?></h2>
                        <p class="date">
                            <?php printf( __( '%1$s <span>on %2$s</span>', 'buddypress' ), get_the_date(), get_the_category_list( ', ' ) ); ?>
                            <span class="post-utility alignright"><?php edit_post_link( __( 'Edit this entry', 'buddypress' ) ); ?></span>
                        </p>
                        <div class="entry">
                            <?php the_content( __( 'Read the rest of this entry &rarr;', 'buddypress' ) ); ?>
                        </div>
                        <?php wp_link_pages( array( 'before' => '<div class="page-link"><p>' . __( 'Pages: ', 'buddypress' ), 'after' => '</p></div>', 'next_or_number' => 'number' ) ); ?>
                        <p class="postmetadata"><?php the_tags( '<span class="tags">' . __( 'Tags: ', 'buddypress' ) , ', ', '</span>' ); ?> </p>
                        <div class="alignleft"><?php previous_post_link( '%link', '<span class="meta-nav">' . _x( '&larr;', 'Previous post link', 'buddypress' ) . '</span> %title' ); ?></div>
                        <div class="alignright"><?php next_post_link( '%link', '%title <span class="meta-nav">' . _x( '&rarr;', 'Next post link', 'buddypress' ) . '</span>' ); ?></div>
                    </div>
                </div>
            <?php comments_template(); ?>
            <?php endwhile; else: ?>
                <p><?php _e( 'Sorry, no posts matched your criteria.', 'buddypress' ); ?></p>
            <?php endif; ?>
```

COURSE OUTLINE

PROFESSOR AMIR ESHEL   **TA COURTNEY HODRICK**   **MEETING INFORMATION**

Edward Clark Crossett Professor of Humanistic Studies
Department of German Studies
Department of Comparative Literature
eshel@stanford.edu
Office Hours: Wednesdays, 3–6:00 p.m.

Department of German Studies
Department of Comparative Literature
hodrickc@stanford.edu
Office Hours: By Appointment

Wednesday and Friday
10–11:20 a.m.
Zoom Link:
Password:

ABOUT   **LEARNING OUTCOMES & GOALS**   REQUIREMENTS & GRADING   ADDITIONAL INFORMATION

• Our course is divided into five units, each revolving around a single question. For each question, we will explore what Arendt wrote, and how scholars and writers since have built on and challenged her ideas, as the point of departure for a broad, ongoing, open-ended consideration of the way each of us can answer these questions for ourselves, in our own time.

• We will read closely many of Arendt's major writings, considering the interplay between form and content and exploring the poetic craft of

SYLLABUS

WEEK 1   **WEEK 1**
WEEK 2
WEEK 3   WEDNESDAY
WEEK 4   • Arendt, "Preface" to Between Past and Future
WEEK 5   • "Could it Happen Here?" by the Hannah Arendt Center
WEEK 6   FRIDAY
WEEK 7   • Arendt, "Preface" to Between Past and Future
WEEK 8   • "Could it Happen Here?" by the Hannah Arendt Center
WEEK 9   RECOMMENDED
WEEK 10   • Arendt, "Preface" to Between Past and Future
          • "Could it Happen Here?" by the Hannah Arendt Center
          FURTHER RESOURCES
          • Arendt, "Preface" to Between Past and Future
          • "Could it Happen Here?" by the Hannah Arendt Center

«« The course outline and syllabus for Professor Amir Eshel's fall quarter class, "Hannah Arendt: Facing Totalitarianism." The site allows for easy and consolidated access to course materials like these.

Designing, Troubleshooting, and Next Steps

My role involved coordinating the tasks of the various students working on the site and solving technical problems. I also designed many parts of the website's layout, in conjunction with my wonderful colleague, Art History Ph.D. student Amber Moyles. Amber deserves all the credit for the aesthetics of the site. She did an amazing job and I had a great time working with her.

Fortunately, we met our main goals, and with the help of other CESTA interns we tested the site near the end of the summer.

In the fall, our new site will be used for Professor Amir Eshel's course on Hannah Arendt. I'm sure that there will be aspects of the site that will need improvement, and I am mulling over ways to help students interact with the site and with each other — perhaps in a site-wide chat room.

If you're interested, be sure to check out the template site we made this summer at http://template-08-2020.poeticthinking.net/ and learn more about Poetic Thinking at http://poeticthinking.net.

STUDENT RESEARCHERS

Ravi Smith, page xii

LandTalk

Project Description

by Deborah Gordon, Professor of Biology, and Erik Steiner, Co-director of the Spatial History Project

The scope of climate change makes it seem too enormous to be perceived at the local scale. But over time, anyone familiar with a place notices change. LandTalk is a crowd-sourced collection of reports of changing landscapes from across the globe. The website displays interviews by a younger person with older members of their community concerning a place they have known for at least 20 years. The project is based on the idea that humans experience, understand, and can best create change at the scale of landscapes or highly localized places. LandTalk attempts to reframe and broaden discussions of climate change to highlight the ongoing human and environmental changes that are observable in everyday places, such as one's own backyard.

We are currently developing an outreach effort, writing educational content, and extending the scope of the conversation format on the site to include a discussion about the future of the landscapes described. Through this effort, we hope to more deeply engage the imagination and perspective of younger people and stimulate more substantive exchange between generations.

Adapting LandTalk to the COVID-19 Pandemic

Kimmy Chang and Emily Zhang

We worked on the LandTalk project in different ways in response to the COVID-19 pandemic and the increase in remote learning. Our summer efforts on the project proceeded along three main lines: altering the website design, the development of new educational content, and outreach communications to gain broader use in classrooms.

