

Contextualizing Performers in Circus Route Books: Linked Data Entities and the Open Data Environment

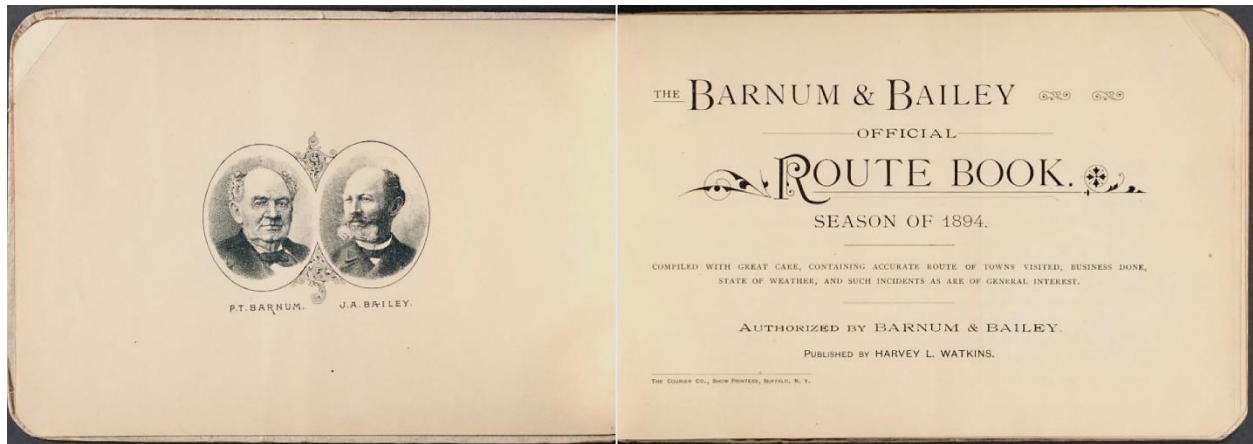
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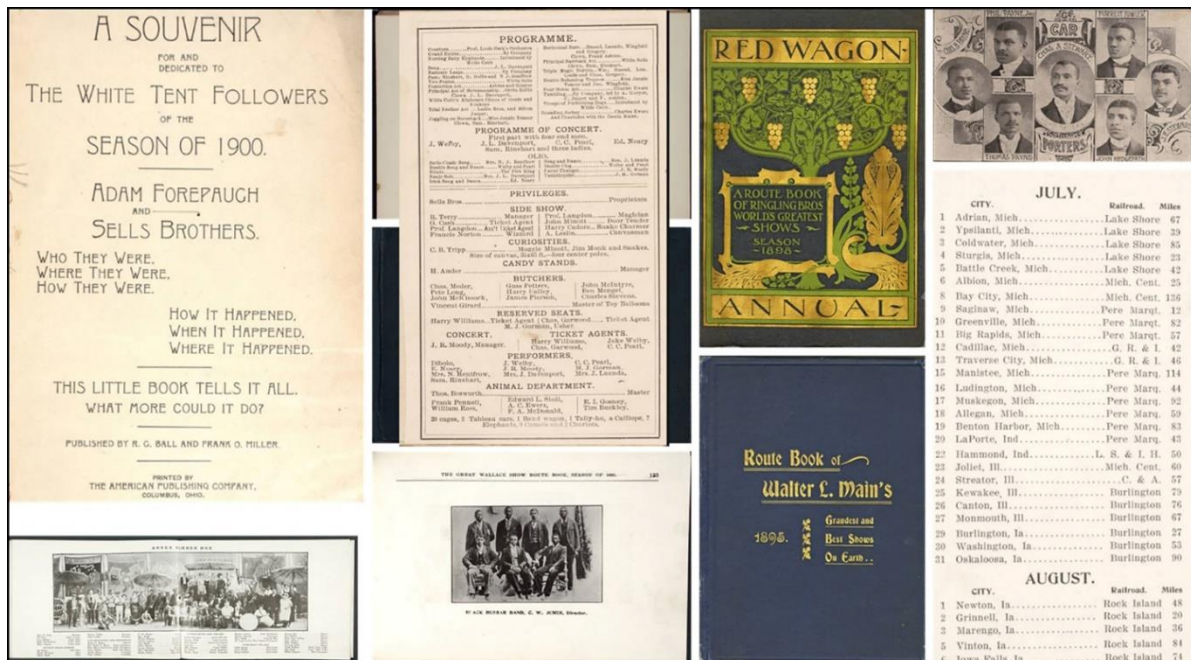
Collage of performers from diverse populations found in circus route books from the Circus Route Books digital collection at Illinois State University, Milner Library

In 2017 Milner Library at Illinois State University received a grant from the Digitizing Hidden Collections program, a national grant competition administered by the Council on Library & Information Resources (CLIR), for a collaborative digitization project of circus route books held by Circus World, Illinois State University, and the John and Mable Ringling Museum of Art. The three institutions house the largest circus collections in the United States and collectively they shared their unique route books to build a digital collection for the [Step Right Up: Digitizing Over 100 Years of Circus Route Books](#) project.



Title pages for the 1894 season Barnum & Bailey Circus route book from the Circus Route Books digital collection at Illinois State University, Milner Library

Circus Route Books were published at the end of the show's season. Route books contain various information including personnel by department and performance acts, the itinerary of cities and towns; and may also include photographs and statistics such as miles traveled, weather reports, ticket sales, and daily events. The Circus Route Books collection is significant not only because it provides detailed insights into circus life, but the books also highlight the circus industry's role in American history and society. The American circus played a pivotal part in shaping American culture. Route books are rich resources. They have a broad appeal that extends beyond individual scholars interested in the circus. This disciplinary interest includes American studies, history and interdisciplinary studies of sociology, anthropology, economics and labor, geography, race and cultural studies, performing arts, and gender studies.



