Mapping Properties of Data in Visual Form
February, 2018

“...The more interesting and at the end maybe more important challenge [of data art and digital humanities, generally] is how to represent the personal subjective experience of a person living in a data society. If daily interaction with volumes of data and numerous messages is part of our new “data-subjectivity,” how can we represent this experience in new ways? How new media can represent the ambiguity, the otherness, the multi-dimensionality of our experience, going beyond already familiar and “normalized” modernist techniques of montage, surrealism, absurd, etc.? In short, rather than trying hard to pursue the antisublime ideal, data visualization artists should also not forget that art has the unique license to portray human subjectivity – including its fundamental new dimension of being “immersed in data.” -- Lev Manovich, “Data Visualization as New Abstraction and Anti-Sublime,” 2002.

The following program frames the analyses of several works of art from the Gund Gallery collection to stimulate discussion in response to two overarching questions: How can visualization tools represent patterns and structures in a given data set? What are the most effective, compelling, and meaningful approaches to data visualization that exploit the capabilities of new visual technologies to express fluctuations in data, as well as both particular structures and broad patterns?

Understanding Spatial Arrangements

Keith Jacobshagen, “Road Barn in Platte River Valley,” 1983

- Discuss how human perception privileges spatial arrangements of parts of a scene over other visual elements in order to make sense of the objects in the image.
According to Lev Manovich, information visualization privileges spatial dimensions over other visual dimensions – in other words, we map the most important aspects of the data using geometry: “the meaning and emotional impact of an image depends most of all on the spatial arrangement of its parts, as opposed to colors, textures and other visual parameters.”

Principles of Reduction and Spatial Variation

Frank Stella, “Six Mile Bottom (from Aluminum Series),” 1970
• Analyze and discuss the visual properties and aesthetic strategies of these examples of Minimalist art, particularly the strategy of reduction, (reduction of form to line, flat unmodulated areas of color, monochrome, emphasis on the two-dimensional surface, elimination of subject matter) which was used by modernist artists to achieve purity, to actualize what cannot be represented or interpreted, and to evince the experience of the sublime.

• **Reduction** is an important principle in effective data visualizations, without being too schematic and eliminating nuances, variations and specificities. Discuss differences and similarities in what is achieved in modernist painting and data visualization (coherent and concise conveyance of meaning).

• Consider **spatial variations** in these artworks (position, size, shape, movement) -- what patterns and relations are revealed?

*Frank Stella, “Quathlamba I (from V Series),” 1968*

*Kenneth Noland, “Inner Way,” 1961*
Interpreting Structure, Line, Color, and Texture

- If spatial dimensions are fixed and regular – in other words have the same value in a visual system – we can focus on differences in color, or other visual elements. Discuss in relation to the artwork below.

*Ingrid Calame, “#224 Drawing (Tracings up to the L.A. River placed in the Clark Telescope Dome, Lowell Observatory, Flagstaff, AZ),” 2006*

- Colors advance and recede spatially, we try to make sense of the imagery by searching for recognizable objects based on shape recognition.
- How can colors, tones, transparencies, and different linear qualities, inform our data visualizations in meaningful ways?
- Spatial patterns and structure cannot be arbitrary, but should be driven or determined by the data (patterns and structure can change to reflect certain changes in markers or data). Discuss why.
Imagining New Formats for Network Visualizations

• Lev Manovich identifies a shift in data visualization in recent decades, from graphical reduction to direct visualization (in other words, visualization without reduction, using “artifacts” that already visualize data – magazine covers, film frames, text – and using images instead of vector graphics to create the visual codes). – Lev Manovich, “What is Visualization?”

Robert Rauschenberg, from “Rose Bay, from Rookery Mounds,” 1979

• Often, syntaxes of network visualizations are standardized (radial convergence, arc diagrams), but these imply that a network is always symmetrical or circular in structure. Another strategy is sampling something from a data set – in other words, using original data objects or artifacts from a complete data set instead of reducing these to abstract, graphic shapes and forms.
• Conduct a visual analysis of this lithograph, paying close attention to the different image sources the artist uses, how he combines these, and how we can interpret this work of art as a visual cultural text.
• What does the artistic concept, the formal structure, and the imagery convey about the content of the artwork? What information do the individual images convey, and what larger patterns can you discern from the overall structure of the artwork?
• In what ways is the integration of form and content important to data mapping? (particularly of two intersecting data sets – the structure and form should express the content, and not just be visually pleasing)
Animating Change Through Time-Based Media

- Some data sets have a temporal dimension – we can show flows of data by projecting time into space, by laying out, for example, movie sequences, passages from books in a single image to “see patterns in media elements normally separated by time.” In other words, we don’t have to be reductive.

Jude Anogwih, “Viva Illusion,” 2016 (video installation on view until March 4, 2018)

https://vimeo.com/201337717

- Analyze the formal elements – what new information is introduced over time? How is this accomplished, visually?

Gallery Visit PART II
April, 2018

Gallery session in preparation for creating a metaphoric interface

This discussion focuses on the integration of form and content in modern art as the language of metaphoric thinking to inspire creative approaches to developing useful and visually compelling interfaces.

- Discuss the integral relationship between form and content in each of the artworks pictured below.
Jacob Lawrence, “The Builder’s Family,” 1993

Roy Dean De Forest, “Untitled #158,” 1975
Robert Indiana, “Mississippi 1965,” 1971