Website Redesign

We reviewed the web design to consider improvements to the site. We developed a set of ideas for improving the user experience and extending the site, logging and prioritizing them in Github issues. We considered ways to encourage more substantive exchanges between students and observers. We considered ways to add a follow-up question to the submission form about the future of the landscape being reported on, how the place might change in the future and what the younger person, the interviewer, thinks should happen. Our hope was that this forward-looking question will lead to a conversation between
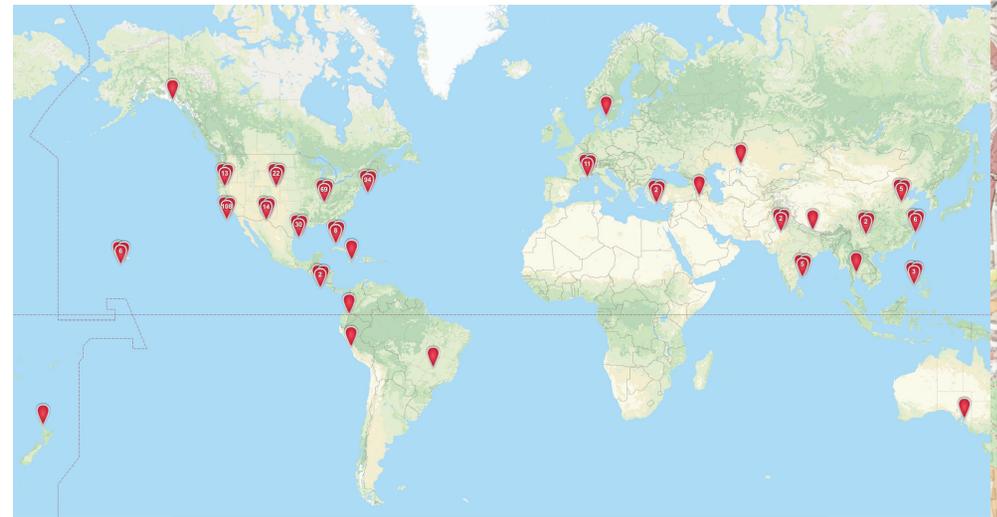
A map showing the locations of LandTalk conversations.

Salt Lake City, Utah, USA

In this video I interview my parents who have lived in Salt Lake City, Utah for the past 36 years. I ask them what they have seen change about the place they have called home for so long. They...

Lévis, Quebec, Canada

The observer has lived in the house adjacent to her backyard, located in Quebec, Canada, for over 40 years. She describes how her backyard once used to be filled with beautiful pine trees, plenty of...

Columbia, Maryland, USA

My mom and dad talk about how the Downtown Columbia area has changed over the years. It used to be much smaller, with less housing and activities. The mall had always been there, but it has since...

Jackson, Mississippi, USA

A native of Moscow, Russia, describes her experience living in Jackson, Mississippi from 1995 to the present. She says that Jackson has always been hot, and that while it has industrialized quite a...

Praça Shopping, Uberlândia, Minas Gerais, Brazil

Pedro talks about his perception of the changes of this neighborhood over time.

Central Park, New York, USA

Alexia Fernandez has lived near Central Park for over thirty years. She is a regular at the park and has been involved with the Central Park Conservancy that maintains the park. She will be talking...

A selection of landscape conversations from the LandTalk catalogue.
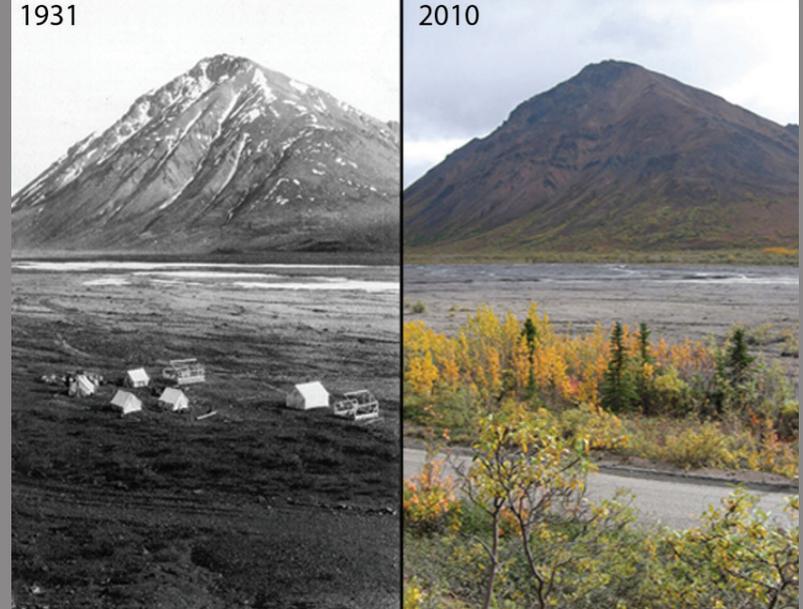
Photographs of Denali National Park used in a LandTalk lesson plan to illustrate landscape change over time. Photo Credits: J. C. Reed (AKSO Cult. Res. 31 AR 107) (1931), Tamás Szerényi (2010)

the younger and older person, and stimulate input from the interviewer. We hope this will animate discussions of landscape change. The project developer is implementing this new design in the Fall of 2020.