Collage with images, itinerary, program acts and covers found in circus route books from the Circus Route Books digital collection at Illinois State University, Milner Library

The following research discusses a 'linked data' and 'collections as data' approach employed with digital tools and open data in the digital humanities exhibit: [Agency through Otherness: Portraits of Performers in Circus Route Books, 1875-1925](#). This endeavor represents the final segment of the four-year grant project.

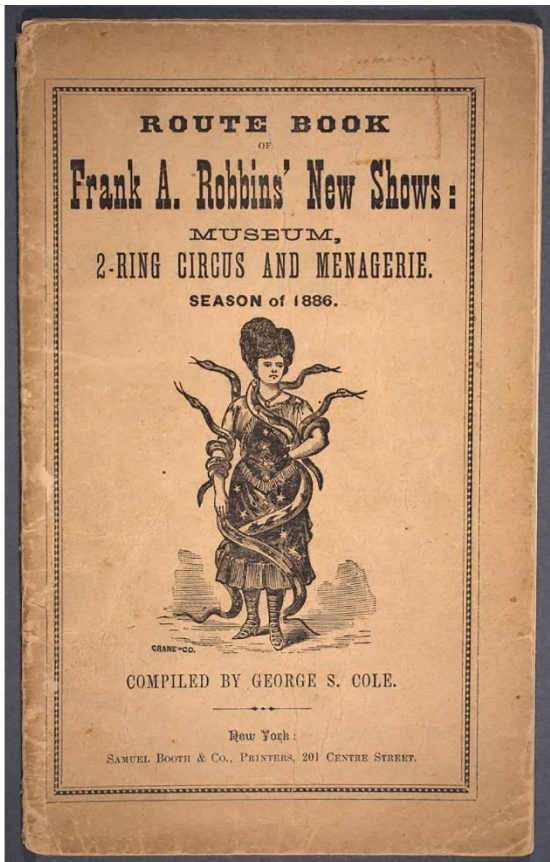
Project Background - Step Right Up: Digitizing Over 100 Years of Circus Route Books

In the first three years, the project team worked on the detailed inventory, digitization, construction of original descriptive metadata for the combined collection of 306 route books, and upload of objects in the digital collection platform CONTENTdm. Data and creation of controlled vocabularies included names of performers, circus acts, circus names and owners, advertisers, and regional stops. The library launched the digital collection in 2020.

The collection is more reachable through this digital surrogate, opening the opportunity to view these books globally. Formerly, the books were only available for physical viewing separately at the three institutions. Milner Library's digital collections, including the Circus Route Books, are part of the Digital Public Library of America (DPLA) through the regional Illinois Digital Heritage hub. They harvest data via OAI (Open Archive Initiative) and host Milner's collections on their site. As a member, others, both within and outside the network can export datasets from DPLA collections via APIs.



First Annual Route Book of the Great William Sells and James H. Gray United Shows Season 1900 from the Circus Route Books digital collection at Illinois State University, Milner Library



Route Book of Frank A. Robbins' New Shows: Museum, 2-Ring Circus and Menagerie Season of 1886 from the Circus Route Books digital collection at Illinois State University, Milner Library

Literature Review

For decades, galleries, libraries, archives, and museums (GLAM) worldwide have invested in the digitization of their cultural heritage holdings to meet the public demands for direct access to their collections and to reach a larger and diverse audience. Digital collections, however, are no longer viewed merely as the surrogates of the physical collections. In recent years there has been an increased interest in “collections as data” from institutions. “A collections as data paradigm seeks to foster an expanded set of research, pedagogical, and artistic potential predicated on the computational use of cultural heritage collections.” (Padilla, 2018). It looks beyond the traditional use of digital collections as proxies for the physical and providing access of inherent data to enable digital humanities research. To support this new outlook, both the Institute of Museum and Library Services and the Andrew W. Mellon Foundation have funded recent ‘Always Already Computational’ projects that created a framework and guide of standards and best practices for transforming digital collections to data for computational use and innovative research methods. (Wittmann et al., 2019, pp. 49-50)

Following this guidance in their pilot for a collections as data strategy, the University of Utah J. Willard Marriott Library converted five library collections into datasets and made the data available through a public GitHub repository. Examples of datasets produced were geographic coordinates, genealogical

information of dates and place names from newspaper obituaries, and oral history texts. They tested the data with various digital humanities methods for visualization and computational exploration including geographic information system (GIS) mapping, text mining, and topic modeling. (Wittmann et al., 2019, p. 50)

The growing increase in digital cultural heritage data enables increased levels of access and new strategies of analysis and exploration. This includes innovative interactive applications (Windhauer et al. , 2019, p. 2312), visualization aids, discovery, analysis, and communication about collections which lead users to findings of diverse perspectives. These unexpected discoveries may inspire new ways to examine primary sources and historical evidence (Glowacka-Musial, 2021, p. 6). Datasets of cultural heritage collections are rich and often contain varied metadata related with the many different object types such as images, texts, artifacts, music, and films. They are also connected to historical contextual information and knowledge. Linked data can help with this contextualization in visualizing and interpreting collections in broader cultural and societal spaces. (Windhauer et al. , 2019, p. 2312) “Linked Data and Semantic Web technologies are becoming increasingly important in creating, publishing, and analyzing cultural heritage data in digital humanities.”(Bikakis et al. 2021, p. 166)



Wikidata offers a low-barrier, high-result method for creating and using linked data in libraries and cultural heritage institutions. It makes data not only visible but reusable as linked data. Ashleigh Hawkins argues for the increased collaboration with archives and digital humanities, engagement with linked data and the incorporation of artificial intelligence and low-barrier tools like Wikidata into production workflows to expand access and use of digital archives (Hawkins, 2022, p. 320).

