Network Analysis

An approach often used in sociology, **network analysis** examines connections between **nodes** (people, events, movements etc.) and **edges (**the elements, relationships, connections) that bind them.

Chris Warren, Daniel Shore, Jessica Otis: Six Degrees of Francis Bacon

Chronicle of Higher Education Who Does your College Think Its Peers Are?

WTFCSV – Upload a CSV to automatically generate basic graphs of each column,

Palladio – web-based tool that allows for quick data visualization

Cytoscape—free downloadable software for creating complex network graphs.

Gephi – Gephi is a free, software for network analysis, slightly higher learning curve than Cytoscape.

Sample assignment: Graphing an artistic movement with Cytoscape

1. Identify Source Material
   a. Print or electronic
   b. Could be bibliography, articles, book etc
2. Collaboratively define possible research topics
3. Identify Nodes and Edges
   a. Nodes could be artists, magazines, smaller movements
   b. Edges could be who published in what magazine, connections between artists
4. Collaboratively write data dictionary (google sheets is easiest)
   a. What and how will data be collected
   b. Who will do the collecting (teams or individual students)
5. Make two tables, one for nodes, one for edges
6. Clean student data making it as uniform as possible
7. Upload Nodes table then Edges to Cytoscape to create a network graph
8. Revisit #2 with class
   a. How can this graph be used as evidence in a larger argument?
   b. What can be seen about the connectedness of the material?

Time: At least 2 class sessions. Best utilized if results of this work feeds into final paper or larger project

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Corpus Analysis

Reading a large text or collection of texts from a macro level (**distant reading**) to look for patterns in language or content across this **corpus** of text. This method often uses statistical analyses including **topic modeling** and finding **co-locations** of words.

Mark Algee-Hewitt The Performance of Character

Micki Kaufman Quantifying Kissenger

New York Times Cliches of ESPN

Voyant Tools - Free web-based text analysis tool. Can do KWIC analysis, word clouds, co-locations of terms and several visualizations

AntConc - Suite of tools for more specific analysis of large amounts of text

Topic Modelling Tool - Natural Language Processing command line tool from Stanford

R - Statistics programming language. Requires some familiarity with programming.

Sample assignment: Find Patterns in Text using Voyant

1. Identify Source Material
2. Build your corpus
   a. Collect Plain txt files of books/articles/playbills/government documents etc
      i. Can be done ahead of time or have students choose their own texts
3. Upload your files to Voyant
   a. hit shift and select all the txt files hit upload
4. What do you see?
   a. What are the correlations between words or phrases?
      i. Use Links
      ii. Use correlation
   b. What can you learn about the documents from a distance?
      i. Are some more relevant than others to your research question?
5. Revisit #2 with class
   a. How can this graph be used as evidence in a larger argument?
   b. What can you ask that you couldn't know from simply reading all of these docs?

Time: One class session if material is collected ahead of time. Can be exploratory one-off or a method to help generate paper topics.

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Spatial Analysis

Using mapping technology to extract and analyze spatial data from primary sources. This process can include **georeferencing** historic maps and creating map based visualizations.

Vincent Brown: Jamaica Slave Revolt

Mitch Fraas: Mapping the State of the Union

Scott Nesbit and Ed Ayers: Visualizing Emancipation

Stanford: Enchanting the Desert

We Mapped It So You Don't Have to - Round up of digital mapping programs

KnightLab Story Map - Creates dynamic map that shows movement across time and space. Free web-based

Carto – Free with advanced features availabl that include analysis and animated map tools

QGIS – Open source version of ESRI's ArcGIS.

ArcGIS – Proprietary mapping software. The photoshop of mapping tools. Powerful but steep learning curve.

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Digital Exhibits

Using a **content management system** (a system that holds and organizes digital content) to curate, and display research or archival material. Beyond a website, digital exhibits often include a focus on **metadata** and preservation and make an argument about the content.

Diana Taylor, Lorie Novak et al Dancing with Zapatistas

Janneken Smucker & Charlie Hardy Goin North

Elizabeth Maddock Dillon, Ryan Cordell et al Our Marathon: The Boston Bombing Digital Archive

Omeka - Content management system built specifically for academic digital collections. Free, open source.
Build and curate digital exhibits using Dublin Core metadata standards
Scalar - Platform out of USC for non-linear storytelling. Free and hosted by USC or can be installed and hosted locally. Great for multi-media components

Sample Assignment: Create a class museum with Omeka

1. Create an Omeka site from your class (omeka.org for a free account or your campus install)
2. Have each student collect one item per week (as often as you'd like)
3. Post each item to Omeka as an item with 250 words explaining why the item is important
4. At the end of term have students curate their found items and make an Omeka exhibit
    a. Why did you choose them?
    b. How do you want users to experience them?
    c. How is a digital collection similar to an experience at a physical museum? Different?
    d. Write a 5-7 page paper of how and why you organized it this way

Time: Best if integrated into course assignments as a whole throughout semester. Exhibit by itself can be done in 1-2 sessions

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General Data Visualization

Raw - Offers a selection of graphs from a single spreadsheet upload. Describes types of graphs and parameters for data for each type. Helps explain why and when to use certain graphs

Databasic - A web based tool with a selection of charts and graphs. Chooses graph based on data structure of uploaded content. Can change output with basic code

Palladio - Can map data with locations and do network analysis with simple upload

Datacopia - upload data sheet and automatically produces a variety of different graphs

Picktochart – Infographic builder

Sample assignment: Data tells many stories using Picktochart

1. Instructor: Find an infographic that has a citation (examples below)
   a. http://www.entrepreneurssource.com/blog/wp-content/uploads/2014/12/TES-Infographic-LG.jpg
   b. https://s1.paultan.org/image/2015/12/Helix-Infographic-Visual-630x1009.jpg
2. Find original data source
3. Have students explain message and tone of infographic
   a. What elements are successful? Why?
   b. Which parts are least effective? Why?
4. Have students use same data set to create one graph that accurately represents the findings, create another version that purposely misrepresents the same data.
5. Make an infographic on Picktochart to tell the opposite story

Time: Two sessions. 1 for introducing infographics and discussion of data as a source. Homework to make an alternate infographic. 2 to discuss results.

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