A Dictionary of Landscape Change

Another way we discussed improving the project was to develop content for the site that could serve as educational materials. We first created LandTalk entries ourselves to familiarize ourselves with the site and to generate more content. Next, research intern Katherine Nolan wrote a short article on the relationship between landscape change and infectious disease, focussing on the zoonotic origins of COVID-19, and highlighted some of the factors, such as deforestation, agriculture, and urbanization bring animals and humans into contact with one another. We are currently working on a "dictionary of

landscape change," a catalog of several dozen key concepts on landscape change. We are also developing entries for "invasive species", "erosion", "deforestation", "flooding", "weather", and "land use change" and outlined several other options. Each entry includes a concise description, links to additional resources, images when relevant, and links to entries in LandTalk that relate to the concept.

We began an outreach to encourage the use of the site in online education. We developed a database of roughly 50 potential contacts at other universities who had research and/or teaching interests in the fields of geography, environmental science, ecology, and other disciplines. We sent email to these contacts and have received some responses that we hope will develop into further use of the site and collaboration with other universities.

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Computational Border Studies

Text Mining in Asylum Decisions

by Bridget Algee-Hewitt, *Senior Research Scientist of the Center for Comparative Studies in Race and Ethnicity*

This project combines critical race and social justice theory with novel computational methods to study the urgent problem of bias within the U.S. court system. Using court transcripts, we reveal latent trends that govern judicial decisions, and which may ultimately disadvantage certain communities and peoples. Variation in asylum adjudication outcomes across U.S. immigration courts is well-documented, and personal factors are known to play observable (often compounding) roles that exacerbate discrepancies. These disparities suggest that outcomes are less dependent on the facts of the case and more on circumstances surrounding the hearing, including the beliefs and actual or ascribed characteristics of the participants.

We perform a content analysis of the Oral Arguments and Opinions of the Supreme Court, first seeking to determine whether recurrent themes and the manner in which they are considered in court vary according to judge-level characteristics (such as political party affiliation, gender, age, race and social identity). We then analyze these documents to determine more generally if perspectives on race and identity vary over time in correlation with public opinions and presidential administrations. Finally, we attempt to identify the unique language signature for each judge and assess whether these are related to the justices' own gender, racial, etc., identity.

Designing the Project Website

by Manya Bansal

This summer I worked primarily on designing and developing the website for the Computational Border Studies project. The main function of the website is to showcase the project's interactive data visualizations so that users can manipulate immigration-related data and gather valuable insights at a glance. My main tasks were to design layouts for desktop and mobile displays, to write the code for the website, and to find the best way to display the data visualizations produced by the research team. Another important part of working on the project was developing a Content Management System on the administrative side of the website; this will allow future interns to add or delete content without having to write code themselves. Working with HTML, CSS, PHP, SQL and JavaScript, I created a functional website that has the capacity to handle large datasets and visualizations. Hopefully the website will be ready to launch in the fall quarter!

Immigration-Court Transcripts

by Ashwin Ramaswami

Before we could analyze immigration-court transcripts for this project, we needed to get access to them in bulk. This summer, I explored some avenues for retrieving these transcripts, including FOIA requests, and calculated the likelihood that such requests would succeed (given that some requests might be denied for privacy reasons). We concluded that collecting such information in bulk may be difficult for various legal and practical reasons. Our next steps are to find alternative datasets of court transcripts, perhaps from other judicial systems or countries, and to see if we can access them in bulk, with the aim of performing sentiment analysis and other research.
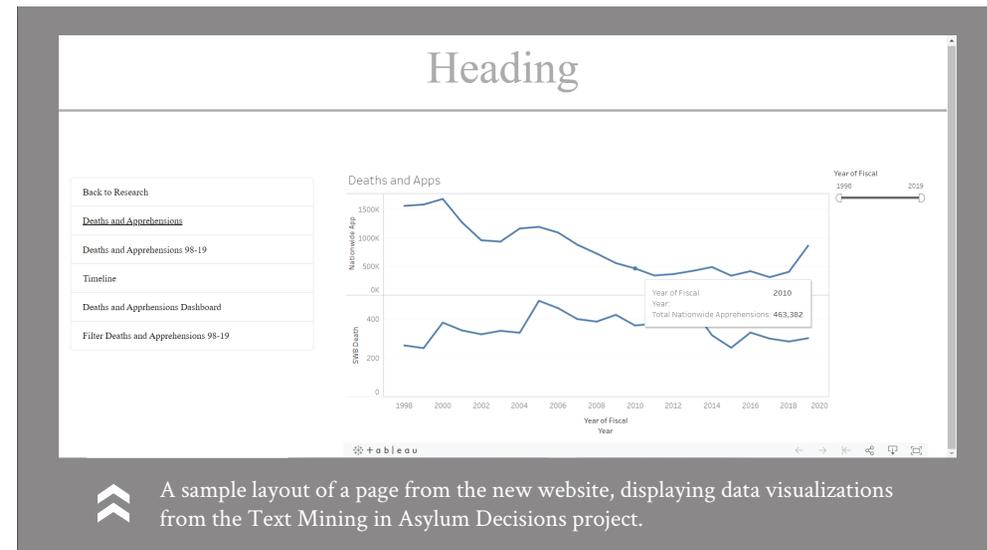
A sample layout of a page from the new website, displaying data visualizations from the Text Mining in Asylum Decisions project.