There has been growing interest and engagement from libraries and other cultural heritage organizations in Wikidata and Wikipedia. Recent reports published by the International Federation of Library Associations and Institutions (IFLA), the Program for Cooperative Cataloguing (PCC), and the Association of Research Libraries (ARL) advocate for Wikidata integration to advance discovery (International Federation of Library Associations and Institutions, 2016; Program for Cooperative Cataloguing, 2018-2021, Association of Research Libraries 2019). In September 2020, PCC launched a Wikidata pilot project and over seventy academic and cultural institutions globally participated in the pilot to increase the movement toward identity management (Wikidata, 2022).

Wikidata, Collections as Data, Open Data, Digital Storytelling

In the last year of the project, the main objective was to make data readily open and reusable to aid in optimal discoverability and create data relationships with the collection. To accomplish this, there were three goals:

1. Invest time in the disambiguation and research of circus performer names, create Library of Congress Name Authority Records (NAR) and Wikidata entries for circus and performer names to add them to the linked data information landscape; specifically focused on performers that were the most identified in the collection and from historically excluded and underrepresented groups.
2. Research and record geographic coordinates of individual circus routes from the books.
3. Based on the collection data generated, create data visualizations and interactive narrative experiences with digital tools.

The culmination of these efforts resulted in the digital humanities project, [Agency through Otherness: Portraits of Performers in Circus Route Books 1875-1925](#). The exhibit features essays, images, interactive timelines, and map data visualizations of circus routes overlaid with data of Native Lands, historical railroads, and population growth in the United States.

For the first goal, time investment in the disambiguation and research of highlighted circus performers in the collection leveraged identity management principles with Library of Congress Name Authority Records and Wikidata to create linked open data. The creation of identifiers with name authority records and Wikidata entries for these performers aids in higher discoverability to information on these persons and the collection (Image 1). The team also participated in the PCC-Wikidata Pilot. The work in the creation of links between these data stores and the collection foster future fully actionable linked open data. An example of linked data in action is through use of SPARQL queries against the Wikidata items the project team created. Information can be pulled out in a text list, or as a data visualization such as a timeline (Image 2).

The image shows two digital records for the circus performer Tetu Robinson. On the left is a Library of Congress Name Authority Record (NAR) with the following entries:

- 010 no2021000258
- 040 INS-SF #b eng #e rda #c INS-SF
- 024 7 Q104247359 #2 wikidata #1 <https://www.wikidata.org/entity/Q104247359>
- 100 1 Robinson, Tetu
- 372 Circus #2 lcsb
- 374 Circus performers #2 lcsb
- 374 Acrobat #2 lcsb
- 374 Aerialist #2 lcsb
- 374 Horsemen and horsewomen #2 lcsb
- 377 eng
- 400 1 Harriman, Tetu
- 400 1 Harriman, Tetu Robinson
- 670 Circus route books digital collection, WWW site, viewed December 18, 2020: #b Sou Robinson, equilibrist) #u <https://digital.library.illinoisstate.edu/digital/collection/j1599>
- 670 Circus route books digital collection, WWW site, viewed December 18, 2020: #b John Barry, Equestrian Director, Tetu Harriman) #u <https://digital.library.illinoisstate.edu/di>
- 670 Taber, Frances Wentz. A carnival & circus history 1902-1942 : focused upon the lives Robinson Harriman circa 1896-after 1936, JeromeThomas Harriman 1897-1942, 20

On the right is the Wikidata entry for Tetu Robinson (Q104247359). It includes a photograph of Tetu Robinson performing a balancing act on a horse. The entry lists various statements:

- instance of: human (0 references)
- family name: Robinson (0 references)
- languages spoken, written or signed: English (0 references)
- occupation: circus performer (1 reference), acrobat (1 reference)

Image 1. Library of Congress name authority record created on the left for the aerialist and equestrian Tetu Robinson and a Wikidata entry on the right.

SPARQL Query for Wikidata Items

Enter a SPARQL query: Hide / Show Query EXAMPLES CLEAR ALL

```
SELECT ?person ?personLabel ?birthDate ?deathDate ?image ?occupationLabel
WHERE {
  ?person wdt:P106 gdt:Q17307272.
  ?person wdt:P101 gdt:Q47928.
  OPTIONAL { ?person wdt:P169 ?birthDate }
  OPTIONAL { ?person wdt:P170 ?deathDate }
  OPTIONAL { ?person wdt:P18 ?image }

  SERVICE wdt:page-label {
    ?personLabel wdt:language "en".
  }
}
```

Run on the Wikidata Query Service

Q2217573	Fedor Jettshew	1 January 1868	1 February 1904	commons:Fedor Jettshew portrait.jpg
Q3496876	Zhan Shizhai	1 January 1841	5 November 1893	commons:Zhan Shizhai.jpg
Q5075335	Charles B. Tripp	6 July 1855	26 January 1930	commons:Charles B. Tripp autograph, 1907.jpg
Q5380182	Eli Bowen	14 October 1844	4 May 1924	commons:Eli Bowen by Atkinson, 1867.jpg
Q5072559	Iron Tail	1 January 1850	29 May 1916	commons:Chief Iron Tail.jpg
Q7440647	Sealo	24 November 1901	10 December 1980	
Q1601812	Fay Alexander	19 October 1924	16 July 2000	
Q16016270	Ely Annie Schneider	23 July 1914	8 September 2004	commons:Trey Earles 1925.JPG
Q18091493	Grace Doll	12 March 1899	8 November 1970	
Q1520696	Ephraim Thompson	26 October 1859	17 April 1909	commons:M. Eph. Thompson the American chee trainer.jpg
Q2849654	Rosea Melitta Richter	14 April 1903	8 December 1937	commons:Zazel (bell crop).jpg
Q48719570	Charlie Bell	4 August 1896	26 September 1964	commons:Charlie Bell with dog.jpg

Image 2. Linked data in action –use of SPARQL queries against the Wikidata items created, information can be pulled out in a text list, or in a visualization tool

Layering metadata practice with a consideration to contributing to Wikidata involves transitioning from the description of objects to the creation of knowledge and imagining metadata for other uses outside of collections. This leverages the impact of that data. It opens the data or knowledge to interdisciplinary queries, complex analysis, and exploration for use by anyone anywhere, not just libraries.

In the second goal, using GeoNames, a multilingual geographical database, the project team researched and recorded geographic coordinates for city/town stops with dates for the collection’s route books. This data was in turn parsed and reconciled using OpenRefine for use in Esri’s ArcGIS to create map data visualizations which the team made shareable. The raw data and the layers are downloadable to reuse on ArcGIS (Image 3). The raw data has also been deposited into Harvard University’s Dataverse repository and the Illinois State University’s institutional repository, ISU ReD, for others to discover. Recording and making this geographic information openly available enables researchers to reuse and build on the collection’s data for new interpretations and other imaginative possibilities.

ISU ReD: Research and eData

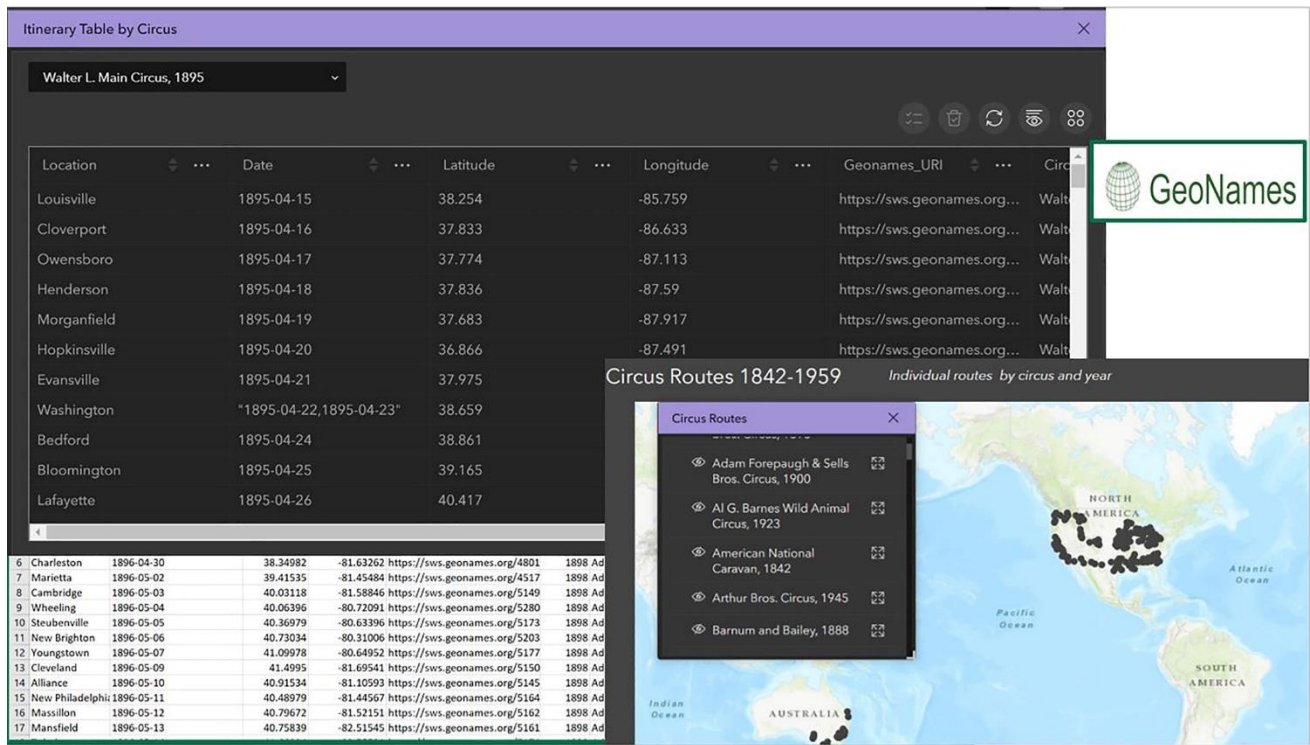


Image 3. Recorded GeoNames geographic coordinates and names of city/town stops with dates of circus routes exported into ArcGIS for map visualization and itinerary table



For the third goal, the project team created two map visualizations highlighting circus routes overlaid with external historical railroad, population growth, and Native Lands data. Historical railroads data map layers were shared in ArcGIS with permission by Jeremy Attack at Vanderbilt University, and from the Esri Canada Education Team. The U.S. Census Bureau population data from the 1800s to 1930s as historic county boundaries map layers were produced by the Minnesota Population Center as part of the

National Historical Geographic Information System (NHGIS) project. These county boundaries shapefiles were then joined with the total population data by the Harvard University Center for Geographic Analysis. The team retrieved these shapefiles from Stanford University's Earthworks open catalog, where one can find and download GIS data and maps. Native American Lands data map layers was gathered by the US Geological Survey (USGS) and the US National Forest Survey. These were shared in ArcGIS with permission from Claudio Saunt at the University of Georgia. The reservations and present day Native reclaimed land data map layer was made available in ArcGIS by the USGS National Gap Analysis Program. The team incorporated the map visualizations alongside text, images, and other media to create an exhibit with narrative and interactive experiences using digital tools.