The Effects of Political Policy and Social Conditions on Latin American Migration

by Bridget Algee-Hewitt

We investigate the presence of temporal, geographic, and demographic trends in border-crossing deaths for a sample of the deceased recovered along the Arizona-México Border. To more deeply appreciate who is crossing and dying along the border, we treat it as a complex ecosystem as we study public policies, apprehension and migration rates, and forensic casework counts. We ask to what degree the population of deceased immigrants mirrors the population of living immigrants by contextualizing our death data within the shifting demographic landscape of this region. Drawing upon our analyses, we speak to how different presidential administrations adopt positions on immigration that influence who is crossing and dying along the Border. We also quantify shifts over time and space in the sending regions of deceased immigrants by searching digital media archives for remarkable conditions in home countries. From these reports, we identify trends which may have motivated migration and imposed additional emotional and physical stress. Identifying such pressures is the first step towards developing predictive models for migration surges, which in turn may provide guidance for establishing humanitarian aid, increasing the chances of immigration success among those being forced to make the long and dangerous journey across la Línea.

The Causes of Migration

by Olivia Manes

This summer I worked to identify the specific policies and events that have driven migration from Latin America to the United States since 2008. In addition to explicit migration policies, I analyzed economic, social, environmental, and political events that may have affected emigration from Latin American countries. By sifting through various databases and sources, I was able to compile a fairly comprehensive timeline of events and policies for each relevant country.

I also developed a list of policy categories, such as Domestic Policy, Crime and Violence, Natural Disasters, and Corruption, that can provide insight into the political and socio-economic climates of relevant regions of emigration.

With help from Katie Yoon, I then created subcategories such as Civil Unrest, Environment/Energy, Political Instability, Labor Issues, and Women's Rights.

Next, I gathered data on the frequency of policies within each category and subcategory using OpenRefine, a data-cleaning tool, and passed that data along to Katie for visualization purposes. It became clear that certain issues, such as economic pressures, environmental and energy-related issues, indigenous rights, and political instability, were especially important drivers of emigration. Erosion of the rule of law can be thought of as a slippery slope, leading to other policies which contribute to further declines in quality of life.

In the future, I will contribute to a chapter that Dr. Bridget Algee-Hewitt is writing on the effects of U.S. and Latin American policy on migration and the social conditions of migration and border deaths.

Representing "Push Factors" in Tableau

by Katie Yoon

This project gave me the opportunity to explore the "push factors" driving migration and the difficult circumstances faced by immigrants who attempt to cross the U.S. border. My primary task this summer involved using the broader categories of "push factors" to develop more specific subcategories, such as Indigenous Issues, Hydrological Hazards, and Environmental Degradation. This done, I used Tableau to create a pie chart representing the relative frequency of these categories and subcategories. The visualizations I created clearly show the pivotal role of domestic policies and elections in driving emigration: collectively, they make up over 46% of causal events, even when one includes other politically relevant categories such as civil unrest, corruption, and foreign affairs. This data supports the stance that countries should recognize the sheer range and diversity of "push factors" that can drive immigrants to their borders and adopt an approach that is more sensitive to various causes of immigration.

I also used OpenRefine, a data-cleaning tool, to collect and organize the GIS coordinates of locations along the U.S.-Mexico border where significant events, such as migrant deaths and apprehensions, have occurred. Additionally, I conducted a review of literature on the effects of the Trump administration's policies on migration in Latin America.

Moving forward, I will continue reviewing relevant papers, especially ones published in the aftermath of the COVID-19 pandemic, and investigating the combined impact of important "push factors" driving immigrants to undertake the journey across La Línea.

% Criminal Removals 2018

Criminal Removals 2018

El Salvador 2018
Criminal: 7,003

Deceased Border Crossers - Arizona
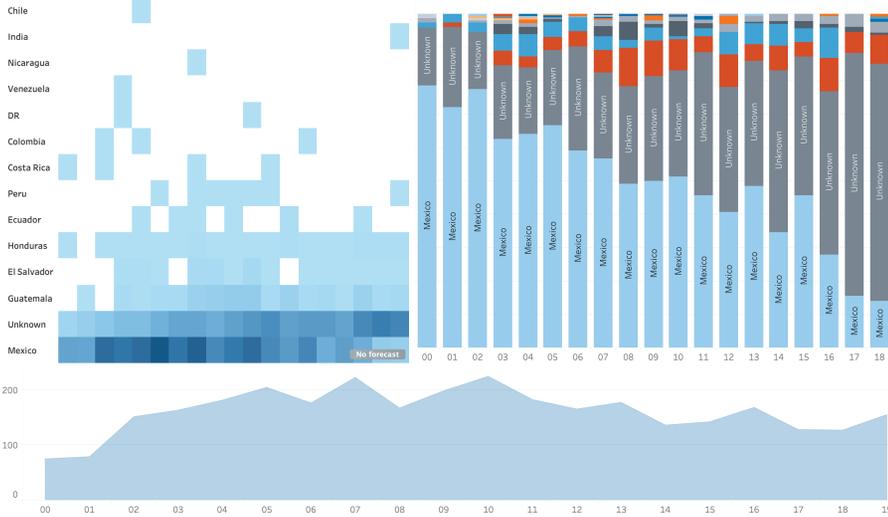
Stills from an interactive visualization depicting shifting rates of criminalization of immigration during US administrations (top) and from an interactive dashboard visualizing the deaths on the Arizona-Sonora border, compared to deaths on the greater Southwest Border (above).