Agency Through Otherness: Portraits of Circus Performers, 1875-1925

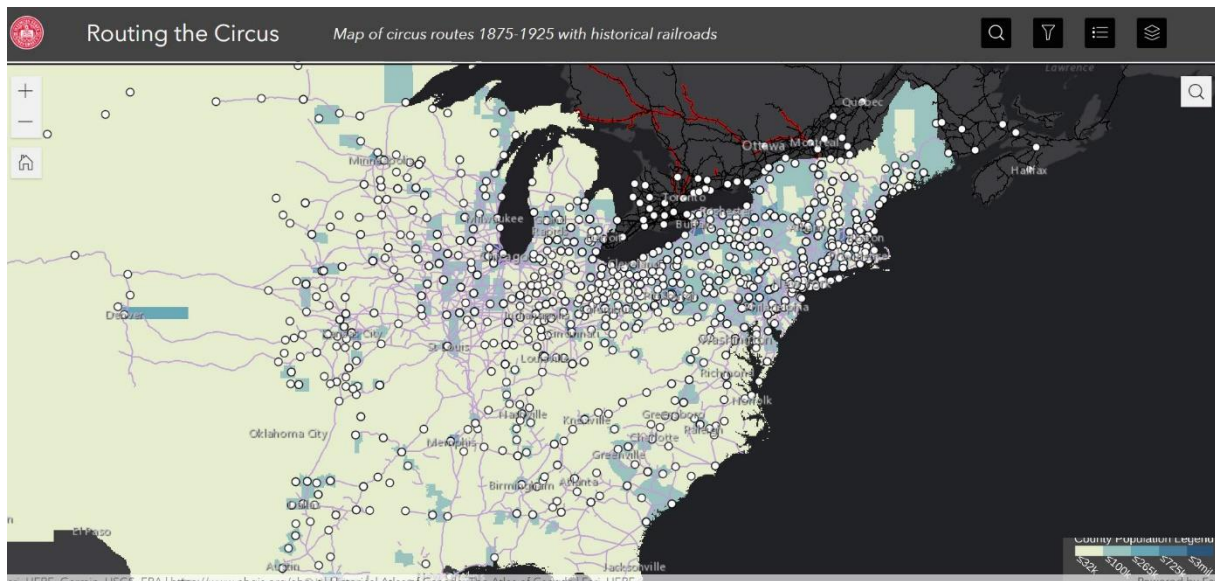
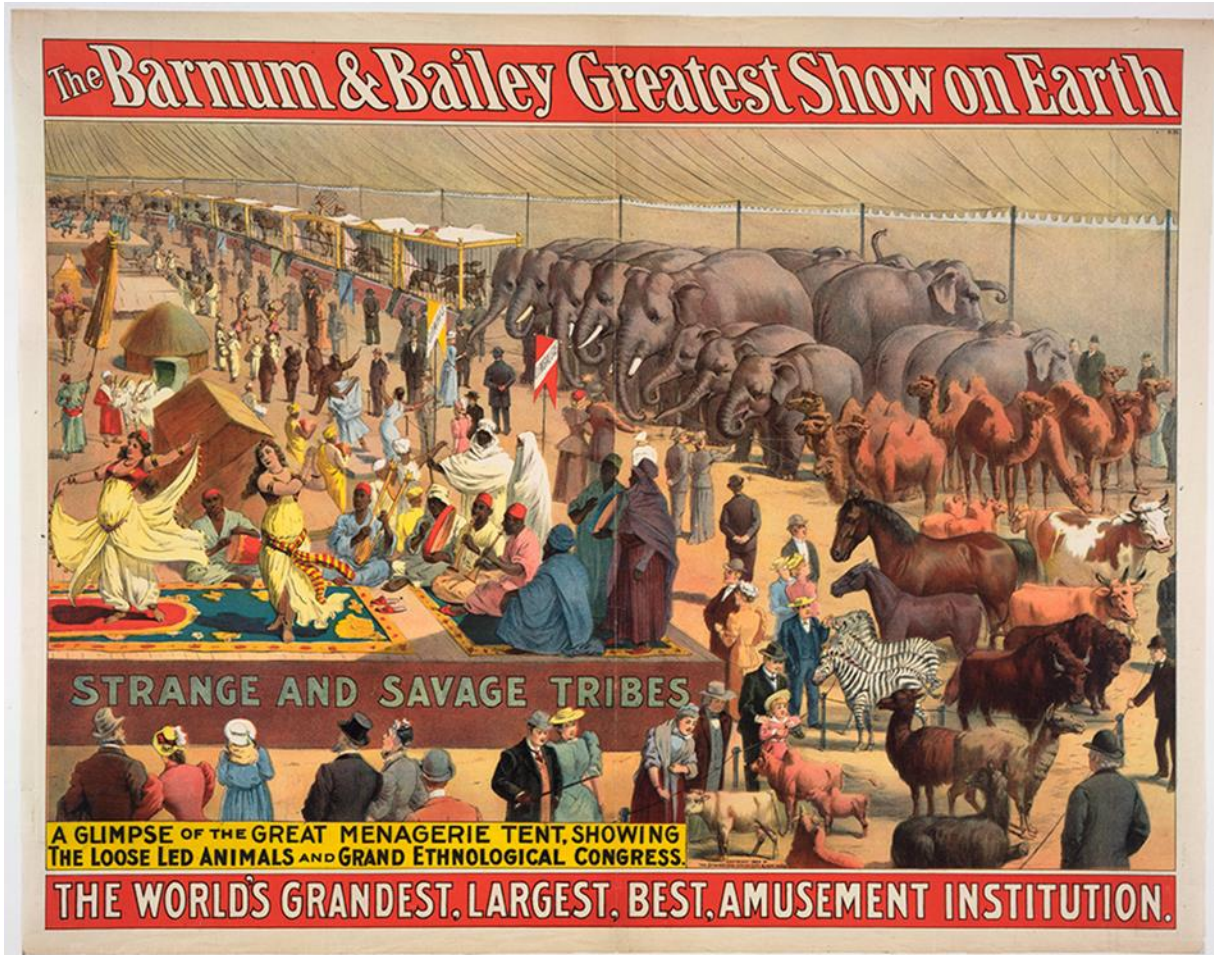


Image 4. "Routing the Circus 1875-1925" map, circus route stops overlaid with historical railroad lines and county population census data

The "[Routing the Circus 1875-1925](#)" map featured in the *Agency Through Otherness: Portraits of Circus Performers, 1875-1925* exhibit provides important historical context for the circus in the country. It shows the circus' development with the advent of the railroad alongside population growth and national territorial expansion (Image 4). It is in this historical context that the exhibit explores narratives about circus performers with interactive experiences. In America, the circus became a form of mass cultural entertainment with little competition due to national expansion and the use of railroads to travel huge distances. The reach and appeal of the circus is significant and can be traced partially through the route books that include ticket sales revenue on the cities where the circus stopped.



Barnum & Bailey greatest show on Earth: Strange and savage tribes: A glimpse of the great menagerie tent, showing the loose led animals and grand ethnological congress, 1894. Source: Huntington Digital Library

In the formative period from 1875-1925, the notion of Western imperialism, colonialization, and expansion prevailed. This is well evident in numerous circus acts. These presented the otherness, exoticism, and racist views of people from non-Western cultures as entertainment with spectacles, ethnological congresses, human zoos, curiosities, and side shows. Through performance this became the dominant narrative circuses helped to spread, reinforcing colonialist notions of power and racist hierarchy. The map of the circus-stops at numerous cities and towns alongside population data illustrate the proliferation of these beliefs to the masses. The circus captures a fundamental paradox of racism and prejudice in the United States: otherness is valuable only when it is consumable.

On analysis of the metadata generated for the digital collection, performers from misrepresented and underrepresented populations contributed largely to the circus. From the 306 books in the collection, under the category for circus acts - 85% feature sideshow acts and 80% human curiosities acts. 69% of these books are in the exhibit's fifty-year time span of 1875-1925. Displaying and commercially exploiting human difference was business.

In reversing this narrative constructed by the circus, the exhibit counters against this space the circus presented. The individual accounts examine the possibilities of independent, self-determining choices,

and the performer's agency in a societal structure built on oppression and exploitation. Exhibit chapters include specific examples of disparities in race and gender that undoubtedly affected these individuals.

In Mariah Wahl's chapter "[Native Performance and Identity in The Wild West Show](#)" route book data and the data of Native lands (both ceded and unceded) are combined in ArcGIS. This creates a map designed to contrast the route of the Buffalo Bill Wild West Show and the unlawful seizure of Native lands throughout the 19th and 20th century (Image 5 and 6). Routes identified in the books traversed and disrupted the Native land of countless tribes across the United States. The routes are illustrated alongside the genocide and forced relocation of Native communities, to use the circus routes history to underscore these atrocities. The map provides important context for Native performers in the colonial environment. These performers traveled and performed with the Wild West Show even as their own lands were reduced and seized by the American government. The integration of this interpretative map visualization alongside narrative text, images and audio was conceivable with the Scalar publishing platform.

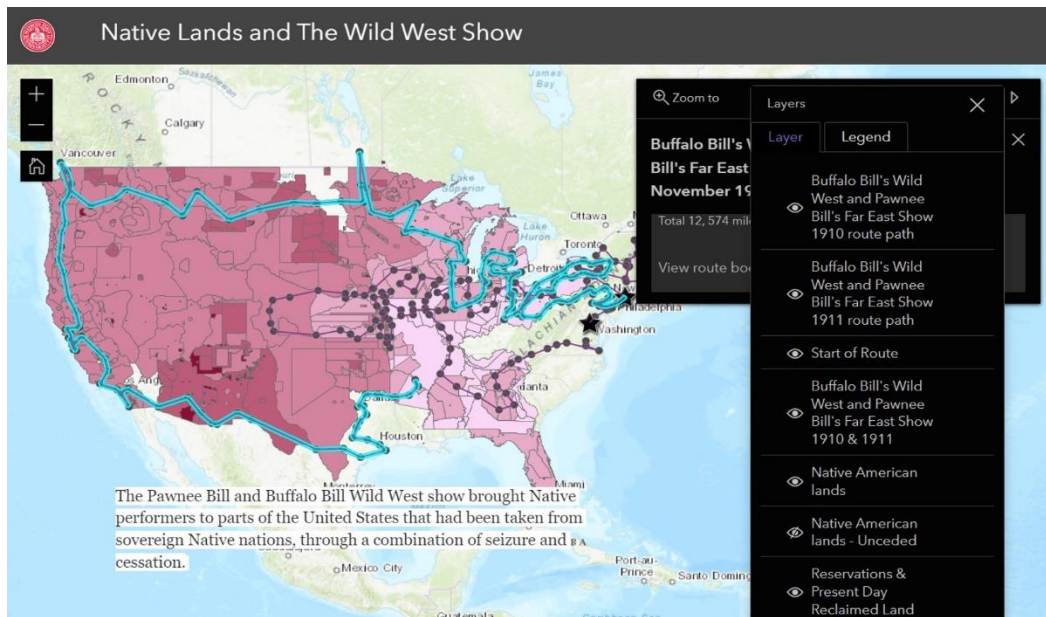


Image 5. "Native Lands and the Wild West Show" map, Buffalo Bill's Wild West and Pawnee Bill's Far East Show 1910 and 1911 route paths overlaid with Native American lands ceded and unceded