Visualizing Immigration History

by Lily Taylor

My main contribution to the project this summer was a set of analytical dashboards that can be used to visualize data related to the U.S.-Mexico border. Although I designed the dashboards to be intuitive, border metrics can be confusing and sometimes incomplete, so I also wrote data and policy backgrounds to accompany each dashboard. These pieces also contributed to the project's literature review. Although the pairings of detailed policy background and data visualization can seem dense, they capture distinct aspects of border enforcement in a complex, readable manner.

Our dashboards, which are fully interactive and backed by as much public data as possible, are intended to add to context provided by news articles and white papers. They allow users to zoom in on events of the past 5 years, and to pan out to see centuries of immigration history; they can be used to characterize recent U.S. administrations' approaches to immigration enforcement and to speculate on some of the effects of specific policy decisions.

In the future, our project team hopes to collaborate with a storyteller to produce audio or video content that will make our analyses more widely accessible.
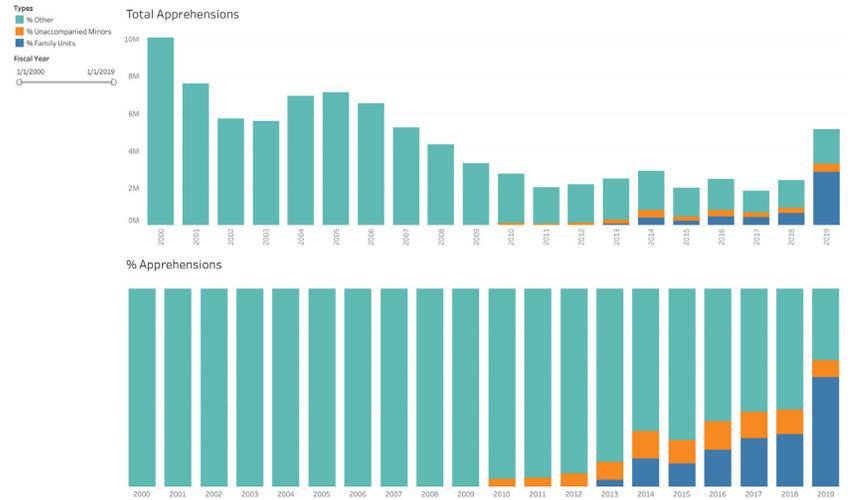
A still from an interactive dashboard visualizing apprehensions of families and unaccompanied minors by Customs and Border Protection.

Counter-Surveilling the State

by Bridget Algee-Hewitt

This study aims to investigate the current status and procedures of the U.S. Immigration and Customs Enforcement (ICE) administration upon undocumented communities, focusing on both detainee COVID-19 experiences and ICE raids across the U.S. We map the spread of COVID-19 in detention centers using visualization techniques, and compare the incidence rates in detention centers relative to their surrounding regions, flagging the overrepresentation of COVID in immigrant detention contexts. We also trace undocumented experiences of ICE raids, and quantify ICE patterns and procedures through interviews and electronic surveys, as well as through pre-existing data from the past twenty years.

Our data reveals hidden trends mapped in real-time on a digital platform. Using predictive modelling, we develop a mechanism to forecast future ICE raids, and design a crowd sourcing solution for future data collection. This study will provide a counter-narrative to mainstream media views, challenge explicit politically-sanctioned racist rhetoric, and expose latent opinions around undocumented immigrants. Though some literature exists on undocumented experiences and ICE raids, our study utilizes a novel interdisciplinary approach to understand ICE, educate target communities, and produce a resistance mechanism that works against the current structural political systems that seek to criminalize and dehumanize immigrants.

COVID Rates in ICE Detention Facilities

by Brooke Tran

This summer I was primarily involved in developing a mapping tool. This interactive tool is intended to help users visualize COVID rates in ICE detention facilities and compare them to the COVID rates of surrounding counties, in order to demonstrate the disproportionate rate of infection that takes place within these facilities. Using Tableau, I was able to produce visualizations of public COVID data that could be added easily to our website. Our goal for this tool is to increase public awareness of the unsafe and inhumane conditions in ICE detention centers, and to demonstrate how COVID disproportionately impacts undocumented immigrants, who are some of the most vulnerable members of our society. This project has allowed us to connect our immigration-related research questions to the current public health crisis and to create an educational tool that centers on particularly marginalized groups while we wait for approval to access restricted data on ICE raids throughout the U.S.

COVID-19 Cases in ICE Detention Facilities vs. US Population
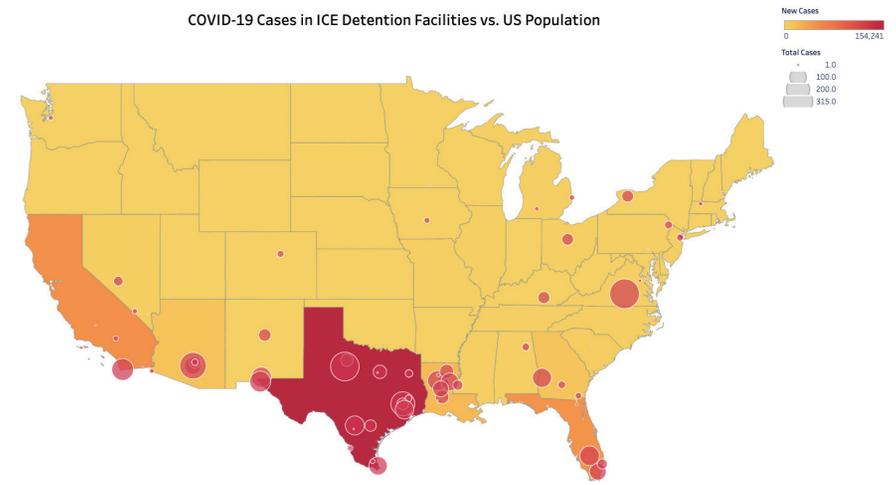
Ethnographic Surveys and the Rhetoric of President Trump's Tweets

by Miranda Liu

My work this summer was centered around ethnographic survey research and text mining. While there have been surveys distributed to undocumented immigrants with the aim of obtaining would-be census data, few have included an ethnographic component that gives equal weight to quantitative demographic data and qualitative responses. Thus, I created an ethnosurvey for distribution to undocumented communities, hoping to use responses to gain a better sense of the experience of being an undocumented person in the U.S. Another project I worked on involved text mining President Donald Trump's tweets since the date of his inauguration. I analyzed the sentiment and rhetoric of these tweets, focusing in particular on language around immigration and disease.