Image 6. "Native Lands and the Wild West Show" map, Buffalo Bill's Wild West and Pawnee Bill's Far East Show 1910 and 1911 route paths overlaid with Native American Reservations and present day reclaimed land

Digital Humanities Tools

The project team chose the Scalar platform to host the exhibit. Scalar is a free open source publishing platform designed for authors to create digital scholarship online and offers collaborative authoring. It places a strong emphasis on multimedia publication which allows for multiple images, video and audio to be published with accompanying text. Scalar is a project of the Alliance of Networking Visual Culture (ANVC) that was released in 2013 with the support of the Andrew W. Mellon Foundation and the National Endowment for the Humanities. It is hosted by University of Southern California with the option to host on an internal server. Due to limited resources, the exhibit is hosted externally. While this version is limited on customization, it does allow third party plugins. These come from a variety of platforms, enabling users to assemble media from multiple sources alongside writing in a structured essay, exhibition-like content, or book length works with a variety of layout options and minimal technical experience required. Scalar has the capability for nested, recursive, and non-linear formats. It supports collaborative authoring and editing and encourages improvisation with the data model. All these features were advantageous for this multiauthor exhibit. Moreover, the team found it easy to use and to build on which is important for the project's longevity.



Scalar

Adored and Mocked: Japonisme in American Culture

After treaties of the 19th century ended Japanese isolation, a fascination began in all things Japanese in both North America and Europe. The opening of the ports fostered an active market in screens, fans, vases, lacquerware and other Japanese goods. Few Americans had a clear understanding of Japanese culture but as Japonisme began to draw popular attention, European and Americans alike perceived Japan through the lens of Japonisme and Japonisme.



DESCRIPTION DETAILS SYNOPSIS SOURCE URL
Painting by a Japanese artist, likely a member of the Kanō school, depicting a bird perched on a branch with red blossoms. The painting is a traditional Japanese ink wash painting (suiboku-ga).

Everyone was going to the famous Paris Exposition-1, too, was going to the Paris Exposition. It's more than individuals, who were not going to Europe shortly, I have no deeper remembrance of it now.
—Mark Twain, 1866

The Exposition Universelle in 1867 was a showcase for international progress and attracted over ten million people from the world from royalty to common citizens. Amateurs and jugglers also traveled from Japan to perform for the Exposition's crowds. Coinciding with the beginnings of Japonisme, Japanese artists and performers introduced foreignness to the Western audience and brought a new spectacle diversity to the entertainment industry.



Japanese artist and performer, likely a member of the Kanō school, depicting a group of people. The painting is a traditional Japanese ink wash painting (suiboku-ga).

Japonisme, a term coined by the French art critic and historian Jules Poppo, describes the influence of Japanese art and culture on Western art and culture. It was a movement that began in the mid-19th century and continued into the early 20th century. Japonisme was a form of cultural appropriation that was both adored and mocked. It was a form of cultural appropriation that was both adored and mocked. It was a form of cultural appropriation that was both adored and mocked.



Harper's Weekly, 1867, depicting a person riding a horse. The illustration is a woodcut print from a newspaper article.

Thomas Dilworth (1867) was an actor initially known as Little Tommy in minstrel shows, but with the popularity of Japonisme, changed the name to Japanese Tommy. He was reported to be of Native American and African American ancestry. His name reformed as Terachi "Tommy" Chajiro Nishiki, an adopted living interpreter for the Japanese diplomatic embassy, who was frequently reported in the newspapers. Japanese Tommy presented in acts such as the "Japanese Barber" with algebraic humor. Dilworth performed with white minstrel troupes and was one of the only non-African Americans seen to do so before the Civil War.



Thomas Dilworth, Japanese Tommy. The photograph is a black and white portrait of a man in a suit.

This cultural jargon for Japan, novelty of Japanese artifacts and Japonisme could not equate to acceptance of Japanese persons in America. For the Chinese, they also endured anti-Asian discrimination and violence. The Japanese were regularly referred to as yellow-skinned, copper-colored, sooty, ugly, wily, and small, and the children as "little monkeys." If referred to positively, it was often with a condescending tone of white humor. Japonisme reflected their readers' fear of and disdain for the more aspects of their culture, including fashions, fashions, and music.



An account in the New York Times, May 14, 1867, depicting a person in a kimono. The illustration is a woodcut print from a newspaper article.

On the whole, it can't be said to be a big thing. Setting aside the hair-ker business, and the color and the hair and the grease and the prevailing notions in regard to clothing, there are insupportable objections connected with their ideas of privacy—brother, sister, another man and wife, a third man and two boys, all sleeping in a little box for a room—then sister in front, their habits of squaring, their infrequent music, and all that sort of thing, which would forever interfere with the assimilation of a genuine Yankee into a regular-looking. These questions are civil, quiet, orderly, kind and possible—they certainly are wonderful in their line of art but beyond that nothing.

The Chinese-American population dropped soon after the 1882 Chinese Exclusion Act. "With the rise of Japanese immigrants, studies in race pressure that contended for Chinese transgression still note the Japanese as the new 'Oriental.' And Chinese immigrants, too, had originally been a transgression of art. Black settlement in the wake of emancipation, white segregation with little civility had simply overlaid old hatreds onto new people."

Commercial Orientalism and Commodified Bodies

During this period, exhibits, films, drawings, such as the Exposition Universelle in 1867, and the 1893 World's Fair (Columbian Purchase Exposition) presented the possibility of racialized bodies. These fairs offered the middle class a commercialized, idealized objects and people for consumption.