Trump's prolific use of Twitter is well-known and well-documented, and analyzing his tweets using text-mining methods is a way to quantitatively study his xenophobic, anti-immigrant rhetoric. First, we downloaded every tweet (excluding retweets), starting from the date of Trump's inauguration, from the site TrumpTwitterArchive.com. Next, we cleaned the tweets by converting all letters to lowercase and removing numbers, punctuation, whitespace, and stopwords — words, such as prepositions, that are

« Visualizations displaying the collocates for the identified key words "border," "mexico," "wall" (top), and "immigration/ immigrants" (bottom) in President Donald Trump's tweets, and the number of instances each collocate appears in the database.

commonly used but do not add significant meaning and are generally filtered out before text mining begins. Our goal was to explore the relationship in Trump's rhetoric between words related to immigration, especially Latin American immigration, and those related to COVID-19. The keywords we focused on were "immigration," "immigrants," "immigrant," "mexico," "mexican," "latinos," "hispanic," "hispanics," "virus," "coronavirus," "border," "wall," "disease," and "covid." In total, we collected 940 tweets containing one or more of these terms.

Then we derived the collocates — words that appear together more often than would be expected by pure chance — that appeared with these terms in Trump's rhetoric. Some of these terms had no distinct collocates, but most did: for example, we found that the word most associated with immigration or immigrants is "illegal." Other words that correlate with immigration/immigrants in Trump's tweets include "crime," "stop," and "problem." Collocates for the word "border" include "illegal," "tough," "drugs," and "ICE." Similar trends appear when we explore the rhetoric around terms like "wall," and even "Mexico"; collocates for the former are "illegal," "tough," and "stop," while collocates for the latter are "stop" and "illegal."

We also performed sentiment analysis on Trump's tweets. Interestingly, the overall sentiment of his tweets was slightly positive. However, the sentiment of tweets containing target words was lower, with a similar negative sentiment rating but a lower positive sentiment rating.

Finally, we generated lists of the most common words across all tweets and across tweets containing target words. Across tweets containing target words, "border," "wall," "security," and "strong" are the most common words. Across all tweets, the words "fake," "democrats," "many," and "country" are the most common.

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Urban Ecology of the Pandemic

Project Description

by Deborah Gordon, Professor of Biology, and Erik Steiner, Co-director of the Spatial History Project

Researchers seeking to understand the impact of human activities on ecological processes can either compare two different places or observe how a particular place changes over time. Stay-at-home orders due to COVID-19 offered a unique opportunity to study these effects. Our team is examining how the "anthropause" –the abrupt disruption of human mobility due to stay-at-home orders - influenced the behavior and range of wild animals in urban spaces.

Using data from the citizen science platform iNaturalist, along with visualization and statistical tools, we are examining wild animal observations in 2019 and 2020 before, during, and after stay-at-home orders were in effect. We are considering how the number of iNaturalist observers, the number of sightings of several animal groups (e.g., birds and mammals), and the spatial distribution of those sightings changed in San Francisco, Austin, and Boston. Our findings indicate that there has been an observable increase in human-

wildlife encounters, especially in higher density and wildland interface areas. We are also examining the social dimensions of this phenomenon to understand how changes in observer behavior may affect the frequency and distribution of citizen science data contributions.

Examining the "Anthropause"

by Kimmy Chang and Karen Ge

To compile data for this project, we made iNaturalist queries and wrote scripts to scrape information about temperature, precipitation, and rural/urban identification. We logged our findings in spreadsheets that consisted of three main categories: wildlife sightings sorted by human population density for each location, wildlife sightings sorted by taxa and human population density for each location, and wildlife sightings at a species-specific level and human population density for each location. We used Jupyter notebooks to scrape and clean the data we queried from iNaturalist.

Sources, Data, and Preliminary Results

In the first phase of our research, we found that the number of observations per user per day increased significantly in San Francisco during the stay-at-home period, and that there was a significant increase in such sightings in Boston and Austin during the reopening period.

In order to understand these trends, we had to consider how observer


```python
In [4]:   obs_df = pd.read_excel("sf_2019_p1.csv")
          url_list = obs_df['lat_long url'].tolist()  # list of all urls

In [5]:   rural_urban = []
          for i in range(len(url_list)):
              if (i % 1000 == 0): print(i)
              curr_url = url_list[i]
              try:
                  page = requests.get(curr_url)
              except requests.exceptions.RequestException as e:
                  rural_urban.append("NEED TO FIX")
                  continue
              soup = BeautifulSoup(page.content, 'html.parser')
              results = soup.find('td', class_='amirural-answer')
```
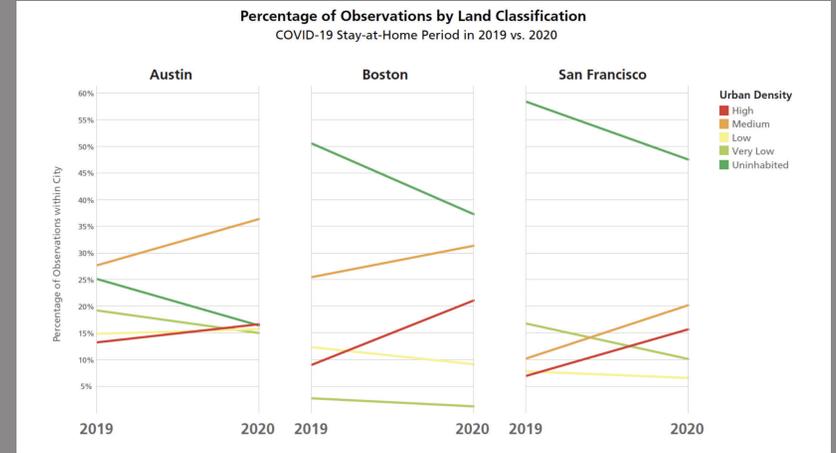
⤊ An excerpt of web scraping script for rural/urban classification.
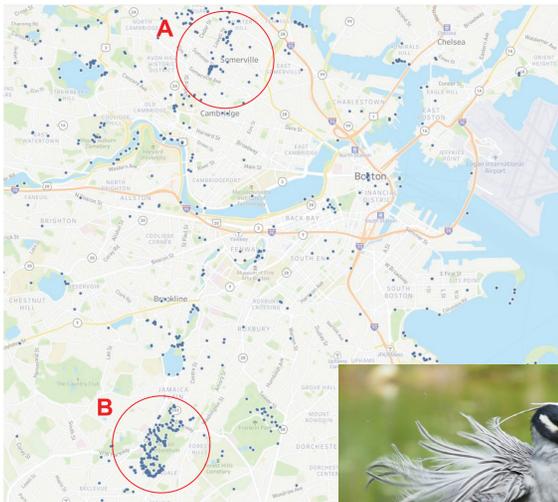
BOSTON
Birds
2020 Stay-at-home period

A. Somerville
High density area with significant increase in observations

B. Arnold Arboretum
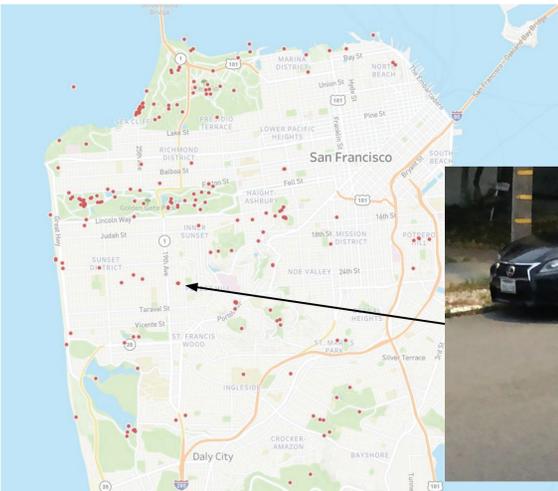Uninhabited area with significant increase in observations

A graph showing changes in density between 2019 and 2020, excluding observations of birds.

SAN FRANCISCO
Mammals
2020 Stay-at-home period

May 14, 2020
COYOTE
Canis latrans

numbers might change the results. For example, perhaps people were more likely to make observations when they were isolated at home, or more likely to visit natural areas. To take this into account, we analysed the data to test for significant differences between 2019 and 2020 distributions of observations over five land-classification categories based on density: uninhabited, very low, low, medium, and high.

We found that in Austin during the stay-at-home period, there were more observations in natural areas near cities. In Boston and San Francisco, there were more observations in urban areas during the stay-at-home period.

In addition to the trends in the number of observations, we found significant trends in the numbers of animals seen, indicating that birds, mammals and amphibians all changed their behavior in response to the change in human activity.

We gave a talk on our preliminary results at the virtual annual meeting of the Animal Behavior Society in July, and we are currently preparing a manuscript for publication.

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Updates from other ongoing CESTA projects

Many additional active CESTA projects have benefitted from undergraduates' contributions in past summers. For example, *Global Medieval Sourcebook* (Professor Kathryn Starkey, German), *Oral History Text Analysis Project* (Professor Estelle Freedman, History), and *Kindred London* (Professor Nicholas Jenkins, English), among others, have been making great progress. Here we highlight the summer work of two of these other ongoing CESTA projects.

Corpus Synodalium

Rowan Dorin and Clara Romani

During summer 2020, Clara Romani ('20) and Professor Rowan Dorin (History) worked to put the finishing touches on the *Digital Atlas of Medieval Dioceses and Ecclesiastical Provinces* (1200-1500). The atlas depicts the boundaries of more than 800 Catholic dioceses and ecclesiastical jurisdictions from Greenland to Granada, showcasing their shifting configurations over the course of the later Middle Ages. Clara began working on this project in her summer as a rising sophomore and completed it just as she was about to head off to France to study on a Fulbright scholarship. The two co-authors are very grateful to all of the Stanford student contributors (especially Claire Womack '20 and Lauren Schlansky '19); the amazing staff at CESTA, the Stanford Geospatial Center, and the Stanford University Libraries; and the colleagues across North America and Europe who shared sources and expertise.

An image from the *Digital Atlas of Medieval Dioceses and Ecclesiastical Provinces* (1200-1500) showing the boundaries of Catholic dioceses in the Middle Ages.

Mapping Ottoman Epirus

Ali Yaycioglu, Antonis Hadjikyriacou, Fatma Öncel, Selma Koroglu, and Erik Steiner

The team behind Mapping Ottoman Epirus has recently launched their new website, featuring exciting visuals, archives, and interactive maps that bring the regions of the Ottoman Empire to life. Mapping Ottoman Epirus seeks to better understand how the Ottoman Empire operated through big data, spatial and network analysis, visualization, and other digital methods. Their focus is Epirus, a region in modern-day Western Greece and Southern Albania, during the late 18th and early 19th centuries. This particular area offers exciting insight into the Ottoman Empire because it was a strategic junction on the Adriatic coasts, connecting Europe and the Ottoman lands. Their new website provides visualizations of infrastructural, relational, and eventual spectrums, and hopes to transform the use of digital historical inquiry by revealing how regional orders came into being, operated, intermingled with other orders (local, imperial and global), and finally collapsed.

A network map showing settlements in the Western Anatolia territory of the Ottoman Empire and the time it took to travel between them.
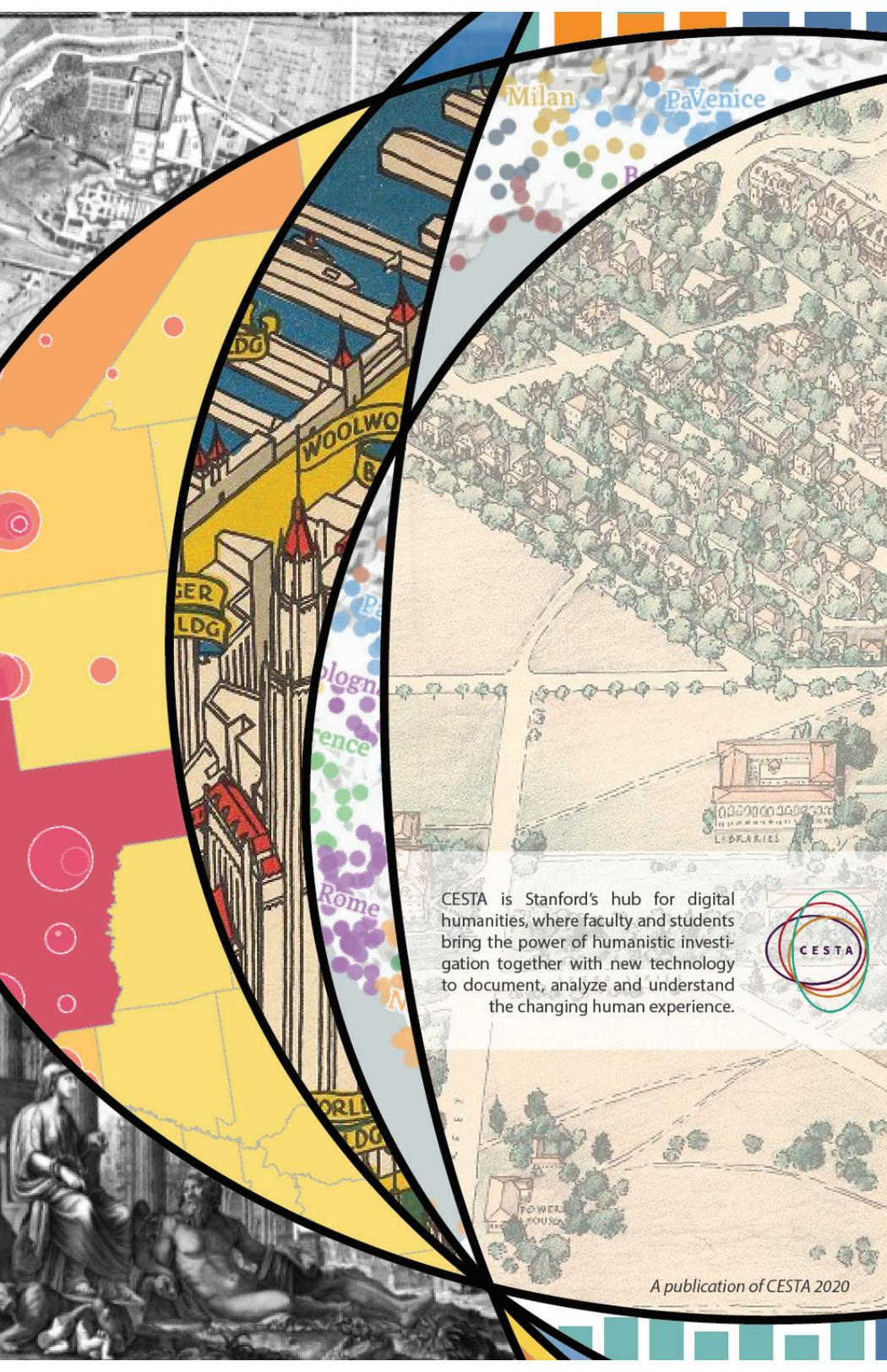
CESTA is Stanford's hub for digital humanities, where faculty and students bring the power of humanistic investigation together with new technology to document, analyze and understand the changing human experience.

CESTA