A group of people, likely Japanese performers, standing in a line. The photograph is a black and white portrait of a group of people.



Harper's Weekly, 1867, depicting a person in a kimono. The illustration is a woodcut print from a newspaper article.

Much in the way aristocrats and patrons engaged in travel writing, the urban middle classes could now consume a visual array of commercialized, commodified bodies to discover their own personal relationship to other cultures, people, and parts of the world. To survey a panorama of China, a miniature of a primitive village, or a living animal or exotic human on display are to witness an "oriental connoisseur" all evoked a sense of wonderment and situated once a place in the world.



A woman in a kimono, likely a Japanese performer. The photograph is a black and white portrait of a woman in a kimono.

In the performance of The Chinese and the delight in the Caucasian Troupe in 1867, reviews reported a connection between the women, "she looks just like a picture on a fan," and "something the Caucasian in business had languished some alive or an assumed Japanese, thus identifying the actors as something possible for purchase." The comparison clearly displays the objectification of the performers for the audience's pleasure. The reviews allowed themselves permission to suggest that objects upon persons in the guise of representation of Japanese art and aesthetics.



Harper's Weekly, 1867, depicting a person in a kimono. The illustration is a woodcut print from a newspaper article.

Japonisme was also associated with commodity objects, and how the performance of artists were by white female bodies often viewed or commodified.

From the chapter "Outsiders in Demand: Chinese and Japanese Immigrant Performers," narrative text and accompanying images from the circus route book collection and other cited sources

The exhibit integrates images and media from multiple cited sources including archival newspapers and Wikimedia. The project team embedded three third-party plug-ins for richer digital storytelling in its chapters:

ArcGIS is a proprietary industry-standard software platform for GIS professionals to create, analyze, manage, and share geographic information. It provides multiple methods to visualize, map, and analyze data and contains multiple data formats to import in projects.

ArcGIS map visualizations in the exhibit are "[Routing the Circus 1875-1925](#)," "[Native Lands and the Wild West Show](#)," and "[Showmen's Rest](#)."

Knightlab's Timeline JS is an open-source tool that builds interactive timelines and allows integration of multiple media types such as maps, photos, and videos.

The chapter "[Outsiders in Demand: Japanese and Chinese Immigrant Performers](#)" begins with the timeline to illustrate the mounting immigration policies and laws to stop Asians from entering the United States. Timeline JS is also featured in the biographical storytelling of [individuals](#) in the chapter segment "[Portraits of Midwest Musicians](#)" (Image 7).

The screenshot shows a digital interface for a biographical timeline. At the top, it reads "PORTRAITS OF MIDWEST MUSICIANS (7/7)". The main title is "The Big Band: James Wolfscale (~1868-1921)". On the left is a portrait of Prof. James Wolfscale, labeled "PROF. JAMES WOLFSCALE, Leader of Annex Band." Below the portrait is the source: "Source: First Annual Route Book of the Great William Sells and James H. Gray United Shows Season 1900, Page 22." To the right of the portrait is a large, stylized graphic with the text "JAMES WOLFSCALE (~1861-1921)" and a description: "Wolfscale was inducted into the Windjammers Hall of Fame in 2020. Known for big, bigger, and biggest bands. Played cornet and violin and baritone. For more information on Wolfscale, see Ragged but Right, pages 166-174." Below this is a timeline axis from 1855 to 1880, with a marker for "Born" at 1868. The interface includes navigation icons on the left and a right arrow.

Image 7. The Big Band: James Wolfscale (~1868-1921) biographical timeline from the "Portraits of Midwest Musicians" segment in the chapter "[Side Show Sounds: Black Bandleaders Respond to Exoticism](#)"

Histropedia uses data from Wikipedia and Wikidata and generates interactive timelines with events.

The "[American Experiment: Circus in Context](#)" timeline in the exhibit showcases the circus performers in the historical context of compounding conflicts, resistance and innovations during the period in which they lived. The timeline joins many elements of the four-year project: images from the digitized books, access into the digital collection, access into the exhibit, and access to the Wikidata linked data entries.

With a scheduled Wikidata Query for the performers, Wikidata entries are populated in real time into the timeline with the selected event pages from Wikipedia (Image 8).



Image 8. Timeline in the “The American Experiment: Circus in Context” showcases the circus performers in their space and time.

Conclusion

With a linked data and collections as data approach, *Agency Through Otherness: Portraits of Circus Performers, 1875-1925* incorporated metadata and data analysis, data visualization, and digital storytelling components to bring the Circus Route Books collection to a wider audience for research. The exhibit demonstrates the potential of digital technologies, computational tools, and open data for exploring critical questions in the humanities and for presenting scholarship in new forms and interpretations. Importantly in this work, the project team recognized the opportunity to address gaps of representation and expressed a plurality of human experience to diversify the historical record and global knowledge environment.

Acknowledgments

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Links to additional sources:

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GeoNames <https://www.geonames.org/>

Harvard Dataverse <https://dataverse.harvard.edu/>

Histropedia <http://www.histropedia.com/>

ISU ReD <https://ir.library.illinoisstate.edu/>

OpenRefine <https://openrefine.org/>

PCC Wikidata Pilot/Illinois State University

https://www.wikidata.org/wiki/Wikidata:WikiProject_PCC_Wikidata_Pilot/Illinois_State_University

Scalar <https://scalar.me/anvc/scalar/>

Stanford Earthworks <https://earthworks.stanford.edu/>

Timeline JS by Knightlab <https://timeline.knightlab.com/>

Wikidata https://www.wikidata.org/wiki/Wikidata:Main